CEQA INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Claribel Road at Roselle Avenue Intersection Road Widening Project

Federal ID Number: CML-5938(181)

Stanislaus County, California

JUNE 24, 2016

Prepared by:

FOOTHILL ASSOCIATES

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Claribel Road at Roselle Avenue Intersection Road Widening Project

Federal ID Number: CML-5938(181)

Stanislaus County, California

Submitted to:

Stanislaus County

Public Works Department

1716 Morgan Road

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Prepared by:

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June 24, 2016

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Appendix D — *Claribel Road at Roselle Avenue Intersection Road Widening Project Natural Environmental Study*

Appendix E — *Historic Property Survey Report and Archaeological Survey Report for the Claribel Road and Roselle Avenue Intersection Improvements Project, Stanislaus County, California*

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1.0 MITIGATION NEGATIVE DECLARATION INFORMATION SHEET

PROJECT TITLE: Claribel Road at Roselle Avenue Intersection Road Widening Project

PROJECT LOCATION: City of Riverbank, Stanislaus County, California

DATE: June 24, 2016

PROJECT APPLICANT: Stanislaus County, Department of Public Works

LEAD AGENCY: Stanislaus County, Department of Public Works

CONTACT PERSON: Nate Tumminello, P.E., Associate Civil Engineer, Stanislaus County

PROJECT DESCRIPTION: Implementation of the Proposed Project would construct a signalized intersection at Claribel Road and Roselle Avenue, and would include right-of-way acquisition, utility relocation, widening the existing two-lane roadway at the intersection to accommodate turn lanes to accommodate truck and light vehicle traffic, increased turning radii, new signalization utilities, and drainage improvements. No additional through lanes would be constructed and proposed improvements would not increase capacity of the approach road(s). The Proposed Project would require a total of 38,281 square feet of permanent right-of-way acquisition from the property owners in the northwest, northeast, and southwest quadrants of the intersection. Traffic signalization at the intersection would address safety, operational conditions, and air quality concerns.

DECLARATION

The Stanislaus County Department of Public Works has determined that implementation of the Proposed Project will not result in significant effects on the environment and therefore this project does not require evaluation through the preparation of an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA). This determination is based on the attached Initial Study in support of the following findings:

- The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory;
- The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals;
- The project will not have impacts that are individually limited, but cumulatively considerable;
- The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly; and
- No substantial evidence exists that the project will have a negative or adverse effect on the environment.

The project incorporates all applicable mitigation measures identified in the attached Initial Study.

This Mitigated Negative Declaration reflects the independent judgment of the Lead Agency.

Written comments shall be submitted no later than 30 days from the posting date. The Stanislaus County determination on the draft Mitigated Negative Declaration shall be final.

Submit comments in writing to:

Nate Tumminello, P.E.
Associate Civil Engineer
Stanislaus County
Public Works Department
1716 Morgan Road
Modesto, California 95358
Phone: (209) 525-4101
Email: tumminellon@stancounty.com

2.0 INTRODUCTION

2.1 INTRODUCTION AND REGULATORY GUIDANCE

This document is an Initial Study (IS) supporting a Mitigated Negative Declaration (MND) determination for the Claribel Road at Roselle Avenue Intersection Road Widening Project (Proposed Project). This MND evaluates the potential impacts resulting from implementation of the Proposed Project. This MND has been prepared in accordance with CEQA, Public Resources Code Section 21000 *et seq.*, and the State CEQA Guidelines, 14 California Code of Regulations (CCR) Section 15000 *et seq*.

An Initial Study is prepared by a Lead Agency to determine if a project has the potential to result in significant impacts on the environment (CEQA Guidelines Section 15063). An EIR must be prepared if an IS indicates that the proposed project under review may result in significant impacts to the environment. A Negative Declaration (ND) may be prepared instead, if the Lead Agency prepares a written statement describing the reasons why a proposed project would not have a significant effect on the environment, and therefore does not require the preparation of an EIR. According to CEQA Guidelines Section 15070, a Negative Declaration or Mitigated Negative Declaration shall be prepared for a project subject to CEQA when either:

A. The Initial Study documents that there is no substantial evidence, in light of the whole record before the agency, that the proposed project may result in any significant effect on the environment, or

B. The Initial Study identifies potentially significant effects, but:

    1) Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed negative declaration is released for public review would avoid potentially significant impacts or mitigate potential impacts to less than significant levels, and

    2) There is no substantial evidence, in light of the whole record before the agency that the proposed project as revised, may result in significant impacts to the environment.

2.2 LEAD AGENCY

The Lead Agency is the public agency that has the principal responsibility for carrying out or approving a proposed project. CEQA Guidelines Section 15051 states that if a project will be carried out by a public agency that agency shall be the Lead Agency, even if the project would be located within the jurisdiction of another public agency. Stanislaus County is the designated Lead Agency for the purposes of CEQA.

2.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this Initial Study is to document if implementation of the Proposed Project may result in potentially significant impacts on the environment.

This document is divided into the following sections:

Section 1.0 Mitigation Negative Declaration Information Sheet
Pursuant to CEQA Guidelines 15071, Section 1 includes a brief description of the project, the project location, and the preliminary findings proposed by Stanislaus County, and references the attached Initial Study, including proposed mitigating measures

included within individual resource issue areas as applicable to development of the Claribel Road at Roselle Avenue Intersection Road Widening Project.

Section 2.0 Introduction
This section provides an introduction and describes the purpose and organization of this document.

Section 3.0 Project Description
This section provides a detailed description of the Proposed Project including the location of the project.

Section 4.0 Environmental Evaluation (Initial Study Checklist)
This section describes the environmental setting for each of the environmental subject areas, the regulatory setting, where relevant, and evaluates a range of impacts in response to the environmental checklist. Impacts are classified as "no impact", "less than significant impact," "less than significant with mitigation incorporated," or "potentially significant impact." Where appropriate, mitigation measures are provided that mitigate potentially significant impacts to a less than significant level.

Section 5.0 CEQA Determination
This section provides the environmental determination for the project.

Section 6.0 Report Preparation
This section identifies a list of staff and consultants responsible for preparation of this document, and persons and agencies consulted.

Section 7.0 References
This section identifies the references used in preparation of the MND.

Appendix A Mitigation Monitoring and Reporting Program
This appendix identifies mitigation measures included in the Initial Study and the responsible entity for implementation of the mitigation measures, as required by Section 15097 of the CEQA Guidelines.

Appendix B U.S. Department of Agriculture Farmland Conversion Impact Rating (Form AD-1006)

Appendix C ***Air Quality Conformity Analysis*** **[for the]** ***Signalized Claribel Road/Roselle Avenue Intersection Project, Stanislaus County, California***

Appendix D ***Claribel Road at Roselle Avenue Intersection Road Widening Project Natural Environmental Study***

Appendix E ***Historic Property Survey Report and Archaeological Survey Report for the Claribel Road and Roselle Avenue Intersection Improvements Project, Stanislaus County, California***

Appendix F ***Signalized Claribel Road/Roselle Avenue Intersection Project – Global Climate Change***

Appendix G ***Initial Site Assessment*** **[for the]** ***Claribel Road at Roselle Avenue Intersection Project, Stanislaus County, California***

Appendix H ***Construction Noise Memorandum*** **[for the]** ***Claribel Road at Roselle Avenue Intersection Improvements Project, Stanislaus County, California***

Appendix I ***Claribel Road/Roselle Avenue Intersection Control Evaluation***

2.4 THRESHOLDS OF SIGNIFICANCE

A significant effect on the environment is generally defined as a substantial or potentially substantial adverse change in the physical environment (CEQA Guidelines Section 15358). Environment as used in this definition includes the land, air, water, minerals, flora, fauna, ambient noise, and objects which are historical or aesthetic in nature. The guidelines in the following Initial Study focus on these elements and are used as tools to determine the potential of whether or not an activity is considered significant (CEQA Guidelines Section 15065). Effects are also recognized as to whether they would occur either directly or indirectly as a result of the project.

2.5 TERMINOLOGY USED IN THIS DOCUMENT

This Environmental Checklist in this document utilizes the following terminology to describe the levels of significance associated with project-related impacts:

Potentially Significant Impact: An impact that may have a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382); the existence of a potentially significant impact requires the preparation of an EIR with respect to such an impact.

Less Than Significant with Mitigation Incorporated: A potentially significant impact that could be mitigated to a level of less than significant through the incorporation of mitigation measures.

Less Than Significant Impact: An impact which is less than significant and does not require the implementation of mitigation measures.

No Impact: Utilized for checklist items where development of the project would not have any impact and does not require the implementation of mitigation measures.

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3.0 PROJECT DESCRIPTION

The proposed project location, components, and characteristics are described in the following subsections.

3.1 PROJECT LOCATION

The Claribel Road at Roselle Avenue Intersection Road Widening Project is located within a 15.2-acre area in Stanislaus County, California, Latitude 37° 42' 38.85" North, Longitude 120° 56' 25.4" West, NAD 83 State Plane California Zone III (U.S. feet) and can be located on the *Riverbank* Quad USGS 7.5 Minute Topographic Quadrangle in Township 2 South, Range 9 East, Sections 35 and 36; and Township 3 South, Range 9 East, Sections 1 and 2 (Project Site), as shown on **Figure 3.2-1**.

3.2 ENVIRONMENTAL SETTING

3.2.1 Local Agency Jurisdiction

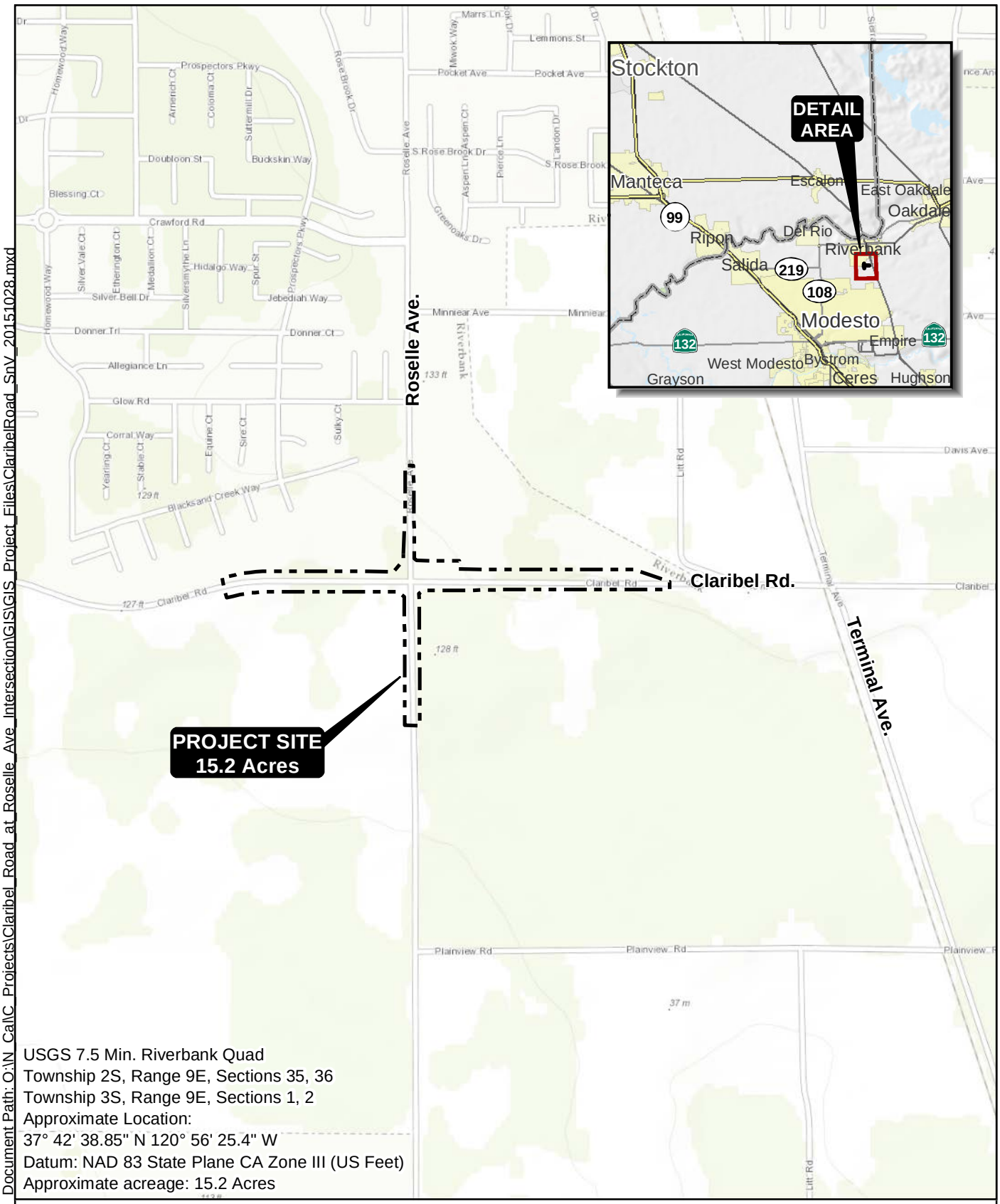
The northern portion of the Project Site, north of Claribel Road, is located within the City of Riverbank, and the southern portion of the Project Site, south of Claribel Road is located within the unincorporated area of Stanislaus County, California.

3.2.2 General Plan Land Use Designation and Zoning Designation

The existing Claribel Road at Roselle Avenue intersection is a Stanislaus County-owned right-of-way; and has no land use designation (**Figure 3.2-2**). The surrounding land use designations to the south, include areas designated as Urban Transition within Assessor Parcel Numbers (APNs) 083-002-024, 083-002-025, 083-002-047, and 083-002-023. Land use to the north is within the City of Riverbank, within APNs 075-014-027, 075-014-026, 075-025-009, 075-025-011, 075-025-008, 075-025-007, 075-025-010, 075-025-006, and 075-075-052. As show on **Figure 3.2-2**, the *City of Riverbank General Plan* (2009) identifies the portion of the Project Site directly north of Claribel Road and within the City of Riverbank city limits as being located within the Mixed Use land use designation. The northern-most tip of the Project Site and surrounding areas are designated as Industrial/Business Park. The Project Site is zoned as Agriculture within the unincorporated Stanislaus County limits (**Figure 3.2-3**). The northern section of the Project Site is within the City of Riverbank and is zoned by the City as Neighborhood Commercial, Single Family Residential, and Public (**Figure 3.2-3**).

3.2.3 Surrounding Land Uses

The Project Site is bordered to the northwest by residential development and the Modesto Irrigation District (MID) Lateral Canal, to the southeast and southwest by agricultural land uses, and to the northeast by agricultural, residential dwellings, commercial development, and the MID Lateral Canal.



USGS 7.5 Min. Riverbank Quad
Township 2S, Range 9E, Sections 35, 36
Township 3S, Range 9E, Sections 1, 2
Approximate Location:
37° 42' 38.85" N 120° 56' 25.4" W
Datum: NAD 83 State Plane CA Zone III (US Feet)
Approximate acreage: 15.2 Acres

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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FIGURE 3.2-1

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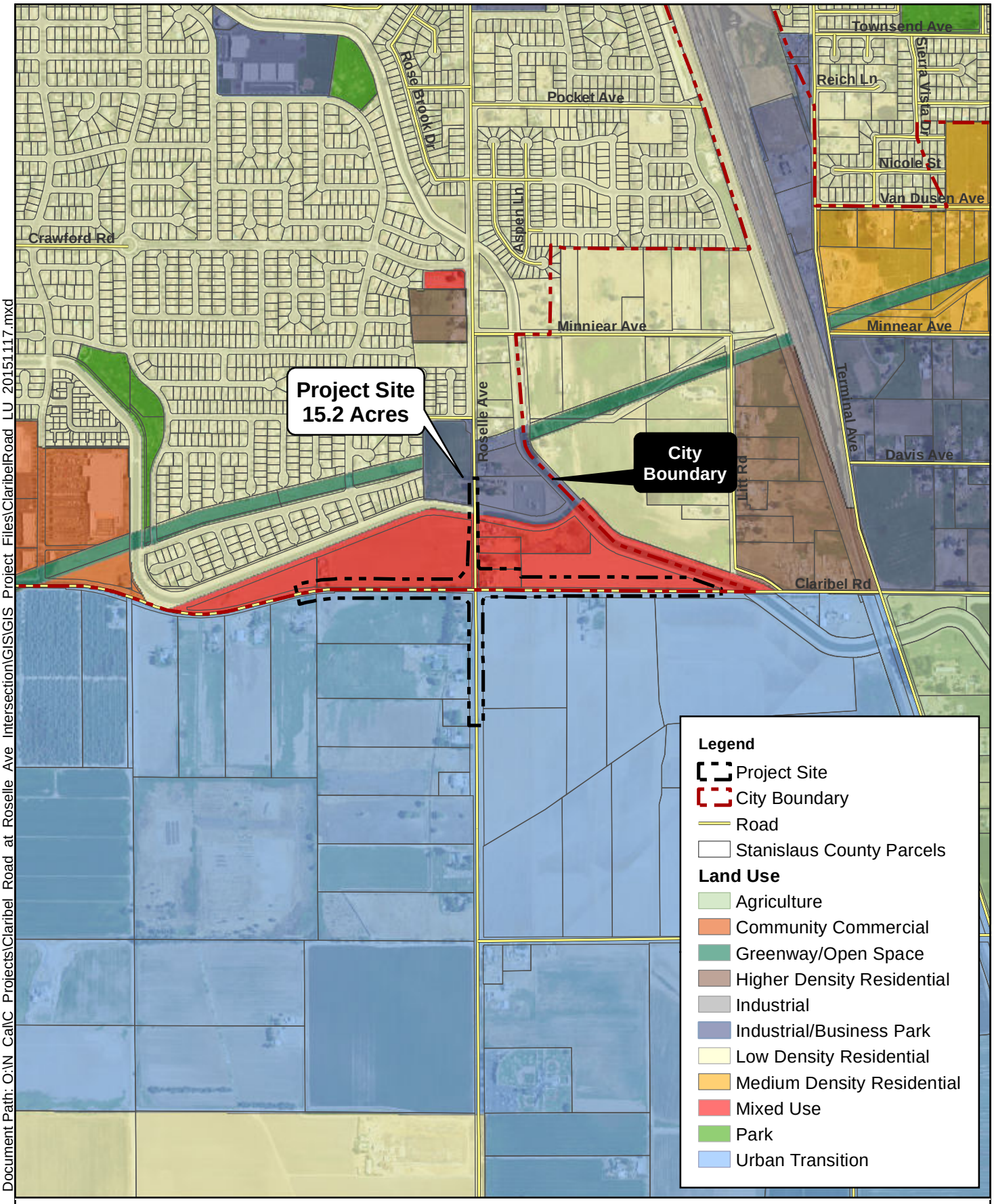

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION LAND USE

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Feet
1 inch = 1,000 feet

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FIGURE 3.2-2

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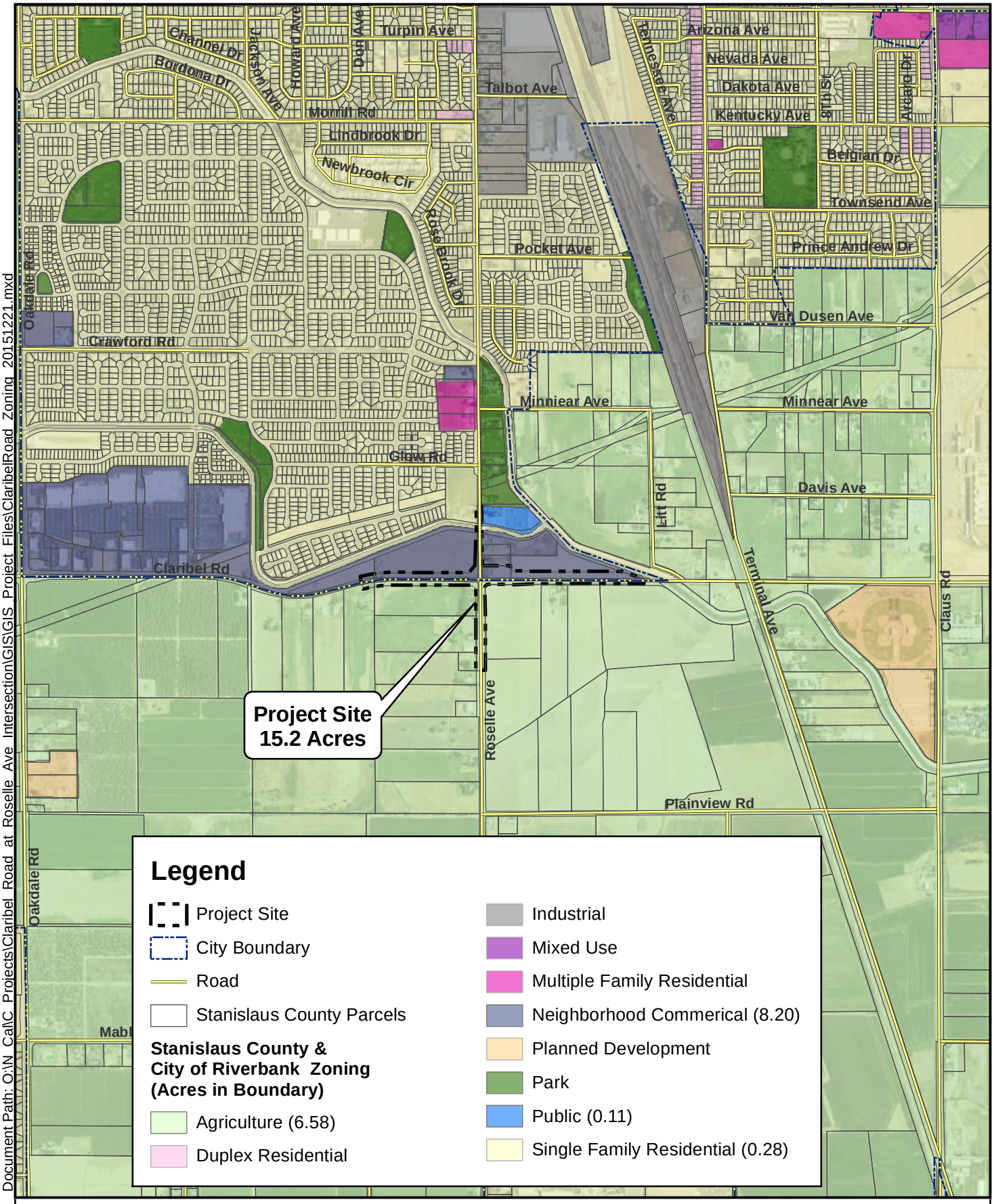

CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION ZONING

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FIGURE 3.2-3

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3.2.4 Biological Communities

The Project Site is primarily characterized by disturbed/developed areas and non-native annual grassland. The extent of individual biological communities mapped within the Project Site is summarized below in **Table 3.2-1**.

Table 3.2-1 — Biological Communities by Acreages

Biological Community	Total Acreage
Agricultural	7.12
Ruderal/Developed	6.77
Irrigated Pasture	1.23
Irrigation Ditch	0.04
Roadside Ditch	0.01
Total	**15.2**

3.2.5 Aquatic Features

The majority of the Project Site has already been developed or is subject to ongoing disturbance from agricultural operations. Roadside ditches and irrigation ditches are the only aquatic features mapped within the Project Site.

3.2.6 Topography

The Project Site is located within the San Joaquin Valley and the general topography of the Project Site is relatively flat. The Project Sites elevations range between 123 and 133 feet above mean seal level (MSL).

3.3 BACKGROUND

3.3.1 Existing Conditions

The existing intersection at Claribel Road and Roselle Avenue contains an all-way stop in combination with an overhead flashing red beacon at the center of the intersection to facilitate traffic control. Roll-over curbs are provided at all corners to facilitate truck turning movements. Under existing conditions, intersection traffic is subject to significant delay, which results in substantial air pollution emissions; using the Highway Capacity Manual (HCM) method, the intersection functions at a Level of Service (LOS) F with 93.5 seconds of delay. The traffic operations are expected to worsen over time.

3.3.2 Alternatives

Stanislaus County considered five alternatives in its *Project Design Study Report* (PDSR) for the project including: 1) No Build; 2) Signal Installation, No Widening; 3) Signal Installation, Widening for Specified Turning Movements; 4) Signal Installation, Widening for Left Turning Movements; and 5) Signal Installation with Widening for All Turning Movements. The PDSR recommended the selection of Alternative 4, which is the Proposed Project. Alternative 4 is the least-cost alternative that meets project purpose and need while providing maximal benefits.

The County also considered a roundabout alternative, but that alternative was eliminated based on rejection by the City of Riverbank.

3.4 PROJECT PURPOSE AND OBJECTIVES

Signalization at the intersection would address safety, operational conditions, and air quality concerns. Existing operations at the Claribel Road and Roselle Avenue intersection are not meeting acceptable levels of service standards required to meet current and anticipated future traffic through the intersection. Proposed signalization of the intersection would include intersection widening and increased turning radii for left turn movements to accommodate light vehicle and truck turning movements. These improvements would increase traffic flow through the intersection improving both air quality and safety hazards.

Planned signalization of the intersection would result in significant reductions in traffic delay and associated air pollution. Stanislaus County has calculated the benefit:cost ratio for the project based on air quality improvements alone at over 12:1.

3.5 PROJECT COMPONENTS

Stanislaus County (County) is proposing the construction of a signalized intersection at Claribel Road and Roselle Avenue. As shown on **Figure 3.5-1**, project development would require acquisition of additional right-of-way, and utility relocation to accommodate proposed improvements, which would include additional turn lanes, increased turning radii for truck traffic, and modernized signalization equipment. No additional through lanes would be constructed and proposed improvements would not increase capacity of the approach road(s) (Proposed Project). Individual project components are described in detail below.

3.5.1 Right-of-Way Acquisition

The Proposed Project would require a total of 154,400 square feet of permanent right-of-way acquisition from the property owners in the northwest, northeast, and southwest quadrants of the intersection. Portions of the following APNs would be acquired for implementation of the Proposed Project: 083-002-024, 083-002-025, 075-025-011, and 075-014-026. The County proposes full take of APN 075-025-009 to support road widening, a retention basin, and potential construction staging (**Figure 3.5-1**).

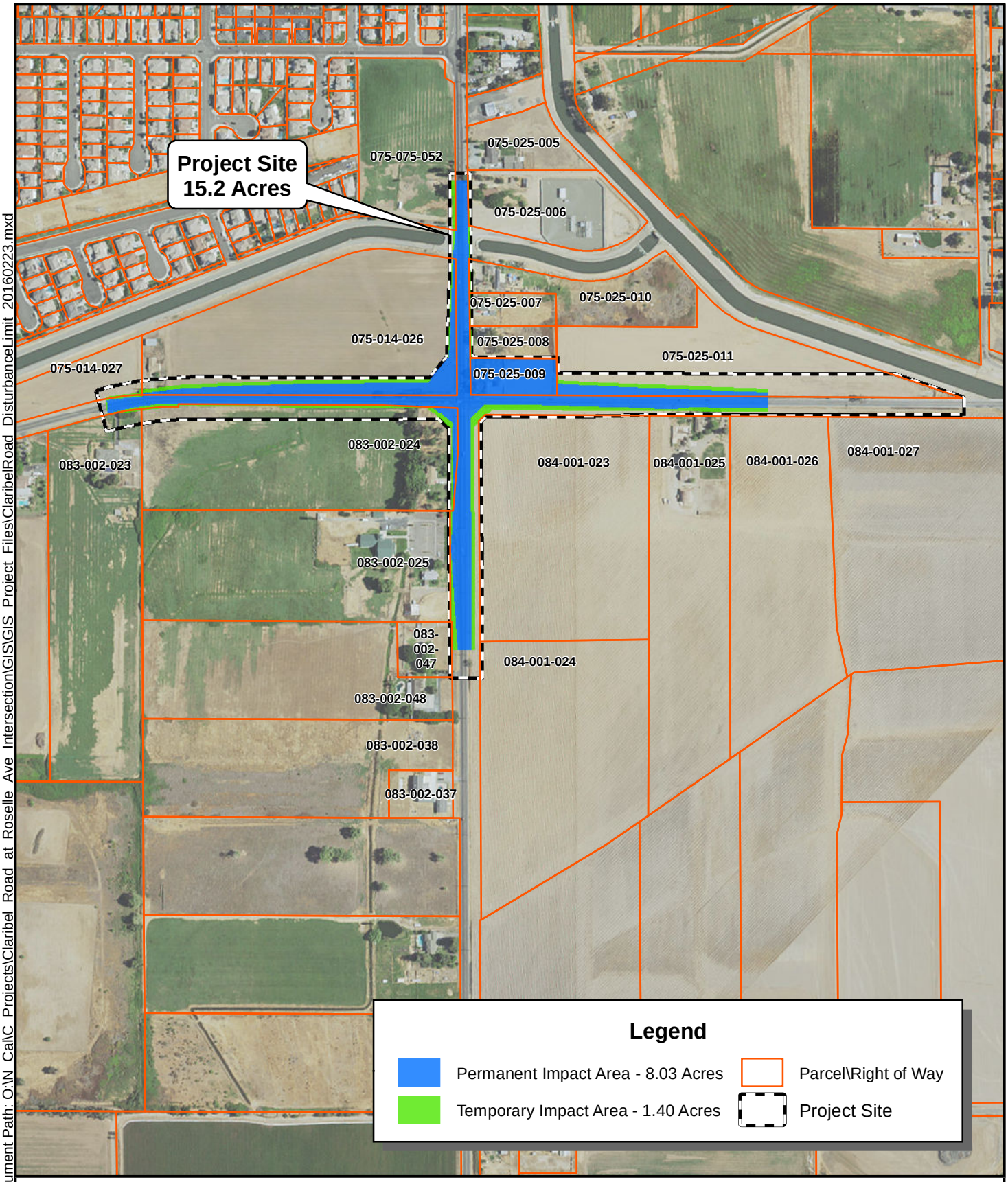
Temporary Construction Easements (TCE) and Permits to Enter and Construct (PTE) may also be needed from all quadrants of the Project Site.

3.5.2 Required Utility Relocation

The existing overhead utility poles along the west side of Roselle Avenue and along the north and south sides of Claribel Road would be relocated, as needed, in conjunction with the project. Underground utilities within the Project Site, if present, would also be relocated as needed.

3.5.3 Proposed Facilities

Widening of the east and west legs of Claribel Road, and the north and south legs of Roselle Avenue would accommodate existing traffic conditions. From the intersection, the proposed lengths of improvement for each leg are as follows: 1,400 feet to the west, 1,300 feet to the east, 800 feet to the north, and 900 feet to the south. The central portion of the intersection would be widened to accommodate the new turn lanes. The corner radii would also be increased to facilitate right turn movements for trucks and light vehicles.



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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION DISTURBANCE LIMIT

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

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Feet
1 inch = 500 feet

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FIGURE 3.5-1

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Proposed signal improvements would involve the installation of foundations, poles, and mast arms to support the proposed signal assemblies, street name signs and luminaries as well as control boxes and other related equipment. Multi-phase control would be provided to accommodate anticipated turning movements on all four approaches.

The Proposed Project would include rehabilitation of the existing pavement structure/section on all intersection approaches. Rehabilitation may include in-place recycling, removal and replacement, grinding and overlay, or some other similar strategy determined during final design. The improved roadway sections would be restriped and signed in accordance with County and State of California standards.

Drainage improvements would also be developed to channelize and retain project-related storm water runoff. Proposed swales would replace existing roadside ditches conveying storm water to the proposed retention basin (**Figure 3.5-2**). The retention basin is proposed at the northeast corner of the intersection, with an approximate size 64 feet by 298 feet with a depth of 10 feet. Proposed swales would be trapezoidal-shaped, with a one-foot bottom width, 4:1 side slopes and a depth of 18 inches. Two drainage swales are proposed along the north side of Claribel Avenue. One swale would begin approximately 1,000 feet west of the intersection and would carry flows towards the intersection, flowing through a culvert under Roselle Avenue to the proposed retention basin. The second swale would begin 900 feet east of the centerline of the intersection and would be graded to convey storm water directly to the retention basin. Two drainage swales are also proposed along the west side of Roselle Avenue. The first swale will extend approximately 500 feet to the north of the intersection and will convey storm water to the south, under Roselle Avenue within the proposed culvert and into the retention basin. The second swale would extend 650 feet to the south of the intersection and will be graded to convey storm water northward and into the retention basin.

3.5.4 Ground Disturbance

Project development would require grading within exiting undeveloped areas within the County right-of-way as well as within areas of proposed right-of-way acquisition.

After construction, affected areas would be revegetated with plant species native to the vicinity and approved by a Caltrans Biologist. All revegetated areas would also avoid the use of species listed in the Cal-IPC that have a high or moderate rating.

3.5.5 Excavation

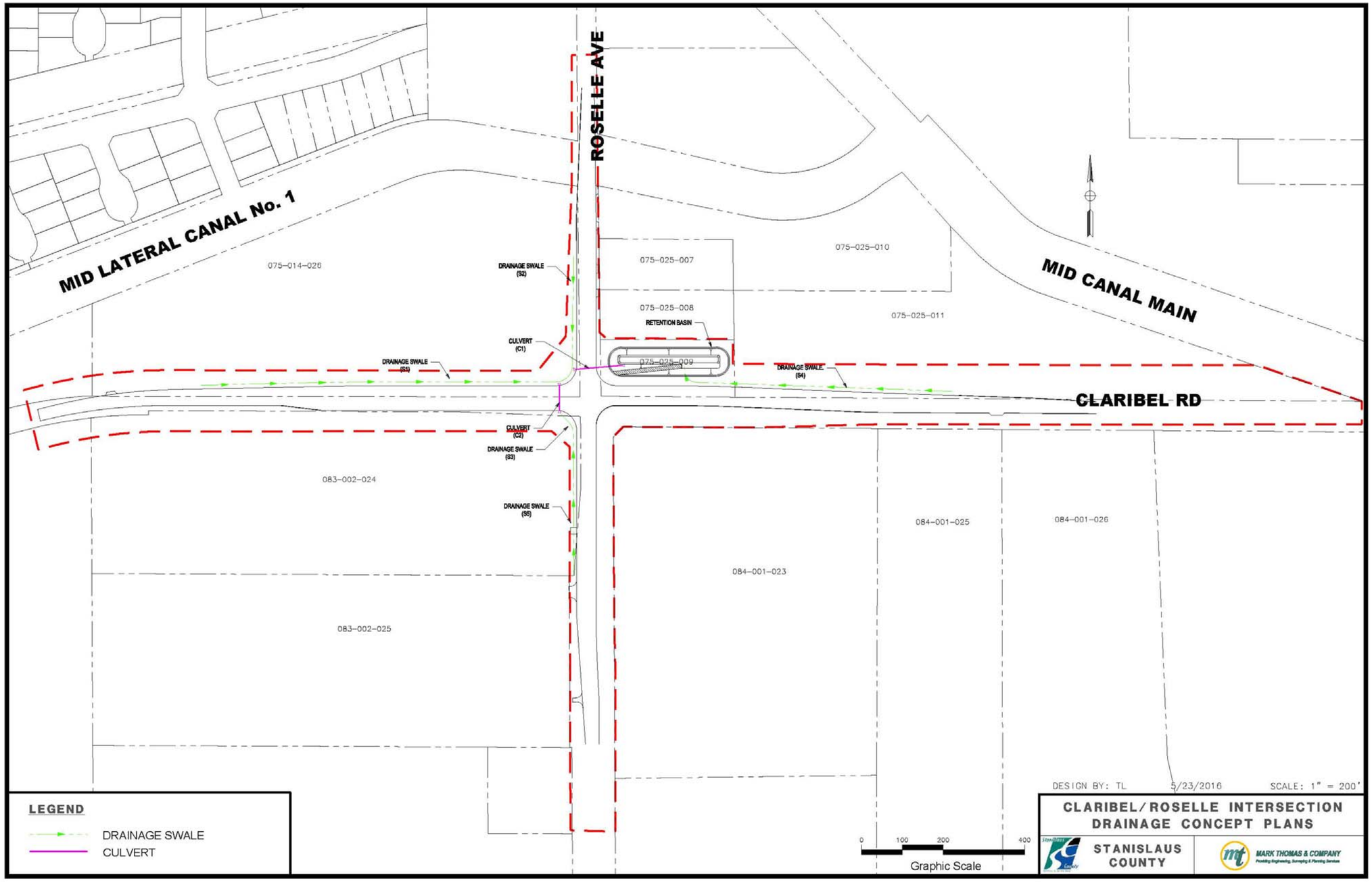
Excavation up to a depth of five feet would be required to establish roadway subgrades, construct drainage facilities, and foundations for signals and signage.

3.5.6 Vegetation Removal

Vegetation removal would be required within the existing undeveloped areas within County right-of-way, as well as within undeveloped areas of proposed right-of-way acquisition, and may involve the removal of small trees.

3.5.7 Staging Areas

Equipment and materials staging for the project are likely to occur within off-site contractor facilities, along the existing County road right-of-way, and within right-of-way proposed for acquisition. One potential staging area is identified in the northeast corner of the Project Site, within APN 075-025-009



FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE	CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION DRAINAGE CONCEPT PLAN	NOT TO SCALE	Layout By: CTGH Date: 05/26/16	FIGURE 3.5-2

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3.5.8 Construction Access

Existing traffic through the Claribel Road and Roselle Avenue intersection would be accommodated during the construction period pursuant to the Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of any roads. Traffic would be diverted onto a half-road section to allow construction of new facilities on the opposite side. Reversing traffic control (one-way traffic with flagging) may be used on a limited basis.

3.5.9 Construction Schedule

Construction would commence in the spring of 2018 and last approximately five months.

3.6 OTHER PROJECT APPROVALS

Development of the Proposed Project is anticipated to require permits and authorizations as summarized in **Table 3.6-1** below.

Table 3.6-1 — Potential Resource Agency Permitting Requirements

Approving Agency	Permit/Approval
Federal Agencies	
U.S. Army Corps of Engineers (USACOE)	Section 404 Authorization for discharges related to dredging or fill of waters of the U.S. if project improvements impact federally-jurisdictional waters.
U.S. Fish and Wildlife Service (USFWS)	Consultation under Section 7 of the Federal Endangered Species Act if habitat for listed species is affected as a result of development of the Proposed Project.
State Agencies	
State Water Resources Control Board, Regional Water Quality Control Board (SWRCB, RWQCB)	Coverage under the General Construction Activity Storm Water Permit (§ 402 of the Clean Water Act, 40 CFR Part 122), 401 Water Quality Certification (if Section 404 Authorization is required).
State Water Resources Control Board, Regional Water Quality Control Board (SWRCB, RWQCB)	Waste Discharge Requirements, Porter Cologne Water Quality Control Act (Section 13260(a))
Local Agencies	
Stanislaus County	Project Approval/California Environmental Quality Act IS/MND Adoption
Stanislaus County, Department of Public Works	Grading Permit

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4.0 ENVIRONMENTAL EVALUATION

4.1 AESTHETICS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

4.1.1 Environmental Setting

The Project Site is located within the southern section of the City of Riverbank and unincorporated Stanislaus County. Stanislaus County has abundant agricultural resources and the Project Site and vicinity are characterized by large parcels of agricultural land and irrigated pasture. The Project Site is within a rural agricultural area within the San Joaquin Valley, and is characterized by relatively flat topography, with elevations ranging from 123 feet above MSL to 133 feet above MSL.

Lands adjacent to the Project Site are generally characterized by agricultural lands, and also includes the Modesto Irrigation District (MID) Lateral Canal Number 6, MID Main Canal, and residences.

Development of the Proposed Project would include traffic signalization and intersection widening for left turning movements for the intersection at Claribel Road and Roselle Avenue.

The State of California Department of Transportation (Caltrans) administers State scenic route designations within Stanislaus County for State and federal roadways. Within Stanislaus County, Interstate 5 is the only adopted State scenic highway. There are several roadways within Stanislaus County that have been identified as potential scenic routes including State Highway 132, La Grange Road, Orange Blossom Road, Del Puerto Canyon Road, and State Highway 4. These roads are considered potential for scenic routes as they are characterized by open, undeveloped areas characterized by either agriculture or the natural landscape. The Project Site is not located within any designated or potentially-designated scenic roadways.

4.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The Project Site is located within the City of Riverbank and unincorporated Stanislaus County. The Proposed Project would widen the existing intersection left turn lanes and install signalization to better accommodate traffic and reduce air quality emissions. The east and west legs of Claribel Road and the north and south legs of Roselle Avenue would be widened. From

the intersection the lengths of improvements for each leg would be as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south. Proposed signalization would install foundations, poles, mast arms to support and proposed signal assemblies, street name signs and luminaries, as well as control boxes and other electrical equipment. Developing the intersection would result in a visually different intersection then prior to project construction. However, the installation of signalization and widening of the intersection would not substantially affect a scenic vista because the agricultural character of the area surrounding the Project Site would remain and the signalization would not disrupt this view. The Project Site is not within a land category classified as containing a scenic resource. Therefore, impacts are considered **less than significant**.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

No Impact. The Project Site is not located within a State scenic highway nor is the site visible from a State highway, including any State highways designated as scenic highways. Therefore, **no impact** to scenic resources within a State scenic highway would result from development of the Proposed Project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The area surrounding the Project Site is characterized by agricultural lands intermixed with scattered residences. Temporary impacts to the visual character of the Project Site would occur during the construction phase of the project. Construction equipment and traffic control would be present on the Project Site during construction, which would be viewed by motorists that utilize the Claribel Road at Roselle Avenue intersection. The visual construction-related change to the character of the Project Site would be temporary, only occurring during the approximately five-month construction period. Project construction would require ground disturbance and vegetation removal in existing undeveloped areas within the County right-of-way, as well as within undeveloped areas of proposed right-of-way acquisition. Following the completion of construction, affected areas would be revegetated with plant species native to the vicinity and approved by a Caltrans Biologist. All revegetated areas would avoid the use of species listed in the Cal-IPC that have a high or moderate rating. Revegetation would ensure that construction-related disturbance would not permanently impact the Project Site.

After construction, the intersection would include signalization and wider left turn lanes. These improvements would be the most significant long-term visual changes to the Project Site. Lands adjacent to the Project Site would maintain their existing visual character. However, the land acquired as proposed right-of-way would be incorporated into the intersection design. Lands proposed for acquisition include a total of 38,281 square feet of permanent right-of-way acquisition from property owners in the northwest, northeast, and southwest quadrants of the intersection. The viewer's exposure or sensitivity to the intersection change would be minor, as traffic would have improved flow and an existing overhead beacon and stop signs are currently present within the Project Site. Therefore, impacts to the visual character and quality of the Project Site and its surroundings are considered **less than significant**.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The Proposed Project would install signalization and widen the Claribel Road at Roselle Avenue intersection. The existing sources of light and glare from the Project Site are generated by vehicle usage on Claribel Road and Roselle Avenue, as well as from the overhead flashing red beacon at the center of the intersection. Construction activities would temporarily introduce equipment and vehicles to the Project Site. To the extent that construction activities would occur in the evening hours after sunset, impacts from construction lighting may occur. The expected construction start

date for the Proposed Project is spring of 2017 with a duration of approximately five months, therefore any light inducing impacts would be temporary.

The Proposed Project would include signalization which would modify traffic-control lighting at the intersection. There is an existing overhead flashing red beacon within the Project Site that currently produces light. The Proposed Project would therefore not result in substantial additional light or glare which would adversely affect day or nighttime views in the project area; therefore, impacts from development of the Proposed Project are considered **less than significant**.

4.1.3 Mitigation Measures

No mitigation is warranted.

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4.2 AGRICULTURE AND FOREST RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	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.				
Would the project:					
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 a non-agricultural use?	☐	☐	☒	☐
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

4.2.1 Environmental Setting

The Division of Land Resource Protection of the California Department of Conservation has developed the Farmland Mapping and Monitoring Program (FMMP) which monitors the conversion of the State's farmland to and from agricultural use. Data is collected at the county level to produce a series of maps, updated every two years, identifying eight land use classifications using a minimum mapping unit of 10 acres. Agricultural land is rated by the Natural Resource Conservation Service (NRCS) according to soil quality and irrigation status. Land for agricultural production is designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. The FMMP designates the following categories of land uses within their program: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, Rural Residential Land, Other Land, and Water.

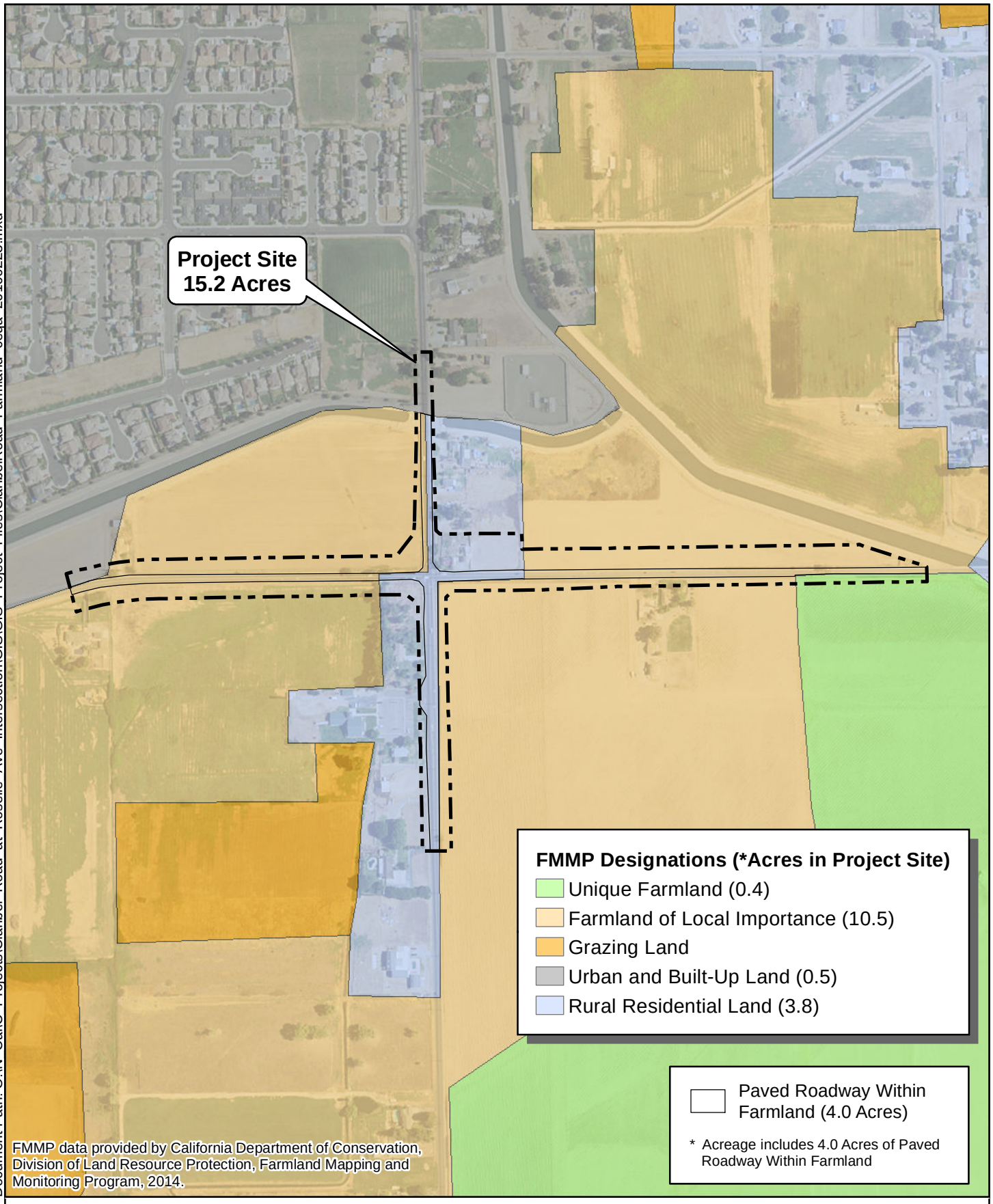
Maps and data from the FMMP were reviewed to evaluate the FMMP designations for land within the Project Site. Information for the Project Site from the 2014 FMMP data is summarized below in **Table 4.2-1**, and shown on **Figure 4.2-1** and **Figure 4.2-2**.

Table 4.2-1 — FMMP Project Site Designations

FMMP Designation	Acres in Project Site *(Existing Claribel Road and Roselle Avenue Paved Roadway Acreage Removed)*	Farmland within Stanislaus County Right-of-Way
Farmland of Local Importance	8.3	2.3
Unique Farmland	0.4	0.3
Urban and Built-Up Land	0.5	--
Rural Residential Land	1.9	--

The Project Site consists of lands within County right-of-way as well as privately owned land. The zoning designation for the Proposed Project is Agricultural within the Stanislaus County and Neighborhood Commercial for the portion of the Project Site within the City of Riverbank. The Stanislaus County Zoning designation is intended to support and enhance agriculture as the predominant land use in unincorporated areas of Stanislaus County. The total acreage of land within the Stanislaus County Agricultural Zoning designation is 6.58 acres (**Figure 3.2-3**). The Proposed Project would require right-of-way acquisition from Stanislaus County APN 083-002-024, which is zoned as Agricultural.

The Farmland Conversion Impact Rating (Form AD-1006), from the U.S. Department of Agriculture (USDA) was completed for the Proposed Project. This form represents the federal process to assess impacts to farmlands under the Farmland Protection Policy Act (FPPA). The F*armland Protection Policy Act Manual* was consulted to complete the Form AD-1006 (Form), particularly relevant to Part VI, Site Assessment Criteria. Development of the Proposed Project would convert a total of 8.7 acres of designated farmland (2.58 acres within existing County right-of-way and 6.12 acres within proposed right-of-way), for a resulting total score of 48. A description of individual criteria for each site assessment factor and completed for the Form can be found in **Appendix B**.



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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION FARMLAND

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 250 500
Feet
1 inch = 500 feet

Drawn By: MUB
Date: 04/29/2016

FIGURE 4.2-1

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION FARMLAND IMPACTS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 250 500
Feet
1 inch = 500 feet

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Date: 02/23/2016

FIGURE 4.2-2

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4.2.2 Discussion

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 a non-agricultural use?

Less Than Significant Impact. Lands within and surrounding the Project Site are designated as Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Rural Residential Land according to the FMMP 2014 Important Farmland Map update (**Figure 4.2-1**).

As shown on **Figure 4.2-2**, approximately 0.4 acre of Unique Farmland and 8.3 acres of Farmland of Local Importance designated by the State FMMP are mapped within the Project Site. As also shown on **Figure 4.2-2**, of the farmland mapped within the Project Site, approximately 0.31 acres of Unique Farmland and 2.27 acres of Farmland of Local Importance (2.58 acres total) are mapped within existing Stanislaus County right-of-way. An additional 6.12 acres (0.4-acre Unique Farmland and 8.3-acre Farmland of Local Importance) are located adjacent to existing right-of-way and are proposed for right-of-way acquisition related to development of the Proposed Project.

Development of the Proposed Project would result in conversion of approximately 8.7 acres of designated farmland (2.58 acres within existing County right-of-way and 6.12 acres within additionally proposed right-of-way). The converted land is both within and adjacent to existing County right-of-way and would be utilized for proposed intersection improvements.

Development of the Proposed Project would result in the loss of 8.3 acres of land designated as Farmland of Local Importance. The 8.3 acres of Farmland of Local Importance impacted by the Proposed Project represents less than 0.001 percent of the total amount of Farmland of Local Importance within Stanislaus County, and is therefore nominal compared to the 2,599,222 acres of Farmland of Local Importance mapped throughout the County (CDOC 2015).

Therefore, impacts related to conversion of farmland to non-agricultural use as a result of development of the Proposed Project are considered **less than significant**.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Less Than Significant Impact. The northern portion of the Project Site within the City of Riverbank is zoned as Neighborhood Commercial (C-1). Therefore, the portion of the Project Site within the City of Riverbank would not conflict with existing zoning for agricultural use or a Williamson Act contract.

The southern portion of the Project Site located in Stanislaus County is zoned for agricultural use (A-2-10). According to Zoning Ordinance 21.2.020(B1) parcels are zoned as A-2-10 (general agriculture, 10-acre minimum, urban transition). Project implementation would require County roadway right-of-way acquisition, Temporary Construction Easements, and/or Permits to Enter and construct for the following APN's zoned as agricultural by Stanislaus County:

- 083-002-024
- 083-002-023
- 083-002-025
- 083-002-047

Land within each of the aforementioned parcels not acquired for right-of-way would remain zoned as A-2-10 and agricultural activities on these parcels would continue to operate as under existing conditions.

There are no parcels within the Project Site that are currently under Williamson Act contracts. Therefore, impacts are considered **less than significant** and no mitigation is required.

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

No Impact. The Project Site is not zoned as forest land or Timberland Preserve, nor is the Project Site adjacent to any land zoned as forest land or Timberland Preserve (**Figure 3.2-3**). The Project Site would not impact any 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)). Therefore, **no impact** would result from the Proposed Project.

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

No Impact. The Project Site and lands adjacent to the Project Site have no designated forest land. The Proposed Project would therefore, not involve the loss of any forested land. There would be no land converted to non-forest use or loss of forest; therefore, **no impact** would result from development of the Proposed Project.

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 forestland to non-forest use?

Less Than Significant Impact. The Proposed Project would involve installation of signalization utilities and road widening at the existing intersection of Claribel Road and Roselle Avenue. Agricultural land uses are present adjacent to the Project Site and within the project vicinity. The Proposed Project would convert approximately 0.4 acres of Unique Farmland and 8.3 acres of Farmland of Local Importance to County right-of-way (**Figure 4.2-2**). This conversion represents less than 0.001 percent of the Farmland of Local Importance mapped throughout Stanislaus County and all right-of-way acquisition would occur adjacent to an existing road corridor and intersection. Agricultural production potential would not be diminished on remaining agricultural lands in the vicinity of the Project Site as a result of project development. Therefore, impacts are considered **less than significant**.

4.2.3 Mitigation Measures

No mitigation is warranted.

4.3 AIR QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	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.					
Would 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)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 Environmental Setting

The Proposed Project is located within the San Joaquin Valley Air Basin (SJVAB), which is comprised of approximately 25,000 square miles and covers all of eight counties in California's Central Valley including: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the western portion of Kern County. The SJVAB is bounded on the west by the Coast Ranges, on the east by the Sierra Nevada, and on the south by the Tehachapi Mountains. The valley is topographically flat and opens up to the sea at the Carquinez Strait where the San Joaquin-Sacramento Delta empties into the San Francisco Bay. These topographic features restrict air movement through and out of the basin (SJVAPCD 2012).

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural activities that produce emissions. The main anthropogenic activities that contribute to emissions are the increase in traffic activity and commuter transportation resulting from the increased population in the air basin (SJVAPCD 2015). Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the San Joaquin Valley are conductive to high ozone levels, further contributing to pollution in the valley. Inversion layers in the winter can trip emissions of directly emitted $PM_{2.5}$ precursors that accumulate to unhealthy levels. Pollution sources coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air (SJVAPCD 2015).

The San Joaquin Valley Air Pollution Control District (Valley Air District) is made of all eight counties within the SJVAB and governed by a fifteen-member Governing Board consisting of a Board of Supervisors of all eight counties (SJVAPCD 2012). The Valley Air District is a public health agency created to improve the health and quality of life for valley residents though air quality management strategies, and is responsible for implementing and enforcing emissions standards and other regulations pursuant to federal and State laws.

The Valley Air District works jointly with the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) to improve air quality though a variety of programs. The USEPA has identified regions as being in "attainment" or "non-attainment" for certain criteria air pollutants depending on whether the region meets the requirements stated in the National Ambient Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the USEPA. The SJVAB attainment statuses for each criteria pollutant are shown below in **Table 4.3-1**.

Table 4.3-1 — SJVAB Air Quality Attainment Status for Stanislaus County

Pollutant	State	Federal
Ozone (1 hour)	Severe/Nonattainment	Revoked in 2005
Ozone (8 hour)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified
Sulfur Dioxide	Attainment	Unclassified/Attainment
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

Source: SJVAPCD 2015.

The Valley Air District has developed several plans to attain State and federal standards for ozone and particulate matter (PM). The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced (SJVAPCD 2015). The SJVAPCD is responsible for formulating and implementing Attainment Demonstration Plans (ADP) for the Air Basin. The latest plans address several State and federal planning requirements and incorporate significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

In order to evaluate ozone and other criteria pollutant emissions and support attainment goals for those pollutants, the Valley Air District developed the *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI has established significance thresholds for emissions expressed in tons per year, and significance thresholds for Toxic Air Contaminants (TACs) expressed in amount of exposure. These thresholds represent the Valley Air District's current established thresholds of significance for use in the evaluation of air quality impacts associated with proposed land development projects.

Table 4.3-2 — SJVAPCD Air Quality Thresholds of Significance for Criteria Pollutants

Pollutant	Construction Emissions (tons/year)
CO	100
NO_x	10
ROG	10
PM_{10}	15
$PM_{2.5}$	15

Source: SJVAPCD, available online:http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf.

4.3.2 Discussion

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

Less Than Significant Impact. The Proposed Project would construct signalization and widened turn lanes at the Claribel Road at Roselle Avenue intersection. The Proposed Project is consistent with the site land use and zoning; construction of the Proposed Project would not conflict with or obstruct implementation of any air quality plan. Proposed improvements also include consistency with the goals and policies identified in the *Stanislaus County General Plan, Circulation Element* pertaining to sustainability and overall strategy for air quality (Stanislaus County 1994b).

Goal Six: Improve Air Quality

Policy Twenty: *The County shall strive to reduce motor vehicle emissions by reducing vehicle trips and vehicle miles traveled and increasing average vehicle ridership.*

Implementation Measures:

1. *Through strategies identified in the Circulation Element, ensure that circulation systems are designed and maintained to minimize traffic congestion and vehicle emissions.*

The Proposed Project would reduce congestion through implementation of signalization and left turn lanes, and would reduce overall emissions (KD Anderson 2016a). The Proposed Project would not result in the generation of any additional vehicle trips through the intersection and is not expected to increase vehicle miles traveled. Construction of the Proposed Project would be implemented consistent with applicable regulatory standards and requirements, including consistency with all Valley Air District rules and thresholds; therefore, impacts are considered **less than significant**.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant with Mitigation Incorporated. The short-term (construction) and long-term (operational) air quality impacts associated with implementation of the Proposed Project are discussed below.

Construction Emissions

Construction of the Proposed Project would be short-term and is anticipated to commence in the spring of 2017, with expected completion in approximately five months. Construction exhaust emissions would be generated from construction equipment, earth moving activities, construction worker commutes, and construction material hauling during the construction work window. The aforementioned activities would involve the use of diesel-powered equipment that would generate emissions criterial pollutants, such as NO_x. Project construction activities also represent sources of fugitive dust which includes PM_{10} and $PM_{2.5}$ emissions. Construction-related activities remain of potential concern due to the fact that the SJVAB is currently designated as "non-attainment" for ozone and PM standards.

Although the SJVAPCD GAMAQI requires the implementation of PM_{10} control measures rather than a quantitative analysis of project emissions, short-term, construction-related emissions resulting from project construction were estimated using the Road Construction Emissions Model, a spreadsheet-based model specifically designed to estimate emissions associated with construction of roadway facilities and other linear projects (**Appendix C**). The model uses basic project information to estimate a construction schedule and quantify exhaust emissions from heavy-duty construction equipment, haul trucks, and

worker commute trips, as well as fugitive particulate matter dust (KD Anderson 2016a). The pollutant emissions estimated from unmitigated project construction are shown below in **Table 4.3-3**.

Table 4.3-3 — Estimated Construction Emissions (Total Project Area)

Project Phases	ROG (lbs./day)	NO_x (lbs./day)	Total PM_{10} (lbs./day)	Total $PM_{2.5}$ (lbs./day)	Exhaust PM_{10} (lbs./day)	Exhaust $PM_{2.5}$ (lbs./day)
Grubbing/Land Clearing	3.4	35.6	77.6	17.2	1.6	1.4
Grading/Excavation	15.5	161.8	84.0	23.1	8.0	7.3
Drainage/Utilities/Sub-Grade	10.6	94.9	81.5	20.8	5.5	5.0
Paving	4.5	38.1	2.5	2.3	2.5	2.3
Total (tons/construction project)	0.6	6.1	3.9	1.0	0.3	0.3

Source: KD Anderson 2016a, Road Construction Emissions Model, Version 7.1.5.1 (**Appendix C**).

PM_{10} estimates assume 50% control of fugitive dust from watering and associated dust control measures.

Total PM_{10} emissions are the sum of exhaust and fugitive dust emissions.

Estimated maximum unmitigated project construction emissions would remain below the SJVAPCD significance thresholds shown in **Table 4.3-2**, for all phases of project construction. However, Valley Air District Rule VIII requires control of fugitive dust emissions from outdoor fugitive dust sources and specifies measures to control fugitive dust on construction sites. Implementation of **Mitigation Measure AQ – 1** would require the application of several fugitive dust control measures, recommended by the SJVAPCD, to reduce fugitive dust on the Project Site during project construction.

Valley Air District Rule 9510 (Indirect Source Review) applies to any transportation project where construction exhaust emissions equal or exceed two tons of NO_x or two tons of PM_{10}. The Proposed Project is anticipated to exceed both two tons of NO_x and PM_{10} and therefore Rule 9510 applies to the Proposed Project. Rule 9510 is intended to reduce a project's impact on air quality through project design elements or mitigation by payments of applicable off-site mitigation fees. Compliance would reduce construction exhaust of NO_x and PM_{10} emissions by 20 percent and 45 percent respectively. Compliance with **Mitigation Measure AQ – 2** would require compliance with Rule 9510 and would reduce construction emissions of NO_x and PM_{10} by 20 percent and 45 percent respectively by applying methods, such as newer lower emitting equipment, to reduce construction emissions within the Project Site. Therefore, air quality impacts from construction of the Proposed Project would be less than significant with mitigation incorporated.

Operational Emissions

The Proposed Project would improve the Claribel Road at Roselle Avenue intersection and would not generate any new vehicle trips, therefore long-term operational effects of roadway improvement projects on emissions result from changes in traffic volumes and changes in vehicle speed (KD Anderson 2016a). As described in a February 11, 2016 memorandum from Nate Tumminello, P.E. of the Stanislaus County Department of Public Works to the Stanislaus County Council of Governments Interagency Consultation Partners, Subject: *Consultation on PM_{10} and $PM_{2.5}$ Hot-spot Conformity Assessment for The Signalized Claribel Road/Roselle Avenue Intersection Project*, the Proposed Project would not result in a change in traffic volumes (KD Anderson 2016a). Therefore, long-term operational effect of the Proposed Project on criterial pollutant emissions would be due to vehicle speed.

The *Air Quality Conformity Analysis*, presented by KD Anderson & Associates, Inc. (2016a) presents a comparison of intersection Level of Service (LOS) within and with the Proposed Project, under existing background, near-term future background, and long-term future background conditions (**Appendix C**).

The Proposed Project would not degrade LOS at the intersection, and in almost every scenario would improve LOS at the intersection (KD Anderson 2016a). Project-related improvements in LOS indicate that vehicles would have reduced idling time and less pollutant emissions. Therefore, operational emissions associated with the Proposed Project would not contribute substantially to an existing or projected air quality violation, and impacts are considered less than significant.

Overall

Implementation of the Proposed Project would not exceed the current applicable thresholds of significance, because the Proposed Project would decrease the LOS and would not result in additional vehicle generation. Project construction would not exceed the current applicable thresholds of significance for air pollutant emissions. However, the Valley Air District Rule VIII requires control of fugitive dust emissions from outdoor fugitive dust sources and specifies measures to control fugitive dust on construction sites. Implementation of **Mitigation Measure AQ – 1** would require the application of several fugitive dust control measures, recommended by the SJVAPCD, to reduce fugitive dust on the Project Site during project construction, and **Mitigation Measure AQ – 2** would require reduced onsite emissions utilizing less-polluting construction equipment. Therefore, impacts are considered **less than significant with mitigation incorporated**.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. Stanislaus County is currently designated as non-attainment for ozone PM_{10}, and $PM_{2.5}$. Projected growth and combined population, vehicle usage, and business activity within Stanislaus County, in combination with other past, present, and reasonably foreseeable projects within the County and surrounding areas, could either delay attainment of established standards or require the adoption of additional controls on existing future air pollution sources to offset emissions increases.

Implementation of the Proposed Project would involve minimal emissions during construction and would not result in a substantial increase in long-term operational emissions because the Proposed Project would reduce congestion in the Claribel Road at Roselle Avenue intersection. Construction emissions would be short-term in duration, and would be implemented beginning in the spring of 2017 with anticipated completion after approximately five months. Therefore, the Proposed Project would result in a **less than significant impact**, cumulatively.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Development of the Proposed Project would involve installation of signalization and widening of the Claribel Road at Roselle Avenue intersection. Emissions of diesel particulate matter (DPM) resulting from construction-related equipment and vehicles would be temporary and intermittent. Improvements to the intersection would not result in an increase of number of vehicles traveling through the intersection and would therefore not increase pollutants from intersection operation. Sensitive receptors would not be exposed to long-term concentrations of DPM emissions associated with project construction and would not be exposed to additional pollutants from vehicle operation.

Project development would not introduce any new sensitive receptors to the area, and thus, would not expose new sources of sensitive receptors to any existing sources of substantial pollutant concentrations. However, the CARB promulgated the Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations (17 CCR 93105). This ATCM regulates asbestos associated with construction projects. The ATCM is a statewide regulation triggered prior to the ground-

disturbing activities in certain areas of California, and applies to any size construction project, although there are more stringent mitigation requirements for projects that exceed one acre.

The California Department of Conservation, Division of Mines and Geology developed a local guide for areas in California more likely to contain Naturally Occurring Asbestos (NOA). The northwestern portion of Stanislaus County contains ultramafic rocks that could contain NOA (Churchill and Hill 2000). The Project Site is not within the area of the County more likely to contain NOA, and the Proposed Project would therefore not expose sensitive receptors to NOA. Therefore, impacts related to sensitive receptors to substantial pollutant concentrations are considered **less than significant**.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable distress among members of the public and often result in generating citizen complaints to local governments and air districts. Project-related odor emissions would be limited to times when equipment would be utilized for construction and emission from equipment may be evident in the immediate surrounding area. Construction activities would be short-term and would not result in the creation of long-term objectionable odor because they would be quickly dispersed after equipment utilization. Therefore, due to the short-term nature of the proposed construction activities, combined with limited exposure to sensitive receptors, impacts associated with development of the Proposed Project are considered **less than significant** and no mitigation is required.

4.3.3 Mitigation Measures

Mitigation Measure AQ – 1: The Project contractor shall be implement all adequate fugitive dust control measures and ensure that the fugitive dust control measures are implemented in a timely manner during project construction on the Project Site. The contractor shall use measures to control fugitive dust that are outlined in the San Juaquin Valley Air Pollution Control District, *Guidance for Assessing and Mitigating Air Quality Impacts,* to remain in compliance with the District Regulation VIII. Fugitive dust control measures shall include:

- Apply water to all visible unpaved surfaces and areas;
- Limit or reduce vehicle speed on unpaved roads and traffic areas to 10 miles per hour;
- Earth or other material that has been deposited by trucking or earth moving equipment, erosion by water, or other means onto paved streets shall be promptly removed;
- Cover haul trucks with a tarp or other suitable cover, or wet the top of load enough to limit visible dust emissions;
- Asphalt, oil, water or suitable chemicals shall be applied on stockpiled materials and other surfaces that give rise to airborne dust;
- All earthmoving activates shall cease when sustained winds exceed 15 miles per hour;
- The contractor's foreman shall take responsible precautions to prevent the entry of unauthorized vehicles during non-work hours; and

- The contractor's foreman shall keep a daily log of activities to control fugitive dust.

Mitigation Measure AQ – 2: All construction equipment shall comply with the San Joaquin Valley Air Pollution Control District Mitigation Requirements for Construction Equipment Emissions (Section 6.1 of Rule 9510) by implementing measures to reduce pollutant emissions. These mitigation measures may include: using add-on controls to construction equipment, cleaner fuels, or newer lower emitting equipment. Stanislaus County shall ensure that emissions from construction equipment could achieve a 20% reduction for NO_x emissions and a 45% reduction for PM_{10} exhaust emissions.

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4.4 BIOLOGICAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

4.4.1 Environmental Setting

The *Claribel Road at Roselle Avenue Intersection Road Widening Project Natural Environmental Study* (NES) located in Stanislaus County, California was prepared by Foothill Associates in February 2016 to evaluate the existing biological environment of the Project Site (**Appendix D**). The analyses presented below are based on the Biological Study Area (BSA), which includes the Project Site and a 250-foot buffer around the Project Site encompassing approximately 70 acres (**Figure 4.4-1**).

A survey of the BSA was conducted on November 10, 2014 to characterize the general biological resources and to determine the potential for sensitive biological resources to occur within the BSA, which is characterized by agricultural land, irrigated pasture, and ruderal/developed areas. These are no natural communities within the BSA. The MID Lateral Number 6 (MID Lateral Canal) crosses beneath the Roselle Avenue in the northern portion of the BSA and the MID Main Canal passes beneath Claribel Road in the eastern portion of the BSA. Several artificial manmade roadside ditches and irrigation ditches as well as a stock pond also occur within the BSA.

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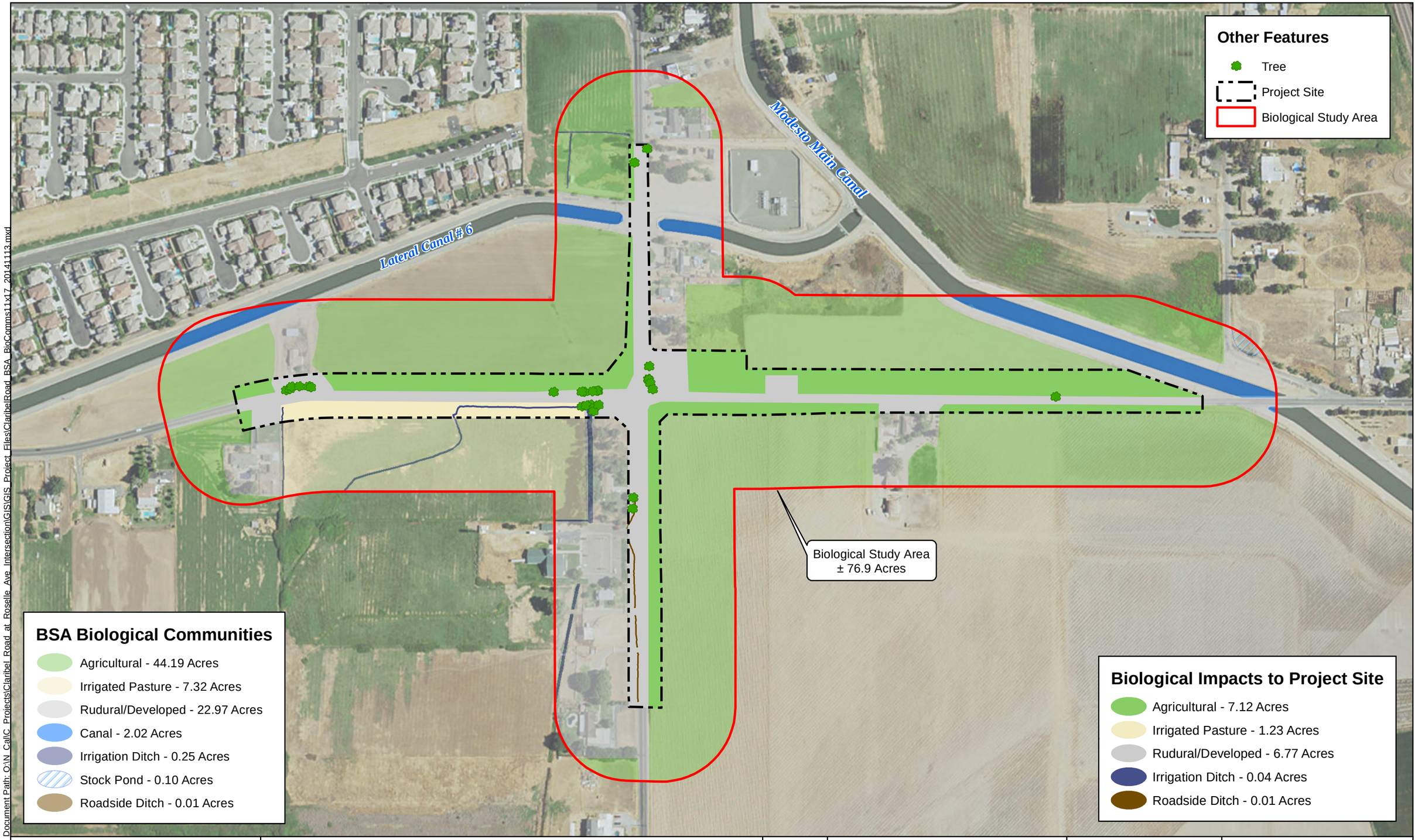

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BIOLOGICAL COMMUNITIES WITHIN THE BIOLOGICAL STUDY AREA

N

0 300 600
Feet
1 inch = 300 feet

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FIGURE 4.4-1

CLARIBEL ROAD

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Biological Conditions within the BSA

Agricultural land occurs within the majority of the BSA. The agricultural fields had been recently plowed at the time of the survey, so minimal vegetation was observed growing, including Italian thistle *(Carduus pycnocephalus* ssp. *pycnocephalus*), filaree (*Erodium botrys*), ripgut brome (*Bromus diandrus*), barley *(Hordeum murinum*), wild oat (*Avena fatua*), and soft brome (*Bromus hordeaceus*).

Irrigated pasture occurs south of Claribel Road on the west side of the BSA. Dominant species include deer grass (*Muhlenbergia rigens*), rye grass (*Festuca perennis*), Johnson grass (*Sorghum halepense*), lamp rush (*Juncus effusus*), ripgut brome, soft brome, and barley.

Ruderal/developed includes residential, agricultural, and commercial development including ornamental landscaping, mowed lawns, paved parking lots and roads, and graded levee roads. Ruderal vegetation includes wild oat, filaree, ripgut brome, soft brome, barley, and hairy geranium (*Geranium molle*). Ornamental landscape trees include eucalyptus (*Eucalyptus* sp.), coast redwood (*Sequoia sempervirens*), Italian cypress (*Cupressus sempervirens*), edible fig (*Ficus carica*), locust (*Robinia* sp.), and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*).

The MID Lateral Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal that flows east to west beneath Roselle Avenue within the northern portion of the BSA. The MID Main Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal that crosses beneath Clarbiel Road in the eastern portion of the BSA. The MID Lateral Canal and Main Canals lack vegetation and did not contain water at the time of the November 10, 2014 survey. The MID Lateral and MID Main Canals are manmade features constructed to transport irrigation water for agricultural purposes. The canals are cement-lined irrigation canals that were constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and are therefore not considered jurisdictional under Section 404 of the Clean Water Act (CWA). Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the USACOE. Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features are, therefore, not considered jurisdictional waters of the U.S.

Five approximately 1.0-foot wide roadside ditches occur along the west side of Roselle Avenue. These are manmade features that collect stormwater runoff from Roselle Road. There are no culverts beneath the driveways. Any water that enters the roadside ditches ponds within the ditches until it evaporates or percolates into the ground. Dominant vegetation includes Johnson's grass, filaree, and lamp rush. These roadside ditches are not considered jurisdictional because they are excavated wholly in, drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

Irrigation ditches occur within the northwest and southwest portions of the BSA. These are unlined, channelized, manmade features that were constructed to transport irrigation water. All of the irrigation ditches are approximately 1.0-foot wide except for an approximately 10-foot wide irrigation ditch located in the central portion of the BSA. The culvert on the north side of Claribel Road is likely buried. The irrigation ditch initiates south of Claribel Road, continues south, is culverted beneath a property, continues south, and exits the BSA. Ornamental landscape trees occur along the banks of the irrigation ditch to the north of the property, but the irrigation ditch lacks overstory vegetation to the south of the

property. Ornamental landscape trees include liquid amber (*Liquidambar styraciflua*), white mulberry (*Morus alba*), Eucalyptus, and Fremont cottonwood. Dominant herbaceous species within the irrigation ditches include ryegrass, wild oat, soft brome, barley, and deer grass. As with the MID Lateral and Main Canals, discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the U.S.

Irrigated pasture occurs south of Claribel Road on the west side of the BSA. Dominant species include deer grass (*Muhlenbergia rigens*), rye grass, Johnson grass, lamp rush, ripgut brome, soft brome, and barley.

A stock pond occurs within the northeastern portion of the BSA. Dominant vegetation includes: willow (*Salix* sp.), curly dock (*Rumex crispus*), and Himalayan blackberry (*Rumex armeniacus*). This feature may be considered a federally jurisdictional wetland.

Regional Species and Habitats of Concern

A review of regionally occurring special-status species was compiled based on the U.S. Fish and Wildlife Service (USFWS) 2016 list of federally-listed species with the potential to occur within the BSA (USFWS 2016), California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW 2016) queries of special-status species documented on the *Riverbank* quadrangle and eight surrounding quadrangles (*Avena, Escalon, Oakdale, Salida, Waterford, Brush Lake, Ceres,* and *Denair*), and California Native Plant Society (CNPS) Ranking List 2016 of special-status plants on the *Riverbank* quadrangle and eight surrounding quadrangles (CNPS 2016). The majority of special-status species identified with the database searches do not have the potential to occur within the BSA due to lack to suitable habitat. Special-status species that were observed, or determined to potentially occur in the BSA include: western pond turtle, burrowing owl, Swainson's hawk, Townsend's big-eared bat, and migratory birds and other birds of prey, and are discussed below under **Section 4.2.2**.

No critical habitat is designated within the BSA.

Regulatory Setting

The following subsections describe federal, State, and local environmental laws and policies that are relevant to this Natural Environment Study (NES) and the studies required for this project.

Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3) (19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the CDFW, when preparing CEQA documents. The purpose is to ensure that the State

lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

California Native Plant Society

The California Native Plant Society maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016). The CNPS list categorize plants as follows:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

Federal Clean Water Act Section 404

The U.S. Army Corps of Engineers (USACOE) regulates discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act. "Discharges of fill material" is defined as the addition of fill material into waters of the United States, including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the United States include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the USACOE as "the line on the shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

Roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are not considered waters of the U.S. because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

Section 401 Water Quality Certification

A Section 401 Water Quality Certification Permit was established to comply with CWA Sections 301, 302, 303, 306, and 307 and is regulated by the Regional Water Quality Control Board (RWQCB). Anyone that proposes to conduct a project that may result in a discharge to U.S. surface waters and/or "waters of the State" including wetlands (all types) year round and seasonal streams, lakes and all other surface waters would require a federal permit. At a minimum, any beneficial uses lost must be replaced by a mitigation project of at least equal function, value, and area. Waste Discharge Requirements Permits are required pursuant to California Water Code Section 13260 for any persons discharging or proposing to discharge waste, including dredge/fill, that could affect the quality of the waters of the State.

California Department of Fish and Game Code Section 1600

The CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq.* of the California Department of Fish and Game Code. Under Section 1602, any public or private entity must notify CDFW if a proposed project will "*substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds… except when the department has been notified pursuant to Section 1601.*" Additionally, CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

Porter-Cologne Water Quality Control Act

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

California Department of Fish and Game Codes

Fully protected fish species are protected under Section 5515; fully protected amphibian and reptile species are protected under Section 5050; fully protected bird species are protected under Section 3511; and fully protected mammal species are protected under Section 4700. The California Fish and Game Code defines take as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*" Except for take related to scientific research, all take of fully protected species is prohibited.

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Sections 2062 and 2067 define endangered and threatened species.

4.4.2 Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The Proposed Project would involve road widening and signal installation at the Claribel Road at Roselle Avenue intersection. A table identifying regionally occurring special-status species was compiled based on USFWS, CDFW, and CNPS information. The CNDDB special-status species occurrences in the project vicinity are shown on **Figure 4.4-2** and enclosed, along with the species table, within the *Claribel Road at Roselle Avenue Intersection Road Widening Project Natural Environmental Study* (Foothill Associates 2016) (**Appendix D**).

Listed and Special-Status Plants

The BSA has been substantially altered for agricultural, residential, and commercial purposes and the majority of native vegetation has been removed. Existing vegetation is primarily characterized by non-native weedy and invasive species. Because there are no natural communities present, there is no suitable habitat present to support special-status plant species. Therefore, project development would have no impact on special-status pant species.

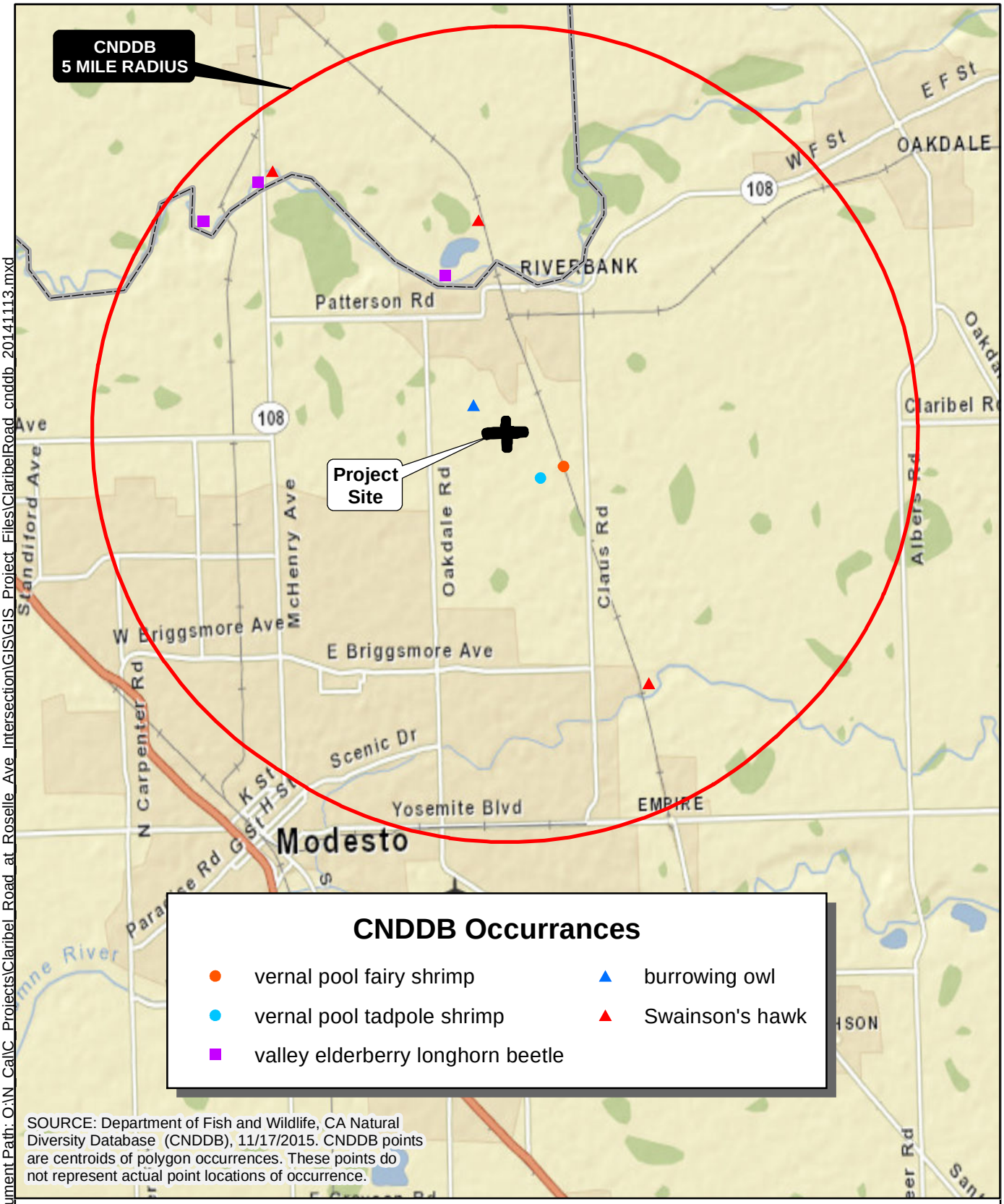
Listed and Special-Status Wildlife

Based on the disturbed nature of land within the Project Site, combined with the lack of seasonal wetlands and vernal pools, few special-status animal species have the potential to occur within the BSA.

The following special-status species have the potential to occur within the Project Site and surrounding land: western pond turtle *(Emys marmorata*), burrowing owl (*Athene cunicularia*), migratory birds and other bird of prey, Swainson's hawk *(Buteo swainsoni*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Western Pond Turtle

Western pond turtle is a California Species of Special Concern. Western pond turtles require slow moving perennial aquatic habitats with suitable basking sites. Western pond turtles occasionally inhabit irrigation ditches. Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Western pond turtles utilize grassland as upland habitat in the vicinity of the aquatic habitat. There are no CNDDB records documented within five miles of the BSA (**Figure 4.4-2**) (CDFW 2016).



SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 11/17/2015. CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION
CNDDB OCCURRENCES

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N

0 1 2
SCALE IN MILES

Drawn By: MUB
Date: 02/23/2016

FIGURE 4.4-2

No western pond turtles were observed within the BSA during the biological survey, but marginally suitable aquatic habitat occurs within the stock pond, the MID Lateral, and the irrigation ditches. The BSA only provides marginally suitable aquatic habitat because the irrigation canal is cement-lined and lacks dense emergent vegetation necessary to provide cover. In addition, the irrigation ditches lacked water at the time of the November 11, 2014 survey. The Project Site and surrounding areas (BSA) do not provide upland habitat for this species. However, western pond turtle could occur within the Project Site.

Project implementation could result in direct impacts to western pond turtle by destroying an individual, if present, during in-stream construction activities. Direct impacts could impact individuals of the species, if present, during construction activities in the vicinity of the MID Lateral Canal, the stock pond, and the irrigation ditches.

Burrowing Owl

Burrowing owl is a California Species of Special Concern. Burrowing owls typically occupy open, dry, sparsely vegetated habitats including grasslands and agricultural fields. Burrow availability is a critical feature of suitable habitat. Burrowing owls utilize existing burrows excavated by other animals, typically ground squirrels (*Otospermophilus beecheyi*). In areas where burrows are scarce, they can use pipes, culverts, debris piles, and other artificial structures (Center for Biological Diversity *et al.* 2003). The nearest CNDDB record for this species is approximately 0.3 miles northwest of the BSA (**Figure 4.4-2**) (CDFW 2016).

No burrowing owls or burrows were observed within the BSA during the biological survey, but marginally suitable habitat is present within the agricultural fields. Burrowing owl could occur within the BSA.

Project implementation could result in temporary indirect and direct impacts to burrowing owl. Temporary indirect impacts could result from the movement of equipment and workers. Direct impacts could result from destruction of occupied burrows and disturbance during construction, potentially resulting in abandonment of occupied burrows and nests and subsequent mortality of chicks and eggs.

Migratory Birds and Other Birds of Prey

All raptors, including common species not considered special-status, are protected under the California Fish and Game Code (Section 3503.5). Removal or destruction of an active raptor nest is considered a violation of the Fish and Game Code. In addition, migratory birds are protected under the Migratory Bird Treaty Act of 1918 (16 U.S.C 703-711). 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).

No active nests were observed during the biological survey. However, agricultural fields in the BSA provide foraging and nesting habitat to ground nesting birds and the landscape trees within the BSA provide suitable nesting habitat for raptors and migratory birds. Trees occur within the Project Site.

Project implementation could result in temporary direct and indirect impacts to migratory birds and other birds of prey. Trees potentially will be removed as a result of the Proposed Project, therefore, tree removal and/or vegetation clearing and grading associated with construction activities could disturb nesting migratory birds and other birds of prey, if they are present in the landscape trees or agricultural land within 250 feet of the Project Site. Nest abandonment could result in mortality of chicks or eggs.

Swainson's Hawk

Swainson's hawk is listed as a State-Threatened species. Swainson's hawk nests in large trees, primarily valley oak (*Quercus lobata*), cottonwood (*Populus* sp.), and willow (*Salix* sp.), and mostly nests in the Central Valley in areas located in remnant riparian habitat along drainages. Swainson's hawks also nest in small groves, roadside trees, and isolated trees.

The CDFW considers five or more vacant acres within ten miles of an active nest within the last five years to be significant foraging habitat for Swainson's hawk, the conversion of which to urban uses is considered a significant impact and requires mitigation, in accordance with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk in the Central Valley of California* (CDFG 1994; Staff Report). There are six CNDDB occurrences within 10 miles of the BSA. The nearest CNDDB record is approximately 2.5 miles north of the BSA (**Figure 4.4-2**). None of the occurrences were documented within the last five years. Therefore, no mitigation is required for the removal of foraging habitat.

No Swainson's hawks were observed during the biological survey of the BSA. The landscape trees within the BSA provide potential nest sites. Landscape trees occur within the Project Site. The agricultural fields within the BSA provide foraging habitat. Swainson's hawk could occur within the BSA.

Project implementation could result in temporary direct and indirect impacts to Swainson's hawk. Although it is unlikely that any trees anticipated for removal provide suitable nesting habitat, other landscape trees within ¼ mile of the Project Site provide nesting habitat. Therefore, construction associated with road work could disturb nesting Swainson's hawk, if they are present in the landscape trees within the BSA and other large trees within ¼ mile of the BSA. Nest abandonment could result in mortality of chicks or eggs.

Townsend's Big Eared Bat

Townsend's big-eared bat is a California Species of Special Concern. This species night roosts in caves, buildings, and hollow tree cavities. Maternity and hibernation colonies are conducted in caves and mine tunnels (Nature Serve 2015).

No bats or active roosts were observed during the biological survey of the BSA. If cavities are present within the ornamental landscape trees, these trees could provide roosting habitat for this species. Therefore, Townsend's big-eared bat could occur within the BSA.

Project implementation could result in temporary direct impacts to roosting bats. Trees would potentially be removed as a result of the project; therefore, tree removal could disturb roosting bats if they are present in the landscape trees anticipated to be removed.

Conclusion

Several special-status species have the potential to occur within the Project Site and may be impacted by project development. Although no natural communities are present and no suitable habitat is present to support special-status plant species, potential habitat for the following special-status animal species is present within the BSA: western pond turtle, burrowing owl, migratory birds and other bird of prey, Swainson's hawk, and Townsend's big-eared bat. Implementation of **Mitigation Measure BIO – 1 through Mitigation Measure BIO – 6** would ensure that the appropriate environmental awareness training and species avoidance measures are implemented consistent with current regulatory guidelines. With implementation of proposed mitigation measures, impacts are considered **less than significant with mitigation incorporated**.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. As discussed above the Project Site is not located in an area that contains riparian habitat or sensitive natural communities. The lands within the BSA includes agricultural lands (44.19 acres), irrigated pasture (7.32 acres), ruderal/developed lands (22.97 acres), canal (2.02 acres), irrigation ditch (0.25 acre), stock pond (0.10 acres), and roadside ditch (0.01 acre). The CDFW (2016) identifies the following sensitive natural community within five miles of the BSA: Northern Hardpan Vernal Pool; however, no designated sensitive natural community occurs within the BSA. Therefore, **no impact** to sensitive natural communities would result from implementation of the Proposed Project.

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

Less Than Significant Impact with Mitigation Incorporated. Aquatic features within the BSA consist of the MID Lateral Canal (2.02 acres), MID Main Canal (1.30 acres), roadside ditches (0.01 acre), and the irrigation ditch (0.25 acre).

Aquatic Features

MID Lateral Canal and MID Main Canal

The MID Lateral Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal that flows east to west beneath Roselle Avenue within the northern end of the Project Site. The MID Main Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal paralleling the northeastern portion of the Project Site. The MID Lateral and Main Canals lack vegetation and did not contain water at the time of the November 10, 2014 survey. The MID Lateral and Main Canals are manmade features constructed to transport irrigation water for agricultural purposes. The canals are cement-lined irrigation canals that were constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and are therefore not considered jurisdictional under Section 404 of the CWA. Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the USACOE. Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features are, therefore, not considered jurisdictional waters of the U.S.

Roadside Ditch

The roadside ditches are not considered jurisdictional because they are excavated wholly in, drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

Irrigation Ditch

As with the MID Lateral Canal and Main Canal, discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the U.S.

Stock Pond

A stock pond is located within the northeastern portion of the BSA. The stock pond may be considered a potentially jurisdictional wetland, but is clearly outside of the Project Site and would not therefore be impacted by project development.

Conclusion

The Proposed Project will not impact the MID Main Canal. However, development of the Proposed Project may affect the MID Lateral Canal, a manmade, cement-lined irrigation canal that was constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and is therefore not considered jurisdictional under Section 404 of the CWA. Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the USACOE. Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches.

Two unlined, channelized, manmade irrigation ditches would be impacted by the Proposed Project. As with the MID Lateral and Main Canals, discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the United States.

The roadside ditches would be impacted by the Proposed Project. However, roadside ditches delineated within the Project Site are not considered jurisdictional because they are excavated wholly in, drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

Impacts to non-federal aquatic features may still be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act. Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State. The appropriate permits would be required if the aquatic features are considered jurisdictional and therefore, impacts are considered less than significant with mitigation incorporated.

Implementation of **Mitigation Measure BIO – 7 and Mitigation Measure BIO – 8** would require the County to obtain authorization for the placement of fill within any federally-jurisdictional waters, including compliance with the Corps' no-net-loss of aquatic functions and values policy and would require that the County obtain 401 Water Quality Certification or a waiver from the Central Valley Regional Water Quality Control Board. In addition, for impacts to non-federal aquatic features, the County would be required to comply with the standards and requirements required under the Porter Cologne Water Quality Control Act. Compliance with current regulatory standards would ensure that project development would not have a substantial adverse effect on federally- or State-protected aquatic resources. Therefore, impacts are considered **less than significant with mitigation incorporated**.

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?

No Impact. The BSA provides low quality habitat for most wildlife species because of the overall lack of vegetation cover and the high levels of disturbed and developed areas. Species observed foraging within the BSA include western scrub jay (*Aphelocoma californica*), tree swallow (*Tachycineta bicolor*), and mourning dove (*Zenaida macroura*). Several ornamental landscape trees are present within the Project Site, including coast redwood, Fremont cottonwood, locust, eucalyptus, and edible fig that could provide nest sites for migratory birds and raptors.

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat, such as when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs. The BSA is not part of a major or local wildlife corridor/travel routes because it does not connect two significant habitats. Rather, the BSA consist of two existing paved roads surrounded by residential and commercial development and agricultural land that is subject to ongoing anthropogenic manipulation. In addition, the MID Lateral and Main Canals cross beneath Roselle Avenue and Claribel Road, acting as barriers to wildlife dispersal. Therefore, **no impact** to wildlife corridors would result from development of the Proposed Project.

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

Less Than Significant Impact. Stanislaus County has not adopted an ordinance for tree preservation. The *Stanislaus County General Plan, Open Space and Conservation Element*, Policy Four, Implementation Measure 1, requires all discretionary projects that would potentially impact oak woodlands and other native hardwood habitat to develop a management plan for protection and enhancement of oak woodlands (Stanislaus County 1994c). The *Open Space and Conservation Element* also recommends the protection of trees with historic significance. The *City of Riverbank General Plan, Conservation and Open Space Element* does not contain any specific tree preservation policies or other ordinances that are applicable to the Proposed Project (City of Riverbank 2009). The Project Site does not contain any oak woodlands or hardwood habitat, and is not anticipated to include removal of any tree species. The Proposed Project would not conflict with any local policies or ordinances protecting biological resources. **less than significant impact** would result from development of the Proposed Project.

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

No Impact. The Proposed Project is not within an area covered by a Habitat Conservation Plan, Natural Community Conservation Plan, or any other approved local, regional, or State habitat conservation plan. Therefore, **no impact** would result from development of the Proposed Project.

4.4.3 Mitigation Measures

Mitigation Measure BIO – 1: A Qualified Biologist shall conduct an environmental awareness training to all construction personnel. The training shall include identification of following special-status species: western pond turtle (*Emys marmorata*), burrowing owl (*Athene cunicularia*), and nesting raptors and migratory birds including Swainson's hawk (*Buteo swainsoni*), and Townsend's big-eared bats (*Corynorhinus townsendii*), required practices before the start of construction, general measures that are being implemented to conserve the species as they relate to the project, penalties for non-compliance, and boundaries of the Project Site and of the permitted disturbance zones. Supporting materials containing training information shall be prepared and distributed. Upon completion of training, all construction personnel shall sign a form stating that they have attended the training and understand all the measures. Proof of this instruction shall be kept on file with the project proponent. The project proponent shall provide the CDFW with a copy of the training materials and copies of the signed forms by project staff indicating that training has been completed within 30 days of the completion of the first training session. Copies of signed forms should be submitted monthly as additional training occurs for new employees. The crew foreman shall be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. If new construction personnel are added to the site, the crew foreman shall ensure that the personnel receive the mandatory training before starting work.

Mitigation Measure BIO – 2: A Qualified Biologist shall conduct a pre-construction western pond turtle survey within 14 days prior to commencement of construction activities. The Qualified Biologist shall document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no western pond turtles are identified during the pre-construction survey, then no further avoidance or minimization measures are recommended.

If a western pond turtle is observed within the Project Site during the pre-construction survey, a Qualified Biological Monitor shall be onsite during the initial instream work to ensure that no western pond turtles are present. The Qualified Biological Monitor shall document and submit the results of the monitoring event in a letter to the County and the CDFW within 30 days following the monitoring event.

Mitigation Measure BIO – 3: A Qualified Biologist shall conduct a pre-construction take avoidance survey no less than 14 days prior to initiating ground disturbance using the recommended methods described in the "*Detection Surveys Section*" in Appendix D of the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If no burrowing owls or signs of burrowing owls are detected in the vicinity of the BSA during the pre-construction survey, a letter report documenting survey methods and findings shall be submitted to the County and the CDFW, and no further avoidance or minimization measures are recommended.

If burrowing owls are detected, no-construction buffers and timing on page 9 of the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) shall be followed unless a Qualified Biologist verifies through non-invasive methods 1) that the birds have not begun egg laying and incubation, 2) that juveniles from the occupied burrows are capable of independent survival (i.e., foraging independently), or 3) that a reduced buffer is appropriate based on a site-specific evaluation. In addition, high visibility construction fencing should be established around the buffer zone, if feasible. Buffer diameters identified below and outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) are as follows:

Table 4.4-1 — Diameter Buffers for Burrowing Owl

Location	Time of Year	Level of Disturbance		
		Low	***Med***	***High***
Nesting Sites	April 1-Aug 15	356 feet (200 meters)	1,640 feet (500 meters)	1,640 feet (500 meters)
Nesting Sites	Aug 16-Oct 15	356 feet (200 meters)	356 feet (200 meters)	1,640 feet (500 meters)
Nesting Sites	Oct 16-Mar 31	164 feet (50 meters)	329 feet (100 meters)	1,640 feet (500 meters)

If the buffers specified above are infeasible, then a Qualified Biologist shall conduct a site evaluation to determine whether impacts can be avoided with implementation of additional measures. If the Qualified Biologist determines that measures can be established to avoid impacts to burrowing owls, the Qualified Biologist shall develop a mitigation plan through consultation with the CDFW including, but not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.

Mitigation Measure BIO – 4: If feasible, any trees anticipated for removal should be completed outside of the nesting season (September 1 through February 14). The nesting season is from February 15 through August 31.

A Qualified Biologist shall conduct a pre-construction nesting migratory bird and raptor survey within 14 days prior to commencement of construction activities and tree removal, if anticipated to commence during the nesting season (between February 15 and August 31). The Qualified Biologist shall document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are required.

If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist shall establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone,

if feasible. No trees anticipated for removal shall be removed until the Qualified Biologist determines that the nest is no longer occupied. The Qualified Biologist should recommend, if applicable, additional measures based on existing site conditions. Measures may include, but are not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.

Mitigation Measure BIO – 5: Prior to the commencement of construction activities during the nesting season for Swainson's hawk (between March 1 and September 15), a Qualified Biologist shall conduct a minimum of two (2) protocol level pre-construction surveys during the recommended survey periods for the nesting season that coincides with the commencement of construction activities, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The Qualified Biologist shall conduct surveys for nesting Swainson's hawk within ¼-mile of the Project Site where legally permitted. The Qualified Biologist will use binoculars to visually determine whether Swainson's hawk nests occur within the ¼-mile survey area if access is denied on adjacent properties. If no active Swainson's hawk nests are identified on or within ¼ mile of the Project Site within the recommended survey periods, a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the final survey, and no further avoidance and minimization measures for nesting habitat are required.

If active Swainson's hawk nests are found within ¼-mile of construction activities, the Qualified Biologist shall contact the County and the CDFW within one day following the pre-construction survey to report the findings. For the purposes of this avoidance and minimization requirement, construction activities are defined to include heavy equipment operation associated with construction (use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging within ¼-mile of a nest site between February 15 and August 31. Should an active nest be present within ¼-mile of construction areas, then the CDFW shall be consulted to establish an appropriate noise buffer, develop take avoidance measures, determine whether high visibility construction fencing should be erected around the buffer zone, and implement a monitoring and reporting program prior to any construction activities occurring within ¼ mile of the nest. Should the Qualified Biologist determine that the construction activities are disturbing the nest, the Qualified Biologist shall halt construction activities until the CDFW is consulted. The construction activities shall not commence until the CDFW determines that construction activities would not result in abandonment of the nest site. Should the Qualified Biologist determine that the nest has not been disturbed during construction activities within the buffer zone, then a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the

final monitoring event, and no further avoidance and minimization measures for nesting habitat are required.

Mitigation Measure BIO – 6: A Qualified Biologist shall conduct a pre-construction roosting bat survey within 14 days prior to commencement of tree removal. The Qualified Biologist should document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are recommended.

If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist shall establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone, if feasible. No trees anticipated for removal should be removed until the Qualified Biologist determines that the bat is no longer occupying the tree.

Mitigation Measure BIO – 7: If project development necessitates the placement of fill within federally-jurisdictional waters, prior to initiation of any activity that would place fill in federally-jurisdictional waters, the County shall obtain authorization for the placement of fill in waters of the U.S. and shall comply with the standards in effect at the time authorization is sought.

If project development would result in the fill of federally-jurisdictional waters, the County shall also obtain 401 Water Quality Certification or a waiver, as required by the current Central Valley Regional Water Quality Control Board standards.

Mitigation Measure BIO – 8: If project development would impact onsite aquatic resources and these resources are determined not to be federally-jurisdictional, impacts would then be subject waste discharge requirements under the Porter-Cologne Water Quality Control Act. Therefore, for impacts to non-federal aquatic resources, the County shall comply with the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ or the current applicable Water Quality Order, and will abide by all applicable filing, reporting, and waste discharge requirements.

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4.5 CULTURAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

4.5.1 Environmental Setting

A Historical Property Survey Report (HPSR) and Archaeological Survey Report (ASR) were prepared for the Proposed Project by Cogstone Resource Management Inc. on August 6, 2015 (**Appendix E**). The HPSR and ASR were prepared to identify and evaluate cultural resources within the Project Site and consisted of a Native American Heritage Commission sacred lands file search; a records search by the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, Archaeological Site Records, California Points of Historical Interest, California Historical Resources Information System (CHRIS), and Caltrans Historic Highway Bridge Inventory.

Research was conducted regarding historical properties and Native American cultural sites in the Area of Potential Effect (APE) associated with the Proposed Project. The APE was established as an area encompassing approximately 4.6 acres along Claribel Road and Roselle Avenue, and includes the proposed right-of-way acquisitions on the north and south sides of Claribel Road. The vertical limits of the APE were established at an anticipated maximum depth of five feet from the existing ground surface. A records search of the APE was conducted on October 7, 2014, at the Central California Information Center (CCIC) of the CHRIS. The record search covered a standards one-mile radius around the APE boundaries. The only resource, a historical architectural resource, within the APE is the Modesto Irrigation District Lateral No. 6 (P-50-000075) (Cogstone 2015).

Field Survey

An intensive pedestrian level survey of the APE was conducted in November 10, 2014 by Dylan Stapleton, who holds a M.A. in Anthropology. The cultural resources survey consisted of walking parallel transects, spaced at five meter intervals while inspecting the ground surface. The existing segments of Claribel Road and Roselle Avenue within the APE are completely hardscaped and visibility within the paved roadways was negligible. The remains of a small watercourse were identified along the eastern edge of APN 083-002-023, and is likely an abandoned irrigation ditch. Historic architectural resource P-50-000075 was identified within the northern end of the APE. There were no other cultural resources identified within the APE (Cogstone 2015).

Native American Consultation

The Native American Heritage Commission (NAHC) responded for a request for a sacred lands file search and list of Native American contacts on October 14, 2014. The NAHC responded that there are no known sacred lands within a one half mile of the APE. On November 14, 2014 Cogstone sent letters to

seven Native American contacts requesting any information related to cultural resources or heritage sites within or adjacent to the project vicinity. Contacts were called by phone on November 25, 2014. There was one response was from Ms. Kerri Vera, Environmental Department of the Tule River Indian Tribe, who responded by email on November 24, 2014. Ms. Vera stated that the Tule River Indian Tribe has no knowledge of cultural sites within or near the APE. Ms. Vera also requested that tribes closer to the APE be consulted. No other responses were received and no Native American cultural resources were identified in the APE (Cogstone 2015).

Ethnography

The Project Site was historically occupied by the Northern Valley Yokuts, the northernmost tribe of the Yokuts Indians. The Northern Valley Yokuts were sedentary hunter-gathers with settlements located on low mounds or near banks of large watercourses. They made twined and coiled basketry for storing, cooking, eating, winnowing, and transporting food materials. Stone tools were also used by the Northern Valley Yokuts. The Northern Valley Yokuts came into contact with Spanish explorers in the late 1700s and in an 1833 epidemic foreign disease decimated the populations in the San Joaquin Valley. During the Gold Rush in the mid-1800s the population of non-indigenous people increased and the Northern Valley Yokuts were driven from their hunting and gathering lands (Cogstone 2015).

Prehistory

The archaeology of California's Central Valley is divided into five temporal periods. The Paleoindian and Lower Archaic Periods (11,500 – 5,550 CAL B.C.) correspond with a change in climate and rising sea levels at the start of the Middle Holocene. These changes lead to the development of the extensive Sacramento-San Joaquin Delta Marshland. Paleoindian and Lower Archaic sites were buried during the last 5,000 to 6,000 years by deposits of Holocene alluvium up to 10 meters thick. The Middle Archaic Period/Windmiller Pattern (5,550 – 550 CAL B.C.) is distinguished by those who followed a seasonal foraging strategy and exploited a wide range of natural resources. Seeds and acorns were an important part of the diet in this period and a variety of fishing implements have been found at sites dating to this period. A variety of exotic cultural materials also indicate an established trade network. However, these archaeological sites are scarce on the valley floor. The Upper Archaic Period/Berkeley Pattern (550 CAL B.C. – CAL A.D. 1,100) was characterized by a more specialized, adaptive pattern during the Upper Archaic, with an increase in mortars and pestles, accompanied by a decrease in slab milling stones and handstones, indicating a greater reliance on acorns as a dietary staple during the Berkeley Patter. Berkeley Pattern populations continued to exploit natural resources. Subsitience strategies varied regionally, focusing on seasonally available resources suited for harvesting in bulk, such as salmon, shellfish, deer, rabbits, and acorns. Cultural debris and habitation features also indicate long-term residential occupation. The fifth temporal period is the Emergent Period/Augustine Pattern (CAL A.D. 1,110 – Historic Contact) which is marked by the introduction of the bow and arrow. Augustine Pattern tools also included fish hooks, harpoons, and gorge hooks for fishing. Hopper mortars and shaped mortars and pestles, as well as bone awls used for producing coiled baskets, are also common. The appearance of ceramics is likely an outgrowth on the prior bake clay industry, although baked clay balls remain common. This period is also characterized by the development of social stratification, including an elaborate ceremonial and social organization (Cogstone 2015).

History

California's post-contact history is divided into three periods. First is the Spanish Period (1769 – 1822) which began with Spanish settlement, and the establishment by Gaspar de Portolá at San Diego as the first of the establishment of the first 21 missions built along the California Coast. The first expedition to the Sacramento Valley was in 1808 led by Spanish Lieutenant Gabreil Moraga scouting for new mission locations. The second period is the Mexican Period (1822 – 1848) which began when Mexico gained

independence from Spain in 1822. A series of land grants transferred Mission properties to private ownership and were awarded to various California governors. Land grants were also awarded for the interior lands to increase the population in California away from the coastline. This period is also marked by the exploration of American fur trappers west of the Sierra Nevada Mountains. The first trapper to enter California was Jedediah Smith in 1826. Explorations by trappers resulted in the creation of maps of the Sacramento Valley in the 1830's. The third period is the American Period (1848 to present) that began with the signing of the Treaty of Guadalupe Hidalgo in February 1848 with Mexico relinquishing California to the United States. The Gold Rush also began in 1848 when gold was discovered at Sutter's Mill near Coloma and one year later nearly 90,000 people had arrived at the gold fields in California. California became the 31st state in 1850 and Sacramento became the capital in 1854. When the transcontinental railroad was completed in 1869 thousands of new settlers came to California. With the fertile soils in the Central Valley and the rise of irrigation canals California became a leader in agricultural production (Cogstone 2015).

Local History

The City of Riverbank originated as a ferry site along the Stanislaus River, and was established as a town with the arrival of the railroad. Historical land use around the Project Site was agricultural and Stanislaus County became an agricultural leader with the use of irrigation systems. The Write Act in 1887 allowed for the creation of the Modesto Irrigation District. MID Lateral No. 6, within the APE, was built in 1903. In 1945 the canal was concrete lined during a 20-year canal improvement program by MID. The 1953 Riverbank topographic map depicts three structures in the vicinity of the Project Area but the general area remains largely undeveloped (Cogstone 2015).

4.5.2 Discussion

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

No Impact. The only potential historical resource identified within the APE is the Modesto Irrigation District Lateral Canal No. 6 (P-50-000075). The potential historical resource P-50-000075 was recently evaluated in May 2014 for the National Register of Historic Places (NRHP) through a survey evaluation by LSA Associates for the *Historical Resources Evaluation Report for the North County New State Route 108, Stanislaus County, California* (LSA Associates 2014). The APE was included in this report and historical resource P-50-000075 was found ineligible by the NRHP (Cogstone 2015). There were no other historical resources located within the APE. Therefore, the Proposed Project would have **no impact** on historical resources.

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

Less Than Significant with Mitigation Incorporated. No historical archaeological resources were identified by the HPSR and ASR (Cogstone 2015).

Per Assembly Bill 52 (AB 52), as of July 1, 2015 Public Resources Code Sections 21080.3.1 and 21080.3 require public agencies to consult with the Native American Heritage Commission (NAHC) and Native American tribes for the purpose of mitigating impacts to tribal cultural resources. The process is described in part below:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact

of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by the means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section (Public Resources Code Section 21080.1 (d)).

As of writing this document no request has yet been received for notification for any designated contact of, or tribal representative of a traditionally and culturally affiliated California Native American Tribe. On November 14, 2014 Cogstone sent letters to seven Native American contacts requesting any information related to cultural resources or heritage sites within or adjacent to the project vicinity. Contacts were called by phone on November 25, 2014. One response was from Ms. Kerri Vera, Environmental Department of the Tule River Indian Tribe, who responded by email on November 24, 2014. Ms. Vera stated that the Tule River Indian Tribe has no knowledge of cultural sites within or near the APE. Ms. Vera also requested that tribes closer to the APE be consulted. No other responses were received and no Native American cultural resources were identified in the APE (Cogstone 2015).

However, grading and excavation activities associated with project construction would have the potential to unearth or otherwise expose previously unidentified archaeological resources. Compliance with **Mitigation Measure CR – 1** would require construction activities to cease in the event of inadvertent discovery of archaeological resources and would require that Stanislaus County Planning and Community Development Department be contacted in the event of inadvertent discovery of resources associated with construction of the Proposed Project. In the advertent discovery of archaeological resources, **Mitigation Measure CR – 1** would require coordination with local agency planning staff and the project archaeologist to assist with the proper treatment of discovered resources. Therefore, impacts to archaeological resources are considered **less than significant with mitigation incorporated**.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated. No known paleontological resources or geologic features have been identified within the Project Site. However, grading and excavation activities associated with construction of the Proposed Project would have the potential to unearth or otherwise expose previously unidentified paleontological resources. Compliance with **Mitigation Measure CR – 2** would require construction activities to cease in the event of inadvertent discovery of paleontological resources and would require that Stanislaus County Planning and Community Development Department be contacted in the event of inadvertent discovery of resources associated with project construction. In the event of an inadvertent discovery of paleontological resources, **Mitigation Measure CR – 2** would require coordination with local agency planning staff and the project archaeologist to assist with the proper treatment of discovered resources. Therefore, impacts to paleontological resources are considered **less than significant with mitigation incorporated**.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation Incorporated. No known graves sites or burial grounds have been identified within the Project Site. However, grading and excavation activates associated with project construction would have the potential to unearth or otherwise expose previously unidentified human remains or burial grounds. Compliance with **Mitigation Measure CR – 3** would require coordination with the Stanislaus County Coroner in compliance with CEQA (Section 1064.5) and the California Health and Safety Code (Section 7050.5), as well as Native American Heritage Commission who will notify and appoint a Most Likely Descendent (MLD), thereby reducing potential impacts to **less than significant with mitigation incorporated**.

4.5.3 Mitigation Measures

Mitigation Measure CR – 1: Should buried archaeological deposits or artifacts be advertently exposed during the course of any construction activity, work shall cease in the immediate area and the Stanislaus County Planning and Community Development Department shall be immediately contacted. A qualified archaeologist will be retained to document the find, assess its significance, and recommend further treatment. Work on the Project Site shall not resume until the archaeologist has had a reasonable time to conduct an examination and implement mitigation measures deemed appropriate and necessary by the agency with local jurisdiction in consultation with the qualified archaeologist to reduce impacts to a less than significant level.

Mitigation Measure CR – 2: If evidence of a paleontological site is uncovered during grading or other construction activities, work shall be immediately halted within 100 feet of the find and the Stanislaus County Planning and Community Development Department shall be contacted. A qualified paleontologist shall be retained to conduct an on-site evaluation and provide recommendations for removal and/or preservation. Work on the Project Site shall not resume until the paleontologist has had a reasonable amount of time to conduct an examination and implement mitigation measures deemed appropriate and necessary by the agency with local jurisdiction in consultation with the qualified paleontologist to reduce impacts to a less than significant level.

Mitigation Measure CR – 3: In the event that any human remains or any associated funerary objects are encountered during construction, all work will immediately cease within the vicinity of the discovery and the Stanislaus County Planning and Community Development Department shall be immediately contacted for inadvertent discovery of resources associated with park construction. In accordance with CEQA (Section 1064.5) and the California Health and Safety Code (Section 7050.5), the Stanislaus County Coroner shall be contacted immediately. If the human remains are determined to be Native American, then Coroner shall notify the Native American Heritage Commission, who will notify and appoint a Most Likely Descendent (MLD). The MLD will work with a qualified archaeologist to decide the proper treatment of the human remains and any associated funerary objects. Construction activities in the immediate vicinity will not resume until a notice-to-proceed is issued by the Stanislaus County Planning and Community Development Department.

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4.6 GEOLOGY AND SOILS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

4.6.1 Environmental Setting

Site Geology

Stanislaus County is situated in parts of three geologic provinces. From west to east, are the Coast Ranges, Great Valley, and Sierra Nevada. The boundary between the Coast Ranges and the Great Valley is considered the change in topography from relatively flat plain to hills. The boundary between the Great Valley and Sierra Nevada provinces is considered a more transitional change from flat plains to hills (Higgins and Dupras 1993). The Project Site is within the San Joaquin Valley within the Great Valley Geomorphic Province. The Great Valley Province is a long narrow, northwest trending alluvial valley lined by the Coast Range to west and the Sierra Nevada to the east. The valley was formed as a trough created by the Pacific and North American Plates (Cogstone 2015). The sediments that fill the Great Central Valley eroded from the Sierra Nevada and deposited in the San Joaquin Valley over the last two million years. These sediments are composed of marine sediments overlain by continental sediments. The oldest sediments in the San Joaquin Valley are from volcanic rocks eroded from early volcanoes (City of Riverbank 2008).

The project vicinity is underlain by the Pleistocene age Riverbank Formation that has an estimated age between 2.59 million years ago to 0.0117 million years ago. It consists of non-marine sand, locally pebbly, minor silt and clay (Cogstone 2015).

Soils

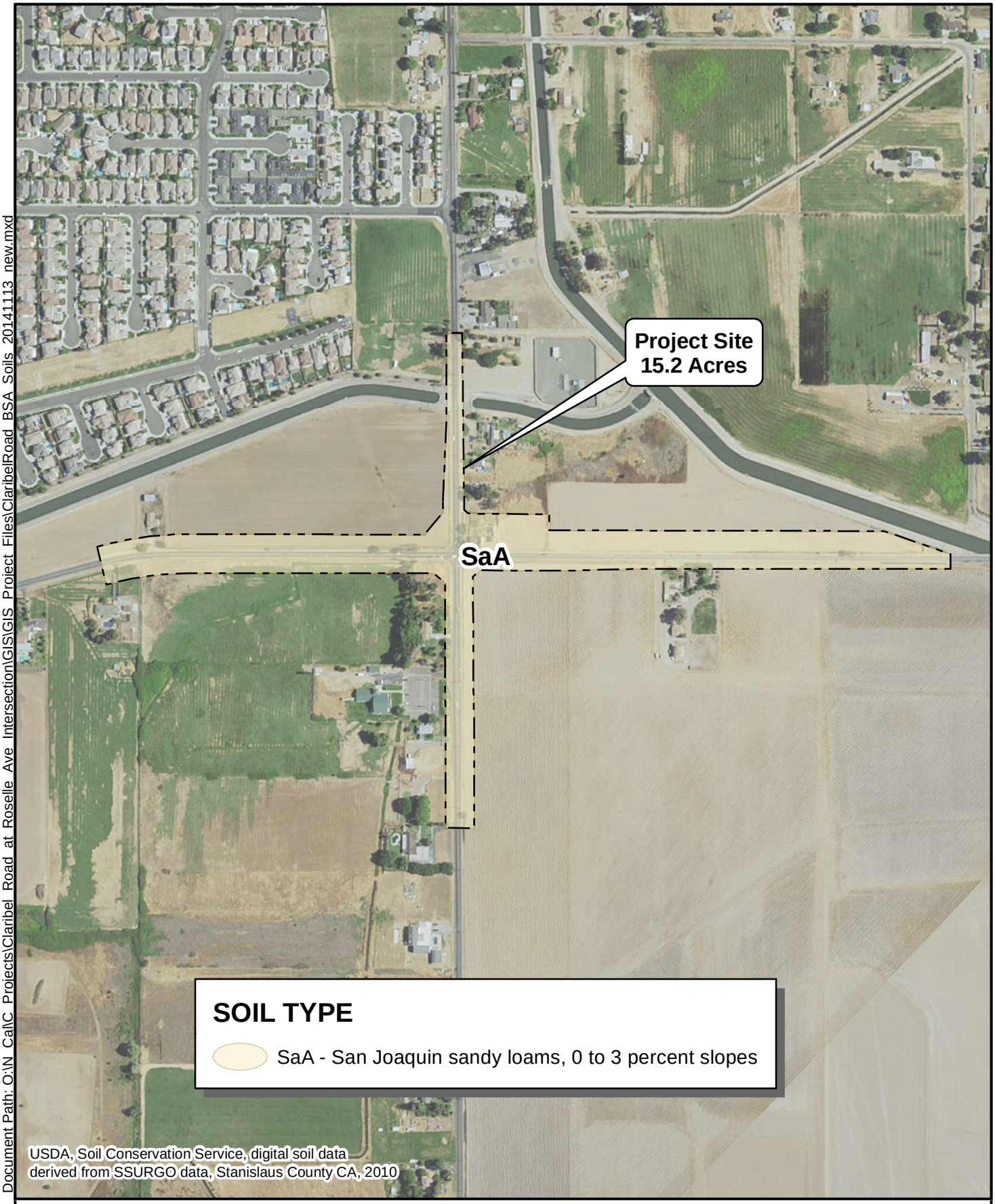
The entire Project Site is characterized by San Joaquin Sandy Loams, 0 to 3 Percent Slopes (USDA, NRCS 2015a) (**Figure 4.6-1**). This soil type is found in fan remnants with a parent material comprised of alluvium derived from granite. The soil type is moderately well drained with a depth to restrictive feature ranging from 20 to 40 inches to duripan. The San Joaquin Sandy Loam, 0 to 3 Percent Slopes is considered hydric in depressions (USDA, NRCS 2015b).

Seismicity

Faults are breaks in the rocks that make up the earth's crust, along which rocks on either side have moved past each other. The defining feature of a fault is the movement of the rock on either side. When there is sudden movement between the rocks an earthquake results. Fault systems are the boundaries of the large plates that make up the earth's crust (USGS 2006). Seismicity is the frequency or magnitude of earthquake activity in any given area. The Alquist-Priolo Earthquake Fault Zoning Act (1972) mitigates the hazards of surface faulting to structures for human occupancy, by preventing the construction of buildings used for human occupancy on the surface of active faults (City of Riverbank 2008).

Local Regulatory Status

The *Stanislaus County General Plan* contains information related to geology and soils in the *Safety Element* and *Housing Element*. Particularly Policy 3 of the *Safety Element* which states that development should not be allowed in areas that are particularly susceptible to seismic hazard (Stanislaus County 1994f). The *City of Riverbank General Plan*, *Safety Element* also contains information related to geology and soils, particularly Policy SAFE -1.1 which states that the "*City will ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan*" (City of Riverbank 2009).



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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION SOIL TYPES

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 300 600
Feet
1 inch = 500 feet

Drawn By: MUB
Date: 02/23/2016

FIGURE 4.6-1

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4.6.2 Discussion

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

a. 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.

Less Than Significant Impact. The Ortigalita Fault, located in southwestern Stanislaus County, is identified by the State of California Division of Mines and Geology as a Alquist-Priolo Special Study Zone (Zone) (Hart and Bryant 1997). The Zone includes seven miles within Stanislaus County and extends 500 feet in both directions from the center of the fault (Stanislaus County 1994a). The Ortigalita Fault is over 30 miles from the Project Site, and there are no other faults within close proximity to the Project Site (Stanislaus County 1994a). Impacts related to rupture of an earthquake fault delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map are considered **less than significant**.

a. ii) Strong seismic ground shaking?

Less Than Significant Impact. According to mapping prepared by the California Division of Mines and Geology, the potential for seismic ground shaking hazards within the vicinity of the Project Site is low, and the Project Site is not located within the vicinity of an Alquist-Priolo Earthquake Fault Zone or any other earthquake faults (Stanislaus County 1994a). Therefore, the Proposed Project is not expected to experience strong ground shaking, and impacts are considered **less than significant**.

a. iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a loss of soil strength related to seismic ground shaking and is most commonly associated with soil deposits characterized by water-saturated, well sorted, fine grain sands and silts. The Project Site contains San Joaquin Sandy Loams, 0 to 3 Percent Slopes, (**Figure 4.6-1**) (USDA, NRCS 2015b). Groundwater elevations range from 58 to 67 feet below ground surface (CAInc 2015). The potential for seismic related ground failure due to liquefaction is low because the groundwater levels are low and the Project Site is not within the vicinity of a fault zone. Therefore, impacts are considered **less than significant**.

a. iv) Landslides?

No Impact. The general topography of the Project Site is relatively flat with an elevation ranging between 123 and 133 feet above MSL. The flat topography of the Project site is therefore not conducive to landslide hazards. Therefore, **no impact** would result from project development.

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

Less Than Significant with Mitigation Incorporated. As shown on **Figure 4.6-1**, the entire Project Site is characterized as San Joaquin Sandy Loams, 0 to 3 Percent Slopes (USDA, NRCS 2015a). This soil type is found in fan remnants with a parent material comprised of alluvium derived from granite. This soil type is moderately well drained with a depth to restrictive feature from 20 to 40 inches of duripan. This soil type is considered hydric in depressions (USDA, NRCS 2015b).

The proposed intersection improvements would construct a signalized intersection at Claribel Road and Roselle Avenue, including widening the existing two-lane roadway at the intersection to accommodate turn lanes to accommodate truck and light vehicle traffic.

State regulations pertaining to the management of erosion and sedimentation target the protection of surface water resources from the effects of land development (such as turbidity caused by sedimentation), measures include regulations and standards to reduce the potential for erosion and soil loss. Such regulations include, but are not limited to, the National Pollutant Discharge Elimination System (NPDES) program for management of construction and municipal storm water runoff, which is part of the Clean Water Act and the State Porter-Cologne Water Quality Control Act and is implemented at the State local level through issuance of permits and preparation of site-specific Storm Water Pollution Prevention Plans (SWPPP).

Site disturbance related to grading, paving, and excavation activities associated with implementation of the Proposed Project would have the potential to increase erosion within the Project Site. The Proposed Project is required to comply with the Stanislaus County Storm Water Management Program (SWMP) (Ordinance No. C.S. 1047) that was developed to meet the terms of the County's General Permit (NPDES No. CAS000004). Section Four of the SWMP develops Construction Site Storm Water Runoff Control Program to minimize pollution to storm water from construction activities with erosion and sediment controls. Implementation of these erosion and sediment control Best Management Practices (BMPs) would prevent soil loss and erosion within the Project Site.

Grading activities would also be subject to the requirements of the Central Valley Regional Water Quality Control Board for filing a Notice of Intent (NOI) to comply with the Construction General Permit for projects over an acre or for projects that are part of a larger common plan for development that is over one acre. NOI applicants are required to develop a SWPPP specifying individual BMPs as well as scheduling for regular monitoring and maintenance of said BMPs for effectiveness.

Construction-related soil disturbance within the Project Site would exceed one acre and would have the potential to result in impacts to water quality resulting from pollutant discharge, including soil sediments. Therefore, preparation of a SWPPP would be required to comply with the NPDES Construction General Permit administered by the State Water Resources Control Board (SWRCB). The SWPPP will identify structural and non-structural BMPs to control and prevent erosion and topsoil loss. Impacts are therefore considered **less than significant with mitigation incorporated**.

Compliance with **Mitigation Measure GEO – 1** would require that Stanislaus County comply with applicable NPDES requirements in effect at the time of construction and implement, monitor, and maintain appropriate effective Best Management Practices.

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

Less Than Significant Impact. Lateral spreading, a phenomenon associated with liquefaction, subsidence, or other geologic or soils conditions that could create unstable subsurface conditions that could affect project features, is not a significant hazard for the Project Site. Impacts related to unstable soils including lateral spreading or collapse resulting from seismic-induced ground shaking are considered less than significant due to the distance from an active fault, the low potential for ground shaking hazards, and the groundwater table ranging between 58 to 67 feet below ground surface (CAInc 2015). Subsidence is generally characterized by the gradual settling of earth's surface with little or no horizontal

motion, and typically occurs in formations overlaying an aquifer subject to a gradual and consistently decreasing withdraw of groundwater. Impacts are therefore considered **less than significant**.

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

No Impact. The Project Site is not located in an area of expansive soils and would not expose people to risk related to potential geologic impacts. Therefore, **no impact** would result from project development and no mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

No Impact. Project development would not involve septic tank installation or the use of alternative waste water disposal systems. Therefore, **no impact** related to the use of septic tanks or alternative waste water systems would occur as a result of project development.

4.6.3 Mitigation Measures

Mitigation Measure GEO – 1: Stanislaus County shall apply for and comply with all construction-related storm water permitting, monitoring, and reporting requirements required by the RWQCB under NPDES or other regulatory requirements, as applicable to project development at the time of construction of proposed improvements/facilities.

4.7 GREENHOUSE GAS EMISSIONS

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

4.7.1 Environmental Setting

Greenhouse gas (GHG) emissions negatively affect the environment through contributing, on a cumulative basis, to global climate change. Atmospheric concentrations of GHGs determines the intensity of climate change, with current levels already leading to increases in global temperature, seal level rise, sever weather, and other environmental impacts. From a CEQA perspective, GHG impacts to global climate change are inherently cumulative. Due to the inherently cumulative nature of impacts associated with global climate change, a project's GHG emission contribution is typically quantified and analyzed on an annual operational basis.

There are several State regulations for GHG emissions that have been implemented to reduce GHGs. California Assembly Bill 32 (AB 32), adopted in 2006, established the Global Warming Solutions Act of 2006. AB 32 requires the State to reduce GHGs to 1990 levels by the year 2020. Senate Bill 97, adopted in 2007, requires the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines to incorporate analysis and mitigation for GHG emissions for projects subject to CEQA. Finally, Executive Order S-3-05, established in 2006, develops statewide emission reduction targets through the year 2050. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_x), tetrafluoromethan, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (flurorform, HFC-134a (s,s,s, 2-tetrafluoroethane), and HFC-152a (diflurooethane) (KD Anderson 2016b).

In California transportation sources make up the largest source of GHG emissions, and the dominant GHG emitted is CO_2, mainly from fossil fuel combustion. There are four primary strategies for reducing GHG emissions for transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technology/efficiency (KD Anderson 2016b).

The Project Site is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In August 2008, the SJVAPCD Governing Board adopted the *Climate Change Action Plan* (CCAP) to develop guidelines to assist CEQA lead agencies in assessing and reducing the impacts of project specific GHG emissions. In 2009 the SJVAPCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (KD Anderson 2016b). The guidance relies on Best Performance Standards (BPS) to assess the significance of project specific greenhouse gas emissions on global climate change during the environmental review process.

Caltrans has created and is implementing the Climate Action Program that was published in December 2006. One of the main strategies of the Climate Action Program for reducing GHG emissions is to make

California's transportation system more efficient the Caltrans strategy is to relieve congestion by enhancing operations and improving travel times in high congestion travel corridors (KD Anderson 2016b).

4.7.2 Discussion

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

Less Than Significant with Mitigation Incorporated. GHG emissions associated with the Proposed Project would occur both during project construction and operation.

Construction-Related Emissions

Construction of the Proposed Project would emit GHG emissions from construction equipment and worker and builder supply vendor vehicles. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Exhaust emissions from on-site demolition and construction activities would vary daily as construction activity levels change. The Proposed Projects short-term construction related GHG emissions were estimated using the Road Construction Emissions Model. The Road Construction Model reports only CO_2 emissions, not other GHG pollutants, therefore short-term project related emissions would be somewhat higher than the amount of CO_2 projected by the model. However, the amount of CO_2 emissions provides a quantified estimate of the project potential impact on climate change (KD Anderson 2016b). The estimated increase in GHG emissions associated with construction of the Proposed Project is summarized below in **Table 4.7-1**.

Table 4.7-1 — Project Estimated Construction-Related GHG Emissions

Short-term Construction GHG Emissions	CO_2 Emissions
Tons	676.2
Metric Tons	613.3

Source: KD Anderson, 2016b (**Appendix F**)

As presented in **Table 4.7-1** total construction-related GHG emissions associated with development of the Proposed Project would be 613.3 metric tons of CO_2. Neither the SJVAPCD, Caltrans, or CARB have issued a clear threshold on construction-related GHG emissions for CEQA analysis, and the SJVAPCD has not related an adopted set of construction-related BMPs for GHG emissions (KD Anderson 2016b). Therefore, the project would instead adhere to a suite of best practices extracted from the existing literature. In 2009 the USEPA's Sector Strategies Program produced a report analyzing construction-related GHG emissions titled *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. The report identified fossil fuel combustion and fuel use as the two major sources of GHG emissions from the construction sector (KD Anderson 2016b). Since fossil fuel combustion and use are the main source of GHG emissions during project construction the Proposed Project would focus on reducing fossil fuel consumption and fuel used by construction equipment. Therefore, GHG impacts from construction are considered less than significant with mitigation incorporated.

Implementation of **Mitigation Measure GHG – 1** would reduce contribution of GHG emissions during the construction period of the Proposed Project by incorporating design and construction measures such as reducing on-site idling of construction equipment.

Operational Emissions

Operational emissions related to GHG are generated by mobile and stationary sources, including day-to-day activities such as vehicle trips to and from a given site, heavy equipment operation, natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, spray paint, etc.). Roadway improvements, unlike land use development projects, do not generate vehicle trips. As a result, the long-term operational effects of roadway improvement projects on GHG emissions result from changes in geographic distribution of vehicle miles traveled (change in traffic volumes) and changes in vehicle speed, which effects the rate at which vehicles generate GHG emissions (KD Anderson 2016a). As described in the February 2016 memorandum from Nate Tumminello, P.E. of the Stanislaus County Department of Public Works to the Stanislaus Council of Governments Interagency Consultation Partners, Subject: *Consultation on PM_{10} and $PM_{2.5}$ Hot-spot Conformity Assessment for the Signalized Claribel Road/Roselle Avenue Intersection Project* (Appendix C of **Appendix C**), the Proposed Project would not change traffic volumes because it would not result in a change in the geographic distribution of vehicle miles traveled. Therefore, any GHG operational emissions from the Proposed Project would be due to changes in vehicle speed.

The February 2016 memorandum from Nate Tumminello, P.E. also presents a comparison of intersection Level of Service (LOS) with- and without the Proposed Project. The memorandum states that the Proposed Project would not degrade LOS at the intersection and, in nearly all scenarios, would improve LOS at the intersection (Appendix C of **Appendix C**). In the immediate vicinity of the intersection, vehicle speed would be predominantly determined by vehicle queuing and level of congestion and, therefore, would be low especially under long-term future background conditions without the Proposed Project. Outside of the immediate vicinity of the intersection, speed would be higher. The project-related improvement in LOS indicates the project would result in an increase of speed of vehicles traveling through the intersection, which would result in a reduction in the amount of CO_2 emissions generated by vehicles traveling through the intersection (KD Anderson 2016a). The Proposed Project would result in a reduction in long-term operational CO_2 emissions, and impacts would therefore be considered less than significant.

Overall

Operational and construction GHG emissions associated with the Proposed Project would generate GHG emissions that would contribute to the overall GHG levels in the atmosphere. However, operational emissions resulting from development of the Proposed Project would remain less than significant due to the fact the project would not degrade the existing LOS of the intersection, and would increase vehicle speed through the intersection reducing the amount of CO_2 emissions generated by vehicles traveling through the intersection. Construction-related GHG emissions would be generated through the use of construction equipment and vehicles, therefore impacts from project-related construction activities are considered **less than significant with mitigation incorporated**. Implementation of **Mitigation Measure GHG – 1** would reduce potential impacts to less than significant levels.

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

No Impact. Implementation of the Proposed Project would not conflict with or obstruct implementation of any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Particularly Policy 19 of the *Stanislaus County General Plan, Conservation and Open Space Element* that states, "*the County will strive to accurately determine and fairly mitigate the local and regional air quality impacts of proposed projects*" and Policy 20, Implementation Measure 1 states, "*through strategies identified in the Circulation Element, ensure that circulation systems are designed and maintained to minimize traffic congestions and vehicle emissions*" (Stanislaus County 1994b and

1994c). The Proposed Project would also be consistent with the *City of Riverbank General Plan, Air Quality Element*, particularly Policy AIR-2.1 which states that the City and the SJVAPCD will require approved projects to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible (City of Riverbank 2009). Construction and operation of the Proposed Project would therefore remain consistent with applicable regulatory standards and requirements, including consistency with all applicable SJVAPCD rules and thresholds. Therefore, **no impact** is anticipated and no mitigation is required.

4.7.3 Mitigation Measures

Mitigation Measure GHG – 1: The following measures shall be incorporated into design and project construction to reduce GHG emissions:

- On-site idling of construction equipment shall be no more than five minute' maximum;
- Biodiesel shall be used as an alternative fuel diesel for at least 15 percent of the construction vehicles/equipment if there is a biodiesel station within five miles of the Project Site;
- At least 10 percent of the building material used for the Proposed Project shall be local to the extent feasible; and
- At least 50 percent of construction waste or demolition materials shall be recycled.

4.8 HAZARDS AND HAZARDOUS MATERIALS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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)	For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

4.8.1 Environmental Setting

A hazardous material is anything with properties that make it potentially dangerous or harmful for human health or the environment, this includes liquids, solids, and gases. Hazardous materials are divided into four categories: ignitability, corrosivity, reactivity, and toxicity (Cal-EPA 2014).

The California Environmental Protection Agency (Cal-EPA) and California State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) regulate hazardous materials in California. Cal-EPA and the Office of Emergency Services (OES) establish regulations governing the use of hazardous materials. Within Cal-EPA, the California Department of Toxic Substances (DTSC) has primary regulatory responsibility. Enforcement of regulations has been delegated to local jurisdictions, which enter into agreements with CDTSC. The SWRCB and RWQCB regulate surface water and groundwater quality according to the Porter-Cologne Water Quality Act, the Toxic Pits Cleanup Act, the Underground Tank Law and Clean Water Act.

In January 1996, the Cal-EPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Material Management Regulatory Program" (Unified Program). The six elements of the Unified Program are: (1) hazardous waste generators and hazardous waste onsite treatment; (2) underground storage tanks; (3) above-ground storage tanks; (4) hazardous material release response plans and inventories; (5) risk management prevention program; and (6) Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency – a Certified Unified Program Agency (CUPA) which is responsible for consolidating the administration of the six program elements within its jurisdiction. The Environmental Resources Department, Hazardous Materials Division is the Stanislaus County CUPA.

Ultramafic rocks are igneous rocks that contain 90 percent or more of the dark colored iron-magnesium-silicate minerals. Sometimes the metamorphic conditions are right for the formation of asbestos in bodies of ultramafic rocks or along their boundaries. The California Department of Conservation, Division of Mines and Geology developed a local guide for areas in California more likely to contain Naturally Occurring Asbestos (NOA). The northwestern portion of Stanislaus County contains ultramafic rocks that could contain NOA (Churchill and Hill 2000). However, the Project Site is not within the area of the County more likely to contain NOA, and NOA would therefore not be considered a potential hazard as a result of ground disturbance associated with project implementation.

Crawford & Associates, Inc. (CAInc) prepared the November 20, 2015 *Initial Site Assessment* [for the] *Claribel Road at Roselle Avenue Intersection Project, Stanislaus County, California* (**Appendix G**). The Initial Site Assessment (ISA) was prepared to identify recognized soil and/or groundwater contamination/hazardous material issues that may affect the Proposed Project. The ISA consisted of assessment of historical aerial photographs and review of the Environmental Data Resources, Inc. (EDR) of Milford, Connecticut within a one-mile radius of the center of the intersection within Project Site. The ISA documented that there has been some alteration to the Project Site within the last 50 years. Between 1957 and 1993 the project vicinity consisted mostly of rural residential properties and agricultural crop fields. Urban development north of the Project Site in the City of Riverbank has been established since 2005 with the development of Elmwood Estates to the north of the Project Site (CAInc 2015).

The records search resulted in several facilities or locations within or near the Project Site that contain potential environmental hazards:

- The McKenna Residence, located at 3213 Claribel Road (APN 084-001-025), at the eastern end of the Project Site is listed on the leaking underground storage tank (LUST) and History HIST CORTESE databases for the historical presence of a leaking underground storage tank. Soil was reportedly impacted by diesel that leaked from the tank, but the soil was remediated and the tank now has a status of "case closed" since October 30, 1998.

- The Jerry Cole property, located at 5130 Roselle Avenue (APN 075-025-005) is approximately 200 feet north of the Project Site and listed on the UST, CAL FID and SWEEPs databases because of the historical presence of a 550-gallon underground storage tank. This tank contained regular motor vehicle fuel and the CAL FIDS database lists the status of the tank as "closed."

- Elmwood Estates, located at 5536 Roselle Avenue, is approximately 800 feet northwest of the Project Site and listed on the ENVIROSTOR and SLIC databases because of assessment and remediation of soil impacted by petroleum hydrocarbons and lead. As of November 17, 1993 the status is listed as "Refer: Other Agency."

- The Riverbank Dump Site, is located at 5631 Terminal Avenue, approximately 4,000 feet northeast of the Project Site and is listed on the ENVIRONSTOR database because additional

work is necessary on the dump site. The location was formerly used as a disposal site for waste oils and sludge. As of June 2008 the dump site was listed as "Inactive-Action required" (CAInc 2015).

A search of the EDR resulted in two state oil/gas wells, five state groundwater wells, and two federal groundwater wells within one mile of the Project Site. The first oil/gas well is located about 0.4 mile to the northeast of the project intersection and the second oil gas well is located about 0.6 mile to the southeast of the intersection. The exact locations of the two State and five groundwater wells are unknown (CAInc 2015).

A reconnaissance survey of the project vicinity was completed on November 18, 2015 to view the properties within the project vicinity for hazardous materials storage, surface staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The only sources of recognized environmental condition (REC) within the project vicinity were the transformers, which are a potential REC within the Project Site (CAInc 2015).

As a result of a review of regulatory database lists, several potential hazardous material locations were identified in close proximity to the Project Site, including an underground storage tank, a leaking underground storage tank, and a parcel which appears to have been used as a motor vehicle junkyard. However, the conclusions documented within the ISA assumed the potential effects of encountering RECs during project development to be low.

4.8.2 Discussion

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

Less Than Significant with Mitigation Incorporated. The Proposed Project involves installation of signalization and road widening of the Claribel Road at Roselle Avenue intersection. Development of the Proposed Project would involve several hazardous materials during project construction and operation.

Construction

Project construction may involve demolition of existing structures on properties adjacent to the County right-of-way. These structures may contain asbestos and lead-based paint associated with demolition/modification. Implementation of **Mitigation Measure HAZ – 1** would ensure that the public is not exposed to asbestos and lead-based paint as a result of project construction by requiring the appropriate surveys and associated mitigation.

The Proposed Project would involve the removal of existing asphalt roadway and historical asphalt road sections. Asphalt is not currently regulated as a hazardous material, but potential contaminants in the asphalt binder require off-site disposal restrictions imposed by the State of California Integrated Waste Management Board. Implementation of **Mitigation Measure HAZ – 2** would ensure that all asphalt removed from the Proposed Project would be disposed of in accordance with current regulations at a permitted facility.

Yellow traffic stripes/thermoplastic typically contain heavy metals, including lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the California Code of Regulations (CCR) and may produce toxic fumes when heated. Implementation of **Mitigation Measure HAZ – 3** would ensure that the yellow traffic stripes/thermoplastics are disposed of in a Class I disposal facility.

The ISA did not include an assessment of past and present transformers, but as discussed previously, transformers and power lines were observed during the November 2015 reconnaissance survey within the County right-of-way. The areas surrounding the transformers did not contain any leaks or stains, but existing transformers may require relocation as a result of project construction. Identification and remediation of old transformers is the responsibility of the utility owner. If transformers are relocated as part of the Proposed Project implementation of **Mitigation Measure HAZ – 4** requires the inspections and disposal of the transformers and power lines to ensure that they would not remain a public hazard.

Several small portions of the Project Site have been historically used for agricultural production. Therefore, the possibility exists that residual environmentally persistent pesticides and/or herbicides are present in the soil. No evidence of historical pesticide/herbicide mixing, storage, and/or misuse within the Project Site was observed during the reconnaissance survey. The probability of residual environmentally persistent pesticides is low. However, pesticides are sometimes detected on soils in properties with a long agricultural history (CAInc 2015).

Project construction would involve the use of heavy equipment, which would contain fuels, oils, lubricants, solvents, and various other possible contaminants. Temporary storage tanks necessary to store fuel and/or other flammable or combustible liquids required on the Project Site during construction would be regulated through the applicable federal, State, and local regulations as overseen by agencies such as the State Department of Health Services and the Hazardous Materials Division of Stanislaus County. Therefore, impacts related to construction hazards are considered less than significant with mitigation incorporated.

The presence of aerially deposited lead (ADL) adjacent to heavily traveled roadways are not uncommon. Based on review of aerial photographs and topographical maps of the area, there were no State highways or indications of heavily traveled roadways within the project vicinity. Therefore, a study for ADL is not anticipated (CAInc 2015).

The handling, use, and storage of hazardous materials during project construction would be required to comply with all federal, State and local regulations relevant to the handling, use and storage of hazardous materials, as monitored and enforced by the Stanislaus County Hazardous Materials Division of the Environmental Resources Department. Compliance with existing, enforceable regulations, combined with the implementation of **Mitigation Measures HAZ – 1 through HAZ – 4** would result in impacts related to public hazards being considered **less than significant with mitigation incorporated**.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. During project construction there is the possibility of upset or accident conditions involving the release of hazardous materials into the environment involving contaminants from construction activity and construction machinery. However, if an accident should occur the Stanislaus County Environmental Resources Department, Hazardous Materials Division is available to respond to an emergency involving hazardous materials. The handling of hazardous materials during project construction would be required to be complaint with standards set forth by the Stanislaus County Environmental Resources Department, Hazardous Materials Division. Following project construction, the improved intersection would operate with the same function and improved conditions. Therefore, impacts are considered **less than significant** and no mitigation is required.

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

No Impact. The Project Site is located within the City of Riverbank Unified School District, which is comprised of two high schools, a middle school, and two elementary schools. The closest school to the Project Site is Crossroads Elementary School located at 5800 Saxon Way, which is approximately 1.1 miles northwest of the Project Site. Therefore, there are no schools or proposed schools within one-quarter of a mile of the Project Site, and **no impact** would result from development of the Proposed Project.

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?

Less Than Significant Impact. The Project Site is not on or near a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. APN 075-025-010 contains discarded vehicles and other miscellaneous equipment and debris that are visible on 1984 through 1993 photographs, approximately 450 feet north of the Claribel Road and Roselle Avenue intersection. These photographs suggest potential use as a motor vehicle junkyard. There is no documentation of regulatory action for the parcel, and aerial photography evidence suggests that the portion of the parcel included within the Project Site was not used for such activities. Therefore, impacts from historical debris are unlikely to affect the Proposed Project (CAInc 2015). However, any wastes (e.g. oil, gasoline, diesel, etc.) encountered during project construction would be removed and disposed of according to local, State, and federal agency requirements. Therefore, impacts related to hazardous material sites are considered **less than significant**.

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

No Impact. The Proposed Project is not located within an airport land use plan area for any of the airports within Stanislaus County, nor is the Proposed Project within two miles of a public airport. The Proposed Project would not result in a safety hazard for people residing or working within the project vicinity, therefore **no impact** would result from development of the Proposed Project.

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The closest airport to the Project Site is the private Peterson Airport located in Riverbank at 5800 Langworth Road, and is approximately 2.7 miles northeast of the Project Site. The Proposed Project would not result in a safety hazard for people residing or working within the project vicinity, therefore **no impact** would result from development of the Proposed Project.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Existing traffic through the Claribel Road at Roselle Avenue intersection would be accommodated during project construction pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either road. Traffic would be diverted onto the half-road section to allow construction of new facilities on the opposite side. Therefore, the proposed Traffic Control Plan would have potential to temporarily impact emergency response and

emergency evacuation plans, but would not inhibit any emergency vehicles. Therefore, impacts are considered **less than significant**.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. According to the California Fire Hazard Severity Zone Map for Stanislaus County, the Project Site is located outside of a State Responsibility Area. There is no fire hazard designation indicated on the Fire Hazard Severity Zone Map for the Proposed Project. Wildfire is discussed, however, in the 2010 update to the *Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan*. The wildfire season in the County occurs from May to October each year mainly in the extreme eastern and western portions of the County (Stanislaus County 2010). The Proposed Project is located in the middle northern section of the County and is therefore not at a high risk from wildland fire. Therefore, impacts from the Proposed Project are considered **less than significant**.

4.8.3 Mitigation Measures

Mitigation Measure HAZ – 1: Prior to the demolition or modification of any existing structures a Qualified Building Inspector shall survey any affected structures for asbestos and lead-based paint. Any mitigation measures deemed appropriate and necessary by the Building Inspector shall be implemented to reduce impacts to less than significant levels.

Mitigation Measure HAZ – 2: All asphalt requiring removal from the Project Site shall be disposed of in accordance with current regulatory standards.

Mitigation Measure HAZ – 3: Following construction any yellow traffic stripes/thermoplastics shall be disposed of at a permitted Class I disposal facility to ensure that toxic fumes do not remain a hazard to the public.

Mitigation Measure HAZ – 4: Prior to the relocation or removal of any transformers or power lines associated with the Proposed Project transformers and power lines shall be inspected for the presence of polychlorinatedbiphenyls (PCBs) and other hazardous materials by the utilities owner, and if present, shall be properly remediated and disposed of in accordance with waste regulations.

4.9 HYDROLOGY AND WATER QUALITY

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
e)	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?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☒	☐	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?	☐	☐	☒	☐
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

4.9.1 Environmental Setting

Agricultural and urban water for Stanislaus County originate from both groundwater and surface water. Stanislaus County has five irrigation districts and 14 water districts that manage the County's water (Stanislaus County 1987).

Groundwater is the major source of domestic and industrial water in Stanislaus County. Groundwater recharge occurs by water conducting through the gravel of major streams and rivers, seepage from reservoirs, irrigations, and rainfall on well drained alluvial soils in the valley. The average annual rainfall for the County is 12 inches a year, making it an unreliable form of recharge (Stanislaus County 1987). Groundwater to the east of the San Joaquin River, including the Project Site, has a water table that varies in depth from only a few feet to several hundred feet (Stanislaus County 1987).

The Project Site is under the jurisdiction of the Central Valley Regional Water Quality Control Board, which is under the direction of the California State Water Resources Control Board. The Clean Water Act and the California Porter-Cologne Water Quality Control Act provide regulatory responsibility to these two agencies for regulating and protecting water quality.

The Project Site is located approximately two miles to the north of the Stanislaus River, six miles to the South of the Tuolumne River, and 17 miles to the west of the San Joaquin River, and within the Stanislaus River Watershed, which is approximately 1,075 square miles of land ultimately draining to the Stanislaus River. The Project Site is within a groundwater recharge area as defined by the *Stanislaus County General Plan Support Documentation* (Stanislaus County 1987).

The MID Lateral Canal No. 6 and MID Main Canal are both adjacent to the Project Site. The canals are 40-foot wide concrete-lined manmade irrigation canals that flow beneath Roselle Avenue (Lateral Canal No. 6) within the northern portion of the Project Site and beneath Claribel Road (MID Main Canal) just outside of the eastern portion of the Project Site boundary. They are cement-lined irrigation canals that were constructed in uplands contrary to natural drainage patterns in order to transport irrigation water for agriculture. There are also several irrigation ditches within and adjacent to the Project Site. These features are unlined, channelized, manmade features that were constructed to transport irrigation water. All of the irrigation ditches are approximately 1.0-foot wide except for an approximately 10-foot wide irrigation ditch located west of the Proposed Project. There are no other surface waters or wetlands within the Project Site (Foothill Associates 2016).

4.9.2 Discussion

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact with Mitigation Incorporated. The Proposed Project would signalize a currently stop-sign controlled intersection at Claribel Road and Roselle Avenue, and would include widening the existing two-lane roadway at the intersection to accommodate turn lanes to accommodate truck and light vehicle traffic.

Construction Related Impacts

Any discharge of pollutants into waters of the U.S. is unlawful unless the discharge is in compliance with the National Pollutant Discharge Elimination System (NPDES). The Statewide General Construction Permit and the NDPES General Construction Activity Stormwater Permit (General Permit) are applicable to requiring the preparation and implementation of a Storm Water Pollution Prevention Plan that specifies erosion and sediment control construction and post-construction BMPs to reduce or eliminate construction-related and operational impacts on receiving water quality. The SWPPP identifies structural and non-structural BMPs to uphold water quality and waste discharge requirements.

Chapter 14.14.120 of the Stanislaus County Code establishes the Reduction of Pollutants in Storm Water Ordinance to minimize impacts to water quality. Any activity that may result in pollutants entering the storm water conveyance system must take measures to reduce the risk of non-storm water discharge and/or pollutant discharge. This includes construction activity (Chapter 14.14.120 (E)) which requires compliance with BMPs to reduce storm water pollution.

Chapter 155 of the City of Riverbank Municipal Code establishes the Grading Ordinance to protect the public health, safety, property, general welfare, and aesthetics by regulating and establishing performance standards for all grading/clearing (including initial clearing, brushing or grubbing, and subsequent excavating or filling) on private and public lands, including minimizing adverse storm water impacts.

Section 155.04(D) addresses "Erosion and drainage control systems," and requires effective measures to be implemented to prevent erosion or sediment loss.

Implementation, monitoring, and maintenance of BMPs required to comply with existing enforceable City and County Ordinances, combined with compliance with current State and federal regulations relevant to maintaining water quality objectives, as required by **Mitigation Measure GEO – 1**, as well as compliance with the Stanislaus County NPDES permit, would ensure that project development would not result in substantial erosion or siltation violating water quality standards and discharge requirements. Construction-related impacts related to project development are therefore considered less than significant with mitigation incorporated.

Operational Impacts

Ongoing use of the intersection would not have the potential to result in erosion and sediment loss. The improved intersection would include post-construction BMPs designed, monitored, and maintained according to current regulatory standards. Impacts associated with long-term operation of the intersection are therefore considered less than significant.

Proposed Project

The improved intersection would include post-construction BMPs designed, monitored, and maintained according to current regulatory standards. Therefore, operational impacts a are considered less than significant. However, ground disturbance associated with project construction would have the potential to result in the violation of water quality standards related to erosion and sediment loss.

Implementation, monitoring, and maintenance of BMPs required to comply with existing enforceable City and County Ordinances, combined with compliance with current State and federal regulations relevant to maintaining water quality objectives, as required by **Mitigation Measure GEO – 1**, as well as compliance with the Stanislaus County NPDES permit, would ensure that project development would not result in substantial erosion or siltation violating water quality standards and discharge requirements. Construction-related impacts related to project development are therefore considered **less than significant with mitigation incorporated**.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Project development would not result in an increased demand for or use of groundwater. Development of the Proposed Project would result in signalization within the Claribel Road at Roselle Avenue intersection and widened turn lanes. The widened turn lanes would not create a significant amount of new impervious surfaces that would impede surface water drainage into the soil, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level, and impacts are therefore considered **less than significant**.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. Development of the Proposed Project would involve installation of signalization utilities and road widening at the Claribel Road at Roselle Avenue intersection. Project development would, however, result in a minor increase in impervious surface area from existing

conditions as a result of road widening. Project development would include post-construction BMPs, including drainage facilities, to accommodate project-related increases in storm water flows designed according to current federal, State, and local regulatory standards. Therefore, the minor area of increased impervious surface resulting from proposed road widening would not result in substantial erosion or siltation. No alteration of the course of a river or stream would result from project development. Impacts are considered **less than significant**.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No Impact. Development of the Proposed Project would involve installation of signalization utilities and road widening at the Claribel Road at Roselle Avenue intersection. Project development would, however, result in a minor increase in impervious surface area from existing conditions as a result of road widening. Project development would include post-construction BMPs, including drainage facilities to accommodate project-related increases in storm water flows designed according to current federal, State, and local regulatory standards. Therefore, the minor area of increased impervious surface resulting from proposed road widening would not result in surface runoff in a manner that would result in flooding on- or off-site. No alteration of the course of a river or stream would result from project development. **No impact** would result from development of the Proposed Project.

e) 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?

Less Than Significant Impact. Construction and operations within the Project Site would not substantially contribute to runoff that would exceed existing stormwater drainage patterns. The widened intersection, to incorporate turn lanes, would not introduce a substantial area of impervious surfaces that would contribute to excessive amounts of runoff. In addition, project development would include the construction of a retention basin within the northeastern corner of the intersection and existing roadside ditches would be developed into water quality swales conveying water to the retention basin in order to accommodate project-related increases in storm water runoff. Therefore, development of the Proposed Project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and impacts are therefore considered **less than significant**.

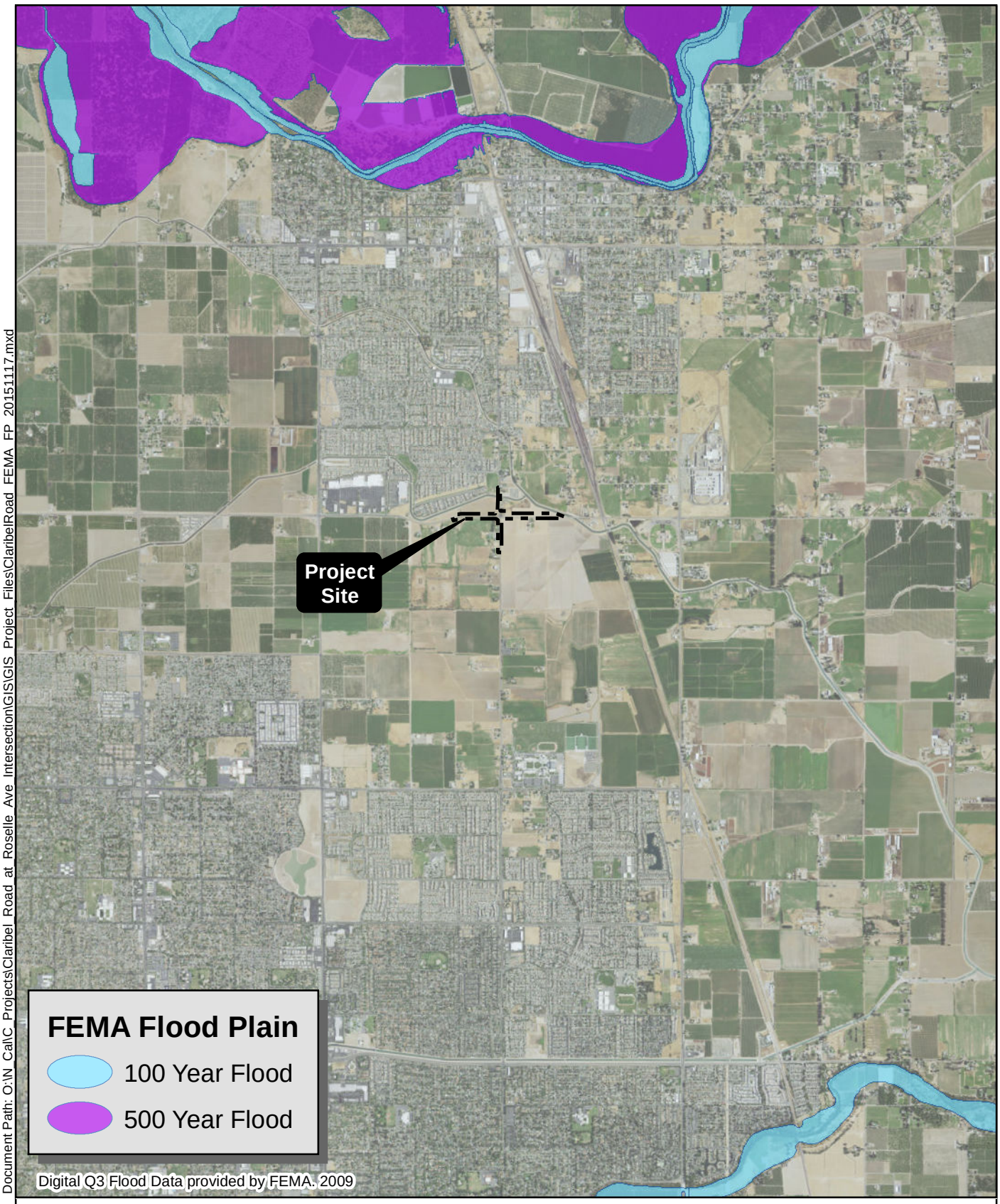
f) Otherwise substantially degrade water quality?

Less Than Significant with Mitigation Incorporated. Construction of the Proposed Project would be implemented through mechanical work. Construction activities have the potential to disturb the existing topography and would therefore have the potential to result in erosion and sediment loss. Implementation, monitoring, and maintenance of BMPs required to comply with existing enforceable City Riverbank and Stanislaus County Ordinances, combined with compliance with State and federal regulations relevant to maintaining water quality objectives, would ensure that project development would not result in substantial erosion or siltation violating water quality standards and discharge requirements.

Compliance with **Mitigation Measure GEO – 1** would require the County to obtain all applicable permits and implement effective erosion control BMPs during construction thereby reducing potential erosion-related impacts to less than significant levels. Therefore, impacts are considered **less than significant with mitigation incorporated**.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. Implementation of the Proposed Project would not involve the development of residential land uses or the construction of housing. As shown in **Figure 4.9-1** the Proposed Project is not within a FEMA-designated 100-year flood hazard area; therefore, **no impact** would result from development of the Proposed Project.



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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION FEMA FLOODPLAIN LOCATION

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 2000 4000
FEET
1 inch = 4,000 feet

Drawn By: MUB
Date: 02/23/2016

FIGURE 4.9-1

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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. As shown on **Figure 4.9-1**, the Project Site is not located within a FEMA-designated 100-year flood hazard area. Therefore, no structures would be placed within a FEMA-designated 100-year flood hazard area that would impede or redirect flood flows and therefore, **no impact** would result from project development.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?

No Impact. The Project Site is not located within a FEMA-designated 100-year flood hazard area or within the vicinity of a dam or levee (**Figure 4.9-1**). Therefore, project development would not expose people or structures to a significant risk of loss, injury, or death, involving flooding and **no impact** would result from development of the Proposed Project.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The Project Site is not located near an ocean coast or enclosed body of water that could produce a seiche or tsunami, nor is the site located near areas having steep slopes that would create mudflows. Therefore, **no impact** would result from project development and no mitigation is required.

4.9.3 Mitigation Measures

Compliance with **Mitigation Measure GEO – 1** would reduce potential impacts to a less than significant level.

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4.10 LAND USE AND PLANNING

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

4.10.1 Environmental Setting

The northern portion of the Project Site, above Claribel Road, is located within the City of Riverbank, and the southern portion of the Project Site, below Claribel Road is located within the unincorporated area of Stanislaus County, California. The Project Site is bordered to the northwest by residential development and the MID Lateral Canal, to the southeast and southwest by agricultural land uses, and to the northeast by agricultural, residential dwellings, commercial development, and the MID Lateral Canal.

The existing Claribel Road at Roselle Avenue intersection is a Stanislaus County-owned right-of-way; and therefore has no land use designation. As shown on **Figure 3.2-2**, the surrounding land use designations to the south, include areas designated as Urban Transition within APN's 083-002-024; 083-002-025; 083-002-047; and 083-002-023. Land use to the north is within the City of Riverbank, within APN's 075-014-027; 075-014-026; 075-025-009; 075-025-011; 075-025-008; 075-025-007; 075-025-010; 075-025-006; and 075-075-052. As show on **Figure 3.2-2**, the *City of Riverbank General Plan, Land Use Element* identifies the portion of the Project Site directly north of Claribel Road and within the City of Riverbank city limits as being located within the Mixed Use land use designation (City of Riverbank 2009). The northern-most tip of the Project Site and surrounding areas are designated as Industrial/Business Park. The Project Site is zoned Agricultural within the unincorporated Stanislaus County limits (**Figure 3.2-3**). The northern section of the Project Site is within the City of Riverbank and is zoned by the City as Neighborhood Commercial, Single Family Residential, and Public.

4.10.2 Discussion

a) Physically divide an established community?

No Impact. Project development would require several right-of-way acquisitions to facilitate intersection widening and accommodate turn lane development. Permanent right-of-way acquisition would be required from property owners to the northwest, northeast, and southwest quadrants of the intersection. Temporary Construction Easements and Permits to Enter and Construct may be needed from all quadrants on the project. The right-of-way acquisitions, TCE, and PTE would not, however, it would divide an established community. **No impact** would result from development of the Proposed Project.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Proposed Project would involve installing signalization and widening the Claribel Road at Roselle Avenue intersection. The Proposed Project would be developed in conformance with all applicable land use plans and ordinances, and would not conflict with any agency's plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The Proposed Project would also continue to be in compliance with policy and regulations with Caltrans. The Project Site is not located within a coastal zone management area (NOAA 2015). **No impact** would result from development of the Proposed Project.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Project Site does not contain any applicable Habitat Conservation Plans or Natural Community Plans. Therefore, **no impact** would result from development of the Proposed Project.

4.10.3 Mitigation Measures

No mitigation is warranted.

4.11 MINERAL RESOURCES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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?	☐	☐	☐	☒

4.11.1 Environmental Setting

In December 1993 the State of California completed its classification of mineral resources in Stanislaus County. According to the *Stanislaus County General Plan Conservation and Open Space Element*, Stanislaus County is not prolific in its extractive mineral resources (Stanislaus County 1994c). Minerals found within the County limits include: bemenite, braunite, chromite, cinnabar, garnet, gypsum, hausmannite, hydromagnesite, inesite, mangnesite, psilomelane, pyrodbrsite, and rhodochrosite. There are also small deposits of clay, gold, and lead (Stanislaus County 1994c).

As a result of the economic conditions within the County, commercial extraction of the aforementioned minerals is often difficult or impossible. There has been some commercial production of mangnesite in the western portion of the County, and attempts have been made to market the resource. Sand and gravel deposits constitute the only significant extractive resource within the County. The majority of these sand and gravel deposits are from stream deposition or dredge tailings. Old stream beds and areas adjacent to rivers and streams contain the best sand and gravel deposits (Stanislaus County 1994c). In 1993 there were a total of 19 actives mines within Stanislaus County, producing concrete-grade aggregate or road base (Higgins and Dupras 1993).

The California Surface Mining and Reclamation Act (SMRA) of 1975 requires classification of land into Mineral Resource Zones (MRZ) according to known or inferred mineral potential. The goal of the SMRA is to ensure that the mineral potential of the land is recognized by local government decision-makers and therefore the classification is completed without any regard to existing land use or ownership (Higgins and Dupras 1993). In response to the SMARA a Mineral Resources designation overlay was added to the General Plan to protect mineral deposits that were identified as being of regional or statewide significance (Stanislaus County 2004).

4.11.2 Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The Project Site is not within a Mineral Resource Zone (MRZ) for any of the minerals located within the County as designated by the *Stanislaus County General Plan*, *Conservation and Open Space Element*. According to the *Stanislaus County General Plan*, the most significant deposit from a commercial outlook are found in old stream beds and adjacent to the rivers and streams in the eastern portions of the County. Significant sand and gravel deposits on the west side of the County are found along Orestimba Creek east of Interstate 5, and fine-grained sand deposits adjacent to the San Joaquin

River. The Project Site is not located within any of these areas. Therefore, **no impact** to mineral resources of the regional or statewide importance would result from the Proposed Project and no mitigation is required.

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

No Impact. Goal Nine of the *Stanislaus County General Plan*, *Conservation and Open Space Element* is to manage extractive mineral resources to ensure an adequate supply without degrading the environment (Stanislaus County 1994c). Policy Twenty-Seven states that the County shall "*emphasize the conservation and development of lands having significant deposits of extractive mineral resources by not permitting uses that threaten the potential to extract the minerals*" (Stanislaus County 1994c). As discussed above in subsection a), the Project Site is not within a MRZ that has been designated by the *Stanislaus County General Plan, Conservation and Open Space Element*. Mineral extraction and resource protection is not mentioned in the *City of Riverbank General Plan* beyond their importance as a natural resource (City of Riverbank 2009). The Project Site would therefore not result in the loss of locally important mineral resource recovery sites. Therefore, there would be **no impact** to mineral resources as a result of the Proposed Project.

4.11.3 Mitigation Measures

No mitigation is warranted.

4.12 NOISE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.12.1 Environmental Setting

Noise is commonly defined as unwanted sound in the environment. This definition reflects a subjective reaction to the characteristics of the physical phenomenon of noise. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Although elevated noise levels can result in physiological damage and hearing loss, excessive noise in the environment more commonly impairs general human well-being and contributes to psychological stress and irritation. Such health effects can result when noise interferes with everyday human activities such as sleep, talking, recreation, relaxation, and tasks requiring concentration. When noise is either disturbing or annoying, whether by its pitch or loudness, it may be considered objectionable.

Existing Noise Setting

The Project Site is located in Stanislaus County and the City of Riverbank. Stanislaus County is characterized by agricultural and rural residential land uses. Due to the rural agricultural and residential setting of at the Project Site, existing noise sources primarily consist of roadway traffic, typical residential outdoor activities, and agricultural activities.

To quantify existing ambient noise levels at the residences nearest to the Project Site long-term (continuous) noise level measurements were conducted on November 5, 2015 to the east of the Claribel Road at Roselle Avenue intersection, within the Project Site, by Bollard Acoustical Consultants, Inc. (BAC) (BAC 2015). A Larson-Davis Laboratories (LDL) 820 precision integrating sound level meter was used to complete the noise level measurement survey. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Local Regulations

The *Stanislaus County General Plan, Noise Element*, establishes several noise policies related to transportation. Implementation Measure 1(a) of the *Noise Element* requires that transportation noise sources, such as traffic on public roadways, do not exceed 65 L_{dn} in areas with multi-family residence. The *Stanislaus County General Plan, Noise Element* predicts that in 2030 Claribel Road would have a noise level of 75 dBA L_{dn} or higher and Roselle Avenue would have a noise level of 65 to 69 dBA L_{dn} (Stanislaus County 1994e).

The Stanislaus County Code, Chapter 10.46 establishes the "Stanislaus County Noise Control Ordinance." Under this Ordinance, noise from construction equipment cannot exceed an average sound level of 75 dBA between 7:00 P.M. and 7:00 A.M. at or beyond the property line of any property that includes a dwelling unit.

The *City of Riverbank General Plan, Noise Element* provides a basis for local policies concerning environmental noise. The maximum level of noise exposure to residences from transportation specified in the *City of Riverbank General Plan, Noise Element* is 60 dB L_{dn} for exterior exposure and 45 dB L_{dn} for interior noise exposure (City of Riverbank 2009). The City of Riverbank Ordinance Code also establishes ordinances for noise exposure. In Chapter 93.04 exterior noise level standards from 7:00 A.M. to 10:00 P.M. have a maximum allowable noise of 70 dBA and the maximum allowable noise from 10:00 P.M. to 7:00 A.M. is 65 dBA. Construction noise is exempt from this Ordinance, Chapter 93.07, if no construction occurs between 6:30 P.M. and 6:00 A.M. on weekdays and from 5:00 P.M. to 8:00 A.M. on weekends and holidays.

The Stanislaus County Code, Chapter 10.46, Section 10.46.070 states that operation of any device that creates vibration above the vibration perception threshold of any individual at or beyond the property boundary of the source on private property, or at 150 feet from the source on a public space or public right-of-way is prohibited. Vibration is defined by the County as "*the minimum ground-borne or structure-borne vibration motion necessary to cause a reasonable person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects, or a measured motion velocity of 0.01 PPV in/sec over the range of 1 to 100 Hertz.*"

Sensitive Receptors

Sensitive receptors are considered hospitals, schools, and places of worship because they rely on the maintenance of adequate quiet to conduct indoor speech and communication and need to have minimum disturbances for people using such facilities. Residential areas require low noise levels, and the State of California has set interior residential standards for multi-family dwellings at 45 dBA L_{dn}. This interior residential standard is meant primarily for sleep and speech protection. The nearest sensitive receptor to the Project Site is a residence located approximately 20 feet west of Roselle Avenue and approximately 24 feet north of Claribel Road.

4.12.2 Discussion

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?

Less Than Significant Impact with Mitigation Incorporated. Development of the Proposed Project would require intermittent construction activities throughout the proposed five-month construction period. The Proposed Project is within the jurisdictional limits of both Stanislaus County and the City of Riverbank and will therefore adhere to the more stringent noise level standard. However, construction

noise when construction occurs between 7:30 A.M. and 6:00 P.M. on weekdays is exempted from adhering to noise standards under both City and County Ordinances.

The Caltrans has additional specifications with respect to construction projects on roadways. Caltrans standard specifications Section 7-1.01I specifies provisions for "Sound Control Requirements." The noise level from the contractor's operations between 9:00 P.M. and 7:00 A.M. shall not exceed 86 dBA at a distance of 50 feet. This noise level requirement applies to equipment on the job or related to the job (BAC 2015).

Construction-Related Noise

BAC assessed potential construction noise-related impacts for the Proposed Project in November 2015. As shown below on **Table 4.12-1** the measurement results from the noise level survey indicate that ambient conditions in the immediate project vicinity are typical for semi-rural areas affected by local roadway noise (BAC 2015).

Table 4.12-1 — Summary of Long-Term Ambient Noise Measurement Results at Claribel Road and Roselle Avenue Intersection on November 5, 2015

	Average Measured Daytime Noise Levels (dBA)			
***Location*[1]**	L_{eq}	L_{50}	L_{90}	L_{max}
A	63	60	56	81

[1]See **Appendix H** for exact noise measurement location. Source: BAC 2015.

The Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) was used to model the various project equipment noise levels at the nearest noise-sensitive locations. The RCNM results are shown below in **Table 4.12-2**.

Table 4.12-2 — Assumed Construction Equipment for Claribel Road and Roselle Avenue Intersection Improvement Project

Construction Equipment	L_{eq} at Nearest Property Line
Excavator	75.1
Compactor (ground)	74.7
Scraper	78.0
Grader	79.4
Paver	72.6
Concrete Mixer Truck	73.2
Total	**84.0**

Source: BAC 2015 (**Appendix H**).

As shown in **Table 4.12-2** conservative estimates of project construction noise would be below the 86 dBA Caltrans specification for nighttime operations and maximum construction noise levels would be consistent with measured ambient conditions. Project construction activities would be temporary and short-term by nature and would be primarily limited to daytime hours.

The Caltrans noise level of 86 dBA for construction is a higher allowable noise standard than Stanislaus County and City of Riverbank noise control ordinances. The Proposed Project, therefore must comply with the most stringent sections of local ordinance noise thresholds. Both jurisdictions exclude construction activities from compliance with the Noise Ordinance provided activities are conducted

during daytime hours on weekdays. Compliance with **Mitigation Measure Noise – 1** would reduce potential impacts related to construction-related noise to less than significant levels through requiring work to occur during the exempted time under City and County Ordinances, between 7:30 A.M. and 6:00 P.M. on weekdays. The Proposed Project would therefore not generate any noise levels in excess of the standards established by the local general plans and noise ordinances, and impacts associated with project development are considered less than significant with mitigation incorporated.

Operational Noise

Operational impacts associated with the Proposed Project include long-term use of the intersection through installing signalization and road widening. Long-term operational use of the Proposed Project would not increase or generate new vehicle trips through the Claribel Road at Roselle Avenue intersection. Therefore, there would not be a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, operational impacts from the Proposed Project are considered less than significant and no mitigation is required.

Overall Noise Levels

Operation of the Proposed Project would not generate new vehicle trips and is therefore not anticipated to increase noise levels in the project vicinity. Construction of the Proposed Project would have the potential result in noise levels above several allowable thresholds, however implementation of **Mitigation Measure Noise – 1** would ensure compliance with local noise ordinances to reduce construction noise to less than significant levels. Therefore, impacts are considered **less than significant with mitigation incorporated**.

b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

Less Than Significant. The nearest sensitive receptor is located approximately 20 feet west of Roselle Avenue and approximately 24 feet north of Claribel Road. Operation of construction equipment required to construct proposed improvements would result in short-term increases in ambient noise levels in the immediate project vicinity. Post-project operations would result in more efficient traffic flow and conditions typical of ambient conditions in semi-rural areas affected by roadway noise, and would therefore not result in excessive ground borne noise.

Similarly, construction-related vibration may occur during times when construction activity is occurring. However, construction activities would occur over a limited timeframe (approximately 5 months) and would be confined to weekdays during the hours between 7:30 A.M. and 6:00 P.M. and would therefore not be considered excessive. Impacts are therefore considered **less than significant**.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Long-term post-project operations would not generate new vehicle trips through the Claribel Road at Roselle Avenue intersection. Therefore, there would not be a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Impacts are therefore considered **less than significant**.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant with Mitigation Incorporated. The primary source of temporary increased noise levels due to development of the Proposed Project would be construction noise. Construction noise would be temporary and intermittent and is exempt from the noise ordinance standards provided the activities are conducted within specific hours. Compliance with **Mitigation Measure Noise – 1** would require construction activities to adhere to specified hours of operation and would therefore reduce impacts from construction noise to a less than significant level. Therefore, impacts are considered **less than significant with mitigation incorporated**.

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 expose people residing or working in the project area to excessive noise levels?

No Impact. The Proposed Project is not located within an airport land use plan area for any of the airports within Stanislaus County, nor is the Proposed Project within two miles of a public airport. The Proposed Project would not result in exposure of people to excessive noise levels for project area residences or people working within the project vicinity, therefore **no impact** would result from development of the Proposed Project.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The closest airport to the Project Site is the Peterson Airport, a private facility located in Riverbank at 5800 Langworth Road, and is approximately 2.7 miles northeast of the Project Site. The Proposed Project would not expose people residing or working in the project area to excessive noise levels, therefore **no impact** would result from development of the Proposed Project.

4.12.3 Mitigation Measures

Mitigation Measure Noise – 1: Construction activities associated with the Proposed Project shall be limited to 7:30 A.M. to 6:00 P.M. on weekdays.

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4.13 POPULATION AND HOUSING

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

4.13.1 Environmental Setting

The Project Site is located within a rural agricultural area in the San Joaquin Valley at the intersection of Claribel Road and Roselle Avenue. Areas adjacent to the Project Site consist of agriculture, irrigated pasture, residential, MID Lateral Canal Number 6, and MID Main Canal. There is a residential community to the northeast of the Project Site in the City of Riverbank. There are several residences along Roselle Avenue within the Project Site. The nearest residences to the Project Site are the residence on APN 084-001-025 approximately 22.5 feet south of Claribel Road and the residence on APN 075-025-008 approximately 24.5 feet east of Roselle Avenue.

Provisions for accommodating population growth and economic development within Stanislaus County and City of Riverbank are delegated through land use designations in the County's General Plan and City's General Plan as well as respective Zoning Ordinances.

The northern section of the Project Site is located within the City of Riverbank. Riverbank has a population of 22,678 and approximately 6,579 housing units (USCB 2010a). The southern section of the Project Site is located within unincorporated Stanislaus County. The County has a total population of 514,453 and approximately 165,180 housing units (USCB 2010b).

4.13.2 Discussion

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

No Impact. The Proposed Project would consist of installing signalization and widening the Claribel Road at Roselle Avenue intersection. Under existing conditions, intersection traffic is subject to significant delay, which results in intersection functions at Level of Service F with 93.5 seconds of delay. The intersection conducts traffic generated by ongoing urban development in the nearby cities and traffic operations are expected to worsen over time. Implementation of the Proposed Project would not induce population growth, either directly or indirectly. The intersection would be widened but the Proposed Project would allow for more efficient traffic flow through the proposed changes to the intersection. No new housing or commercial land uses are proposed for project development. Therefore, implementation of the Proposed Project would not induce population growth and **no impact** related to population growth would result from implementation of the Proposed Project.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. Implementation of the Proposed Project would not displace any of the existing residents that occur along Claribel Road and Roselle Avenue near the proposed intersection improvements. Permanent right-of-way acquisition from property owners in the northwest, northeast, and southwest quadrants of the intersection would be required for project implementation, but would not displace residents. There would be full take of APN 075-025-009, but the residence on the property is a rental and is not currently occupied. Therefore, the take would not displace any residents. The Proposed Project therefore would not displace any existing housing and would therefore not result in the necessity for the construction of replacement housing at an alternate location(s). Therefore, **no impact** related to displacement of housing would result from project development.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed above in subsection *b)*, implementation of the Proposed Project would not displace any residents for the permanent right-of-way acquisition of APN 075-025-009 or any of the other partial property acquisitions. Project development would not result in displacement of a substantial number of people necessitating the construction of replacement housing in any other location(s). **No impact** would result from project development.

4.13.3 Mitigation Measures

No mitigation warranted.

4.14 PUBLIC SERVICES

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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:					
a)	Fire protection?	☐	☐	☒	☐
b)	Police protection?	☐	☐	☒	☐
c)	Schools?	☐	☐	☐	☒
d)	Parks?	☐	☐	☐	☒
e)	Other public facilities?	☐	☐	☐	☒

4.14.1 Environmental Setting

The Project Site is located in Stanislaus County and the City of Riverbank and is currently served by the following public services:

Fire Protection

The Project Site is served by the Stanislaus Consolidated Fire Protection District (District), which provides emergency services throughout the eastern portion of the County with 80 full time staff. The District was formed in 1995 when four small districts combined, including unincorporated sections of East Modesto and the City of Riverbank. The closest fire station to the Project Site is Station 36 located in the City of Riverbank at 3318 Topeka Street. Station 36 operates and maintains two type-one engines, one type-three engine, and one type-one water tender and is staffed 7 days a week 24 hours a day (Stanislaus Consolidated Fire 2015). Policy 7 of the *Stanislaus County General Plan, Safety Element* states that adequate fire and sheriff protection shall be provided within the County. This policy is implemented with Implementation Measure 7.2 which states that all discretionary projects in the County shall be referred to the Fire Safety Department and appropriate fire district for comment and Implementation Measure 7.3 that states that the County Fire Safety Department will work with the California Department of Forestry and Fire Protection and with local fire districts to minimize the danger of wildfire (Stanislaus County 1994f).

Law Enforcement

The Project Site is served by the Stanislaus County Sheriff's Department, which provides law services for the County. The closest Department Station to the Project Site is located in the City of Riverbank at 6727 3rd Street. The City of Riverbank entered into an agreement for Stanislaus County to provide law enforcement services for the City and the City employs 27 positions at the station (Stanislaus County Sheriff's Department 2015). Policy 7 of the *Stanislaus County General Plan, Safety Element* states that adequate fire and sheriff protection shall be provided. This policy is implemented through Implementation Measure 7.5 which states that all discretionary projects shall be referred to the Sheriff's Department for comment (Stanislaus County 1994f.

Schools

The Project Site is located within the City of Riverbank Unified School District, which is comprised of two high schools, a middle school, and two elementary schools. The school closest to the Project Site is Crossroads Elementary School located at 5800 Saxon Way, approximately 1.1 mile northwest of the Project Site.

Parks

For a discussion of parks and recreation, see **Section 4.15, Recreation**.

Other Public Facilities

The closest public government facilities are located in the City of Riverbank, north of the Project Site. Library services in the project vicinity are provided by Stanislaus County. The City of Riverbank Branch Library located at 3442 Santa Fe Avenue, is approximately 2.1 miles northeast of the Project Site.

4.14.2 Discussion

a) Fire protection?

Less Than Significant Impact. Existing traffic through the Claribel Road at Roselle Avenue intersection would be accommodated during project construction pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either road. Traffic would be diverted onto the half-road section to allow construction of new facilities on the opposite side. Therefore, the proposed Traffic Control Plan would have potential to temporarily impact fire protection emergency service response times during construction. However, development of the Proposed Project would not result in increased population and residential structures, and a subsequent need for additional fire protection facilities. Therefore, there would be **less than significant impact** to fire protection.

b) Police protection?

Less Than Significant Impact. Existing traffic through the Claribel Road at Roselle Avenue intersection would be accommodated during project construction pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either road. Traffic would be diverted onto the half-road section to allow construction of new facilities on the opposite side. Therefore, the proposed Traffic Control Plan would have potential to temporarily impact police protection emergency service response times during construction. However, development of the Proposed Project would not result in increased population and residential structures, and a subsequent need for additional police protection facilities. Therefore, there would be **less than significant impact** to police protection.

c) Schools?

No Impact. The Proposed Project would not involve residential development and would not result in increased population. Therefore, **no impact** related to existing school facilities would result from project development.

d) Parks?

No Impact. There are no parks near the Project Site. The Proposed Project would not result in residential development or an increase in population. Therefore, **no impact** related to park facilities would result from implementation of the Proposed Project.

e) Other public facilities?

No Impact. The Proposed Project would not involve residential development and would not result in increased population. Therefore, **no impact** related to other public facilities such as nearby libraries would result from project development.

4.14.3 Mitigation Measures

No mitigation is warranted.

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4.15 RECREATION

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
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?	☐	☐	☐	☒

4.15.1 Environmental Setting

The Stanislaus County Department of Parks and Recreation manages recreation in the County. The County contains two off-highway vehicle parks (LaGrange Regional Park and Frank Raines Regional Park), two reservoirs with corresponding recreation opportunities (Woodward Reservoir and Modesto Reservoir), and 27 other County parks and facilities (Stanislaus County Parks and Recreation 2015). There are no County parks that are located within five miles of the Project Site.

The City of Riverbank Department of Parks and Recreation manages recreation within the City and their mission is to provide community through people, parks, and programs. The department currently operates 16 City parks and consists of four full-time employees (City of Riverbank Parks and Recreation 2015). The two closest City parks to the Project Site include Rotary Centennial Park, approximately 0.5 miles north of the Project Site, and Sorensen Park, approximately 0.5 miles northwest of the Project Site.

4.15.2 Discussion

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?

No Impact. The Proposed Project would include signal installation and widening of the intersection at Claribel Road and Roselle Avenue. The Proposed Project does not include the construction of recreational facilities and does not include a housing component that would result in population growth. There are no components of the project that would require the construction or expansion of new parks or recreational facilities, nor would development of the Proposed Project result in residential or commercial land uses generating population growth, facilitating increased use of existing facilities which would cause or accelerate substantial physical deterioration of existing facilities. Therefore, **no impact** related to recreational facilities would result from development of the Proposed Project.

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?

No Impact. See answer to subsection *a)*, above.

4.15.3 Mitigation Measures

No mitigation warranted.

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4.16 TRANSPORTATION / TRAFFIC

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
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?	☐	☐	☒	☐
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

4.16.1 Environmental Setting

The Project Site is located at Claribel Road and Roselle Avenue and would consist of installing signalization and completing road widening for the intersection. The existing intersection is located in a rural area of unincorporated Stanislaus County to the south of Claribel Road and in the City of Riverbank to the north of Claribel Road. Traffic control at the intersection is currently characterized as an all-way stop in combination with an overhead flashing red beacon at the center of the intersection. Under existing conditions, intersection traffic is subject to significant delay, which results in substantial air pollution emissions; using the Highway Capacity Manual (HCM) method, the intersection functions at a Level of Service (LOS) F with 93.5 seconds of delay. The intersection conducts traffic generated by ongoing urban development in the nearby cities and traffic operations are expected to worsen over time (Stanislaus County 2013).

Planned signalization of the intersection would result in reduction in traffic delay and associated air pollution. The County has calculated the benefit:cost ratio for the Proposed Project based on air quality improvements alone at over 12:1. Widening of the existing two-lane roadway would occur to accommodate turn lanes to accommodate truck and light vehicle traffic. This would include widening the east and west legs of Claribel Road and the north and south legs of Roselle Avenue. From the intersection, the lengths of improvement for each leg are as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south. The central portion of the intersection would also

be widened to accommodate the new turn lanes. No additional through lanes would be constructed and proposed improvements would not increase capacity of the approach road(s).

The Project Site has had twenty-five reported collisions over a five-year study period with a calculated collision rate of 0.84 collisions per million vehicle entering (c/mve). The statewide average collision rate for a four-lane intersection with stop controls is 0.60 c/mve (WWT 2014). The collision rate for the intersection is therefore above the statewide average, which is likely due to congestion and drivers approaching the stop controls from high-speeds.

4.16.2 Discussion

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. The Proposed Project and associated traffic signal would improve the LOS for the intersection by reducing congestions and accident severity (WWT 2014). The project is therefore consistent with the *Stanislaus County General Plan, Circulation Element*, particularly Policy 2 which states, "*the circulation system shall be designed and maintained to promote safety and minimize traffic congestion*" (Stanislaus County 1994b). Implementation Measure 1 for Policy 2 is to maintain a LOS C or better for all roadways and intersections, which would be accomplished by the Proposed Project. The *City of Riverbank General Plan, Circulation Element* Policy CIRC-1.12 creates a standard of LOS D for all roadway segments and peak-hour intersection LOS (City of Riverbank 2009). The Proposed Project would address congestion and safety at the Claribel Road and Roselle Avenue intersection and is therefore consistent with the County and City General Plans. Development of the Proposed Project would not conflict with any components of the circulation system such as streets, highways, freeways, or mass transit. Therefore, project development would not conflict with any existing adopted plans, ordinances, or policies establishing performance standards for transportation-related improvements and impacts are considered **less than significant**.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. Stanislaus Council of Government (StanCOG) is the Congestion Management Agency (CMA) for Stanislaus County as required by State law. The responsibility of the CMA is to prepare and maintain the Congestions Management Plan (CMP) for Stanislaus County. The CMP has several goals that relate to the Proposed Project, such as Goal 1 to improve mobility and Goal 2 to operate the regional transportation system safely and efficiently (StanCOG 2010). The 2014 *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) prepared by StanCOG also sets goals for decreasing vehicle hours of congestion and the percent of congested lane miles (StanCOG 2010). The intersection improvements at Claribel Road and Roselle Avenue would align with the goals established in the management plans above by increasing safety in the intersection and decreasing intersection congestion.

The October 2014 *Claribel Road/Roselle Avenue Intersection Control Evaluation* (Intersection Evaluation) prepared by Whitlock & Weinberger Transportation, Inc. (WWT) developed a comparative analysis on the Claribel Road at Roselle Avenue intersection for proposed intersection controls, including the proposed signalization. Stanislaus County strives to maintain a LOS C or better on roadways, as

described in the *Stanislaus County General Plan, Circulation Element* (Stanislaus County 1994b). However, there is no specified threshold for acceptable intersection LOS in the General Plan, therefore a LOS D or better was considered to be acceptable, which is common for most jurisdictions (WWT 2014). The City of Riverbank has a LOS standard of D for roadways and intersections within the City of Riverbank (City of Riverbank 2009).

Existing Traffic Scenario

The Intersection Evaluation evaluated existing (2014) traffic conditions within the intersection during A.M. and P.M. peak periods to capture the highest potential traffic impacts and highest volumes on the local transportation network. The morning peak hours occurs from 7:00 A.M. to 9:00 A.M. and the evening peak hours from 4:00 P.M. to 6:00 P.M. (WWT 2014). Vehicle traffic counts included peak period turning movement counts and 24-hour road segment counts, collected on May 1, 2014. The results of the traffic volume counts are shown below on **Table 4.16-1**.

Table 4.16-1 — Claribel Road and Roselle Avenue Traffic Volume Counts

Traffic Count	Total Number of Vehicles	Delay (seconds)
A.M. Peak Hours	1,450	34.2
P.M. Peak Hours	1,643	48.1
24-hour Volume at Claribel Road, West of Roselle Avenue	13,009	--
24-hour Volume at Roselle Avenue, North of Claribel Road	9,155	--

Source: WWT 2014 (**Appendix I**).

Under the existing conditions the existing all-way stop controls, the intersection operates at a LOS E during the P.M. peak hour, with a delay of 48.1 seconds (WWT 2014). LOS E is considered an unacceptable LOS for both Stanislaus County and the City of Riverbank.

Future Traffic Scenario

Traffic projections were acquired from the Fehr & Peers memorandum dated May 8, 2013, titled *Draft Year 2022 and 2042 Traffic Demand Forecasts for North County corridor PA/ED* (Memorandum). According to the Memorandum intersection peak hour volumes will increase from existing conditions, projected as high as 3,360 vehicles per hour during peak P.M. hours if the North County Corridor (NCC) is not built (WWT 2014). Base (2016) conditions were developed to represent the first year of a new intersection traffic control operation at the intersection (which was previously projected). Short-term (2026) represents a ten-year horizon after project implementation, and the future scenario projects traffic in 2042 (WWT 2014).

Under base (2016) conditions the intersection would operate at an acceptable LOS C with implementation of the Proposed Project and relative que lengths would be acceptable. The A.M. peak our delay would be 25.1 seconds and the P.M. peak hour delay would be 26.6 seconds (WWT 2014). During the short-term (2026) the intersection would operate at a LOS C with implementation of the Proposed Project and NCC buildout. Without NCC buildout the intersection would operate at an acceptable LOS D or better with implementation of the Proposed Project (WWT 2014). Under the future (2042) traffic scenario the intersection would operate acceptably at LOS D or above during both peak hours, with NCC buildout. However, without NCC buildout the intersection would operate deficiently at LOS E or F during both peak hours (WWT 2014). Future traffic scenarios are also shown below on **Table 4.16-2**. The traffic signal would significantly increase the capacity of the intersection due to its ability to be more demand-responsive and allow multiple vehicles to be served without stopping (WWT 2014).

Table 4.16-2 — Future Traffic Conditions at Claribel Road and Roselle Avenue with Traffic Signal Installation

Future Condition	Level of Service (A.M./P.M.)	A.M. Peak Hour Delay (seconds)	P.M. Peak Hour Delay (seconds)
Base (2016)	C/C	25.1	26.6
Short Term (2026) with NCC Buildout	C/C	25.0	26.6
Short Term (2026) without NCC Buildout	C/D	33.5	44.6
Future (2042) with NCC Buildout	C/D	29.4	44.5
Future (2042) without NCC Buildout	E/F	63.8	134.8

Source: WWP 2014 (**Appendix I**).

Overall

Traffic resulting from the Proposed Project would improve the LOS standards and remain consistent with Stanislaus County and City of Riverbank LOS standards for the Claribel Road at Roselle Avenue intersection under all conditions, except the Future (2042) without NCC buildout scenario. The Proposed Project would therefore not conflict with existing congestion management programs, except in the year 2042 if there is no NCC buildout. The Future (2042) scenario may have new congestion management programs and standards to meet future traffic needs, and the Proposed Project will improve the existing LOS to meet County and City standards under all other scenarios, therefore impacts are considered **less than significant**.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. Development of the Proposed Project would not result in a change in air traffic patterns. Therefore, **no impact** would result from development of the Proposed Project and no mitigation is required.

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

Less Than Significant Impact. The collision rate at the Claribel Road at Roselle Avenue intersection is substantially higher than the statewide average for all-way stop-controlled intersections (see **Section 4.16.1, Environmental Setting** above). Development of the Proposed Project would reduce accident severity within the intersection by replacing the all-way stop with a traffic signal and constructed protected left-turn phasing, with left turns on all approaches (WWT 2014). Therefore, traffic hazards would be reduced and impacts considered **less than significant**.

e) Result in inadequate emergency access?

Less Than Significant Impact. During project construction existing traffic through the Claribel Road at Roselle Avenue intersection would be accommodated pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either road and traffic would be diverted on the half-road section to allow construction of new facilities on the opposite side. This would allow emergency access through and to the Project Site and would be short-term in duration. Development of the Proposed Project would not change the emergency access to the Project Site or through the Project Site. Therefore, impacts are considered **less than significant**.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The Project Site is located within a rural agricultural area and there are no existing bicycle or pedestrian facilities. The Proposed Project would decrease the delay times at the intersection and allow for faster public transportation through the intersection. The Proposed Project would not conflict with adopted policies, plans, or programs supporting alternative modes of transportation, therefore **no impact** would result from the Proposed Project.

4.16.3 Mitigation Measures

No mitigation is warranted.

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4.17 UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	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?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

4.17.1 Environmental Setting

The Proposed Project is located in a rural area of unincorporated Stanislaus County to the south of Claribel Road and in the City of Riverbank to the north of Claribel Road. The following environmental setting narrative describes utility services located in both jurisdictions.

Potable and Non-Potable Water Service

Several residents in the project vicinity receive portable water from privately owned wells. Non-portable irrigation water is provided from Modesto Irrigation District Lateral Canal No. 6, which crosses under Roselle Avenue in the north of the Project Site, and MID Main Canal, which crosses under Claribel Road just east of the Project Site. MID is located in California's Central Valley and provides irrigation water to 58,000 acres and has 208 miles of canal (MID 2015).

Wastewater Service

Stanislaus County is served by the County Department of Environmental Health. The department regulates septic systems and the wastewater treatment plants within the unincorporated areas of the County. There are nine unincorporated areas of Stanislaus County and they are each served by several Community Service Districts (CSDs) and Sanitary Districts.

The City of Riverbank is served by the City's Wastewater Treatment Division. The City operates a wastewater treatment plant to dispose of the wastewater collected from within the City. The treatment

plant is located north of Riverbank across the Stanislaus River at 23865 South Santa Fe Road. The plant consists of eight percolation-evaporation basins and two aeration treatment ponds, treating on average 1.6 million gallons of wastewater a day (City of Riverbank Utilities 2015).

The Project Site is located in a rural portion of Stanislaus County, and wastewater generated by residents within the project vicinity is treated by underground septic tanks and leach field systems. The residential community to the northwest of the Project Site is served by the City of Riverbank Wastewater Treatment Division.

Solid Waste Disposal Service

Solid waste generated by the Proposed Project during construction activities would be collected and transported to an active and permitted landfill. The solid waste generated within Stanislaus County is taken to the Fink Road Landfill located at 4000 Fink Road in Crows Landing, approximately 30 miles to the southwest of the Project Site. Solid waste may also be taken to the Gilton Resource Recovery/Transfer Facility which is a large volume transfer facility that accepts construction/demolition materials and is located at 800 McClure Road, approximately 7.1 miles from the Project Site. Solid waste would then be transferred to the Fink Road Landfill. The Fink Road Landfill was permitted in August 2007 as a solid waste facility that accepts several types of waste including: agricultural, asbestos, ash, construction/ demolition, contaminated soil, dead animals, industrial, inert, mixed municipal, sludge, tires, and wood waste. The landfill is permitted to intake a max of 2,400 tons of solid waste per day. The maximum capacity of the landfill is 14,640,000 cubic yards and it covers 202.5 acres, with a remaining capacity of 8,240,435 cubic yards as of January 5, 2012 (Cal Recycle 2015).

Electrical and Natural Gas Service

The Project Site is served by Pacific Gas and Electric (PG&E) and MID expansion, which provides electrical and natural gas to the project vicinity. As part of the Proposed Project, utility lines would be relocated within the County right-of-way.

4.17.2 Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. Development of the Proposed Project would result in implementation of signalization and road widening at the Claribel Road at Roselle Avenue intersection. The Proposed Project would not include the construction of any wastewater-generating uses. **No impact** would result from the development of the Proposed Project.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Development of the Proposed Project would not increase the population within the project vicinity. Development of the Proposed Project would not result in the need for new or expanded wastewater facilities and would not have an adverse effect on wastewater treatment requirements. **No impact** would result from development of the Proposed Project.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. The Proposed Project would integrate construction stormwater management principles and current regulatory standards into proposed design and construction as part of

the Stanislaus County Ordinance for Reduction of Pollutants in Stormwater (Section 14.14.120 (B)) and City of Riverbank Ordinance for Reduction of Pollutants in Stormwater (Section 53.12 (D)). Project development would include storm water drainage facilities including a retention basin and water quality swales to accommodate project-related increases in storm water flows (**Figure 3.5-2**). Impacts from development of the Proposed Project are considered **less than significant** and no mitigation is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Development of the Proposed Project would not result in the need for new or expanded water supplies. **No impact** would result from development of the Proposed Project.

e) 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?

No Impact. Development of the Proposed Project would not increase population in the project vicinity. Development of the Proposed Project would not result in the need for new or expanded wastewater facilities and would not have an adverse effect on wastewater treatment requirements. **No impact** would result from development of the Proposed Project and no mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. The Fink Road Landfill is the permitted landfill facility in Stanislaus County handling recycling and waste disposal for the County (see **Section 4.17.1**, **Environmental Setting**). Project construction would generate construction debris and excavated soil. However, project-related impacts would not substantially affect landfill capacity because anticipated project-related waste volumes would not be substantial and would occur only during the project construction period. Therefore, impacts associated with development of the Proposed Project are considered **less than significant**.

g) Comply with federal, State, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The Department of Environmental Resources is the Local Enforcing Agency for Stanislaus County and unincorporated areas, enforcing State and local solid waste laws. The Development Services Department, Municipal Services Division enforces State and local solid waste laws for the City of Riverbank. Minimal solid waste would be generated from the project during the construction period and would be disposed of at an appropriately permitted and established solid waste facility. All construction debris and excavated soil would be disposed of according to relevant federal, State, and local statues and regulations related to solid waste and impacts are therefore considered **less than significant**.

4.17.3 Mitigation Measures

No mitigation is warranted.

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4.18 MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	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?	☐	☒	☐	☐

4.18.1 Discussion

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

Less Than Significant with Mitigation Incorporated. Implementation of the Proposed Project would have the potential to degrade the quality of the existing environment. Potential impacts have been identified related to **Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise**. Mitigation measures have been identified related to individual resource-specific impacts. Proposed mitigation measures would reduce the level of all project-related impacts to less than significant levels. Therefore, impacts are considered **less than significant with mitigation incorporated**.

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.)

Less Than Significant Impact. Implementation of the Proposed Project would result in signalization and road widening at the Claribel Road at Roselle Avenue intersection. Where applicable, this Initial Study identifies Mitigation Measures by individual resource area as relevant to potential environmental impacts resulting from development of the Proposed Project. Mitigation Measures are proposed to reduce

all project-related environmental impacts to less than significant levels, therefore, impacts are considered **less than significant**.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated. Implementation of **Mitigation Measures AQ – 1** and **Mitigation Measure AQ – 2** would reduce potential impacts related to Air Quality to less than significant levels. Implementation of **Mitigation Measure BIO – 1** through **Mitigation Measure BIO – 8** would reduce potential impacts related to Biological Resources to less than significant levels. Implementation of **Mitigation Measure CR – 1** through **Mitigation Measure CR – 3** would reduce impacts related to Cultural Resources to less than significant levels. Implementation of **Mitigation Measure GEO – 1** would reduce potential impacts related to Geology and Soils to less than significant levels. Implementation of **Mitigation Measure GHG – 1** would reduce potential impacts related to Greenhouse Gas Emissions to less than significant levels. Implementation of **Mitigation Measure HAZ – 1** through **Mitigation Measure HAZ – 4** would reduce potential impacts related to Hazards and Hazardous Materials to less than significant levels. Implementation of **Mitigation Measure GEO – 1** would reduce potential impacts related to Hydrology and Water Quality to less than significant levels. Implementation of **Mitigation Measure Noise – 1** would reduce potential impacts related to Noise to less than significant levels. Therefore, potential impacts resulting in substantial adverse environmental effects to human beings from implementation of the Proposed Project are considered **less than significant with mitigation incorporated**.

5.0 CEQA DETERMINATION

Pursuant to Section 15063, CEQA Guidelines, the Stanislaus County Department of Public Works has utilized an Environmental Checklist to evaluate the potential environmental effects of the Proposed Project. The checklist provides a determination of these potential impacts and includes the substantiation developed in support of the conclusions checked on this form.

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on the attached sheets have been added to the project (see previous pages). 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 significant effect 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 upon the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." 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, there will NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project. Nothing further is required.

Signature

6/21/16

Date

Printed Name:
Nate Tumminello
Associate Civil Engineer, Stanislaus County

For:
Stanislaus County, Department of Public Works

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6.0 REPORT PREPARATION

6.1 LEAD AGENCY

6.1.1 Stanislaus County, Department of Public Works

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Appendix A — Mitigation Monitoring and Reporting Program

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MITIGATION AND MONITORING PROGRAM

The Mitigation and Monitoring Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Claribel Road at Roselle Avenue Intersection Road Widening Project (Proposed Project). The MMRP lists mitigation measures recommended in the IS/MND for the Proposed Project and identifies mitigation monitoring requirements. This MMRP has been prepared to comply with the requirements of State law (Public Resources Code Section 21081.6). State law requires the adoption of an MMRP when mitigation measures are required to avoid significant impact. The MMRP is intended to ensure compliance with all required measures during implementation of the Project. Responsibility for ensuring successful implementation of the MMRP lies with the Stanislaus County Public Works Department, as the Lead Agency for the Project under CEQA.

Environmental monitoring will be required throughout all phases of the Proposed Project. Prior to, and during construction, mitigation monitoring shall minimize potential impacts to environmental resources. Monitoring is also necessary to ensure and verify implementation of the mitigation measures prescribed in the IS/MND. Compliance with mitigation measures can be documented in the Project file through written report, on a schedule typically determined by one or more of the Project permits. Depending on the complexity of the post construction mitigation effort, tasks will be implemented by County staff or technical experts under contract to the County.

The MMRP is organized in a matrix. The first column identifies the mitigation measures. Included with each mitigation measure is a short summary of the specific action needed to fulfill the mitigation measure as well as the milestone date and the agency/agencies responsible for mitigation monitoring.

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Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
Air Quality				
AQ – 1:	The Project contractor shall implement all adequate fugitive dust control measures and ensure that the fugitive dust control measures are implemented in a timely manner during project construction on the Project Site. The contractor shall use measures to control fugitive dust that are outlined in the San Juaquin Valley Air Pollution Control District, *Guidance for Assessing and Mitigating Air Quality Impacts,* to remain in compliance with the District Regulation VIII. Fugitive dust control measures shall include: • Apply water to all visible unpaved surfaces and areas; • Limit or reduce vehicle speed on unpaved roads and traffic areas to 10 miles per hour; • Earth or other material that has been deposited by trucking or earth moving equipment, erosion by water, or other means onto paved streets shall be promptly removed; • Cover haul trucks with a tarp or other suitable cover, or wet the top of load enough to limit visible dust emissions; • Asphalt, oil, water or suitable chemicals shall be applied on stockpiled materials and other surfaces that give rise to airborne dust; • All earthmoving activates shall cease when sustained winds exceed 15 miles per hour; • The contractor's foreman shall take responsible precautions to prevent the entry of unauthorized vehicles during non-work hours; and	Actions implemented during construction to reduce construction-related dust generation.	Prior to and during construction of the Project.	Stanislaus County and Construction Contractor.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
	• The contractor's foreman shall keep a daily log of activities to control fugitive dust.			
AQ – 2:	All construction equipment shall comply with the San Joaquin Valley Air Pollution Control District Mitigation Requirements for Construction Equipment Emissions (Section 6.1 of Rule 9510) by implementing measures to reduce pollutant emissions. These mitigation measures may include: using add-on controls to construction equipment, cleaner fuels, or newer lower emitting equipment. Stanislaus County shall ensure that emissions from construction equipment could achieve a 20% reduction for NOx emissions and a 45% reduction for PM_{10} exhaust emissions.	Actions during construction to reduce construction equipment emissions.	Prior to and during construction of the Project.	Stanislaus County and Construction Contractor.
Biological Resources				
BIO – 1:	A Qualified Biologist shall conduct an environmental awareness training to all construction personnel. The training shall include identification of following special-status species: western pond turtle (*Emys marmorata*), burrowing owl (*Athene cunicularia*), and nesting raptors and migratory birds including Swainson's hawk (*Buteo swainsoni*), and Townsend's big-eared bats (*Corynorhinus townsendii*), required practices before the start of construction, general measures that are being implemented to conserve the species as they relate to the project, penalties for non-compliance, and boundaries of the Project Site and of the permitted disturbance zones. Supporting materials containing training information shall be prepared and distributed. Upon completion of training, all construction personnel shall sign a form stating that they have attended the training and understand all the measures. Proof of this instruction shall be kept on file	Worker awareness training conducted by qualified biologist.	Prior to and during construction activities.	Stanislaus County, Qualified Biologist and Contractor.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
	with the project proponent. The project proponent shall provide the CDFW with a copy of the training materials and copies of the signed forms by project staff indicating that training has been completed within 30 days of the completion of the first training session. Copies of signed forms should be submitted monthly as additional training occurs for new employees. The crew foreman shall be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. If new construction personnel are added to the site, the crew foreman shall ensure that the personnel receive the mandatory training before starting work.			
BIO – 2:	A Qualified Biologist shall conduct a pre-construction western pond turtle survey within 14 days prior to commencement of construction activities. The Qualified Biologist shall document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no western pond turtles are identified during the pre-construction survey, then no further avoidance or minimization measures are recommended. If a western pond turtle is observed within the Project Site during the pre-construction survey, a Qualified Biological Monitor shall be onsite during the initial instream work to ensure that no western pond turtles are present. The Qualified Biological Monitor shall document and submit the results of the monitoring event in a letter to the County and the CDFW within 30 days following the monitoring event.	Pre-construction surveys for western pond turtle.	Prior to construction.	Stanislaus County.

<table>
<tr><th>Mitigation Measure</th><th>Specific Action</th><th>Mitigation Milestone</th><th>Responsible Monitoring Party</th></tr>
<tr><td>BIO – 3:

A Qualified Biologist shall conduct a pre-construction take avoidance survey no less than 14 days prior to initiating ground disturbance using the recommended methods described in the "Detection Surveys Section" in Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no burrowing owls or signs of burrowing owls are detected in the vicinity of the BSA during the pre-construction survey, a letter report documenting survey methods and findings shall be submitted to the County and the CDFW, and no further avoidance or minimization measures are recommended.

If burrowing owls are detected, no-construction buffers and timing on page 9 of the Staff Report on Burrowing Owl Mitigation (CDFW 2012) shall be followed unless a Qualified Biologist verifies through non-invasive methods 1) that the birds have not begun egg laying and incubation, 2) that juveniles from the occupied burrows are capable of independent survival (i.e., foraging independently), or 3) that a reduced buffer is appropriate based on a site-specific evaluation. In addition, high visibility construction fencing should be established around the buffer zone, if feasible. Buffer diameters identified below and outlined in the Staff Report on Burrowing Owl Mitigation (CDFW 2012) are as follows:

Table 4.4-1 — Diameter Buffers for Burrowing Owl
<table>
<tr><th rowspan="2">Location</th><th rowspan="2">Time of Year</th><th colspan="3">Level of Disturbance</th></tr>
<tr><th>Low</th><th>Med</th><th>High</th></tr>
<tr><td>Nesting Sites</td><td>April 1-Aug 15</td><td>356 feet (200 meters)</td><td>1,640 feet (500 meters)</td><td>1,640 feet (500 meters)</td></tr>
<tr><td>Nesting Sites</td><td>Aug 16-Oct 15</td><td>356 feet (200 meters)</td><td>356 feet (200 meters)</td><td>1,640 feet (500 meters)</td></tr>
</table>
</td><td>Pre-construction burrowing owl surveys.</td><td>Prior to construction.</td><td>Stanislaus County.</td></tr>
</table>

Mitigation Measure	Specific Action	Mitigation Milestone	Responsible Monitoring Party

Nesting Sites	Oct 16-Mar 31	164 feet (50 meters)	329 feet (100 meters)	1,640 feet (500 meters)

If the buffers specified above are infeasible, then a Qualified Biologist shall conduct a site evaluation to determine whether impacts can be avoided with implementation of additional measures. If the Qualified Biologist determines that measures can be established to avoid impacts to burrowing owls, the Qualified Biologist shall develop a mitigation plan through consultation with the CDFW including, but not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.

BIO – 4:	If feasible, any trees anticipated for removal should be completed outside of the nesting season (September 1 through February 14). The nesting season is from February 15 through August 31. A Qualified Biologist shall conduct a pre-construction nesting migratory bird and raptor survey within 14 days prior to commencement of construction activities and tree removal, if anticipated to commence during the nesting season (between February 15 and August 31). The Qualified Biologist shall document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are required. If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist	Pre-construction surveys for nesting migratory birds and/or raptors.	Prior to construction.	Stanislaus County.

	Mitigation Measure	Specific Action	Mitigation Milestone	Responsible Monitoring Party
	shall establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone, if feasible. No trees anticipated for removal shall be removed until the Qualified Biologist determines that the nest is no longer occupied. The Qualified Biologist should recommend, if applicable, additional measures based on existing site conditions. Measures may include, but are not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.			
BIO – 5:	Prior to the commencement of construction activities during the nesting season for Swainson's hawk (between March 1 and September 15), a Qualified Biologist shall conduct a minimum of two (2) protocol level pre-construction surveys during the recommended survey periods for the nesting season that coincides with the commencement of construction activities, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The Qualified Biologist shall conduct surveys for nesting Swainson's hawk within ¼-mile of the Project Site where legally permitted. The Qualified Biologist will use binoculars to visually determine whether Swainson's hawk nests occur within the ¼-mile survey area if access is denied on adjacent properties. If no active Swainson's hawk nests are identified on or within ¼ mile of the Project Site within the recommended survey periods, a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the final survey, and no further avoidance and	Pre-construction surveys for nesting Swainson's hawk.	Prior to construction.	Stanislaus County.

Mitigation Measure	Specific Action	Mitigation Milestone	Responsible Monitoring Party
minimization measures for nesting habitat are required. If active Swainson's hawk nests are found within ¼-mile of construction activities, the Qualified Biologist shall contact the County and the CDFW within one day following the pre-construction survey to report the findings. For the purposes of this avoidance and minimization requirement, construction activities are defined to include heavy equipment operation associated with construction (use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging within ¼-mile of a nest site between February 15 and August 31. Should an active nest be present within ¼-mile of construction areas, then the CDFW shall be consulted to establish an appropriate noise buffer, develop take avoidance measures, determine whether high visibility construction fencing should be erected around the buffer zone, and implement a monitoring and reporting program prior to any construction activities occurring within ¼ mile of the nest. Should the Qualified Biologist determine that the construction activities are disturbing the nest, the Qualified Biologist shall halt construction activities until the CDFW is consulted. The construction activities shall not commence until the CDFW determines that construction activities would not result in abandonment of the nest site. Should the Qualified Biologist determine that the nest has not been disturbed during construction activities within the buffer zone, then a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the final monitoring event, and no further avoidance and minimization measures for nesting habitat are required.			

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
BIO – 6:	A Qualified Biologist shall conduct a pre-construction roosting bat survey within 14 days prior to commencement of tree removal. The Qualified Biologist should document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are recommended. If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist shall establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone, if feasible. No trees anticipated for removal should be removed until the Qualified Biologist determines that the bat is no longer occupying the tree.	Pre-construction roosting bat surveys.	Prior to construction.	Stanislaus County.
BIO – 7:	If project development necessitates the placement of fill within federally-jurisdictional waters, prior to initiation of any activity that would place fill in federally-jurisdictional waters, the County shall obtain authorization for the placement of fill in waters of the U.S. and shall comply with the standards in effect at the time authorization is sought. If project development would result in the fill of federally-jurisdictional waters, the County shall also obtain 401 Water Quality Certification or a waiver, as required by the current Central Valley Regional Water Quality Control Board standards.	Obtain authorization for fill of federally-jurisdictional aquatic features.	Prior to ground disturbing activities resulting in fill of federally-jurisdictional aquatic features.	Stanislaus County.
BIO – 8:	If project development would impact onsite aquatic resources and these resources are determined not to be	Obtain authorization for fill of non-federal aquatic	Prior to ground disturbing activities	Stanislaus County.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
	federally-jurisdictional, impacts would then be subject waste discharge requirements under the Porter-Cologne Water Quality Control Act. Therefore, for impacts to non-federal aquatic resources, the County shall comply with the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ or the current applicable Water Quality Order, and will abide by all applicable filing, reporting, and waste discharge requirements.	features.	resulting in fill of non-federal aquatic features.	
Cultural Resources				
CR – 1:	Should buried archaeological deposits or artifacts be advertently exposed during the course of any construction activity, work shall cease in the immediate area and the Stanislaus County Planning and Community Development Department shall be immediately contacted. A qualified archaeologist will be retained to document the find, assess its significance, and recommend further treatment. Work on the Project Site shall not resume until the archaeologist has had a reasonable time to conduct an examination and implement mitigation measures deemed appropriate and necessary by the agency with local jurisdiction in consultation with the qualified archaeologist to reduce impacts to a less than significant level.	Cease work and contact Stanislaus County Planning and Community Development Department in the event of inadvertent discovery of archaeological resources.	During Project construction.	Stanislaus County and Construction Contractor.
CR – 2:	If evidence of a paleontological site is uncovered during grading or other construction activities, work shall be immediately halted within 100 feet of the find and the Stanislaus County Planning and Community Development Department shall be contacted. A qualified paleontologist shall be retained to conduct an on-site evaluation and provide recommendations for removal and/or preservation. Work on the Project Site shall not resume until the paleontologist has had a reasonable amount of time to	Cease work and contact Stanislaus County Planning and Community Development Department in the event of inadvertent discovery of paleontological resources.	During Project construction.	Stanislaus County and Construction Contractor.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
	conduct an examination and implement mitigation measures deemed appropriate and necessary by the agency with local jurisdiction in consultation with the qualified paleontologist to reduce impacts to a less than significant level.			
CR – 3:	In the event that any human remains or any associated funerary objects are encountered during construction, all work will immediately cease within the vicinity of the discovery and the Stanislaus County Planning and Community Development Department shall be immediately contacted for inadvertent discovery of resources associated with park construction. In accordance with CEQA (Section 1064.5) and the California Health and Safety Code (Section 7050.5), the Stanislaus County Coroner shall be contacted immediately. If the human remains are determined to be Native American, then Coroner shall notify the Native American Heritage Commission, who will notify and appoint a Most Likely Descendent (MLD). The MLD will work with a qualified archaeologist to decide the proper treatment of the human remains and any associated funerary objects. Construction activities in the immediate vicinity will not resume until a notice-to-proceed is issued by the Stanislaus County Planning and Community Development Department.	Cease work and contact Stanislaus County Planning and Community Development Department and County Coroner in the event of inadvertent discovery of human remains.	During Project construction.	Stanislaus County and Construction Contractor.
Geology and Soils				
GEO – 1:	Stanislaus County shall apply for and comply with all construction-related storm water permitting, monitoring, and reporting requirements required by the RWQCB under NPDES or other regulatory requirements, as applicable to project development at the time of construction of	Obtain and comply with all applicable storm water-related regulatory authorizations.	Prior to commencement of and during construction	Stanislaus County and Construction Contractor.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
	proposed improvements/facilities.		activities.	
Greenhouse Gas Emissions				
GHG – 1:	The following measures shall be incorporated into design and project construction to reduce GHG emissions: • On-site idling of construction equipment shall be no more than five minute' maximum; • Biodiesel shall be used as an alternative fuel diesel for at least 15 percent of the construction vehicles/equipment if there is a biodiesel station within five miles of the Project Site; • At least 10 percent of the building material used for the Proposed Project shall be local to the extent feasible; and • At least 50 percent of construction waste or demolition materials shall be recycled.	Minimize construction equipment idling time, use of biodiesel, use of local materials, if feasible, and recycle 50 percent of construction waste.	Prior to and during project construction.	Project applicant and Construction Contractor.
Hazards and Hazardous Materials				
HAZ – 1:	Prior to the demolition or modification of any existing structures a Qualified Building Inspector shall survey any affected structures for asbestos and lead-based paint. Any mitigation measures deemed appropriate and necessary by the Building Inspector shall be implemented to reduce impacts to less than significant levels.	Identification of and remediation of asbestos and lead-based paint, where applicable.	Prior to project-related demolition or modification of existing structures.	Construction Contractor.
HAZ – 2:	All asphalt requiring removal from the Project Site shall be disposed of in accordance with current regulatory standards.	All project-related asphalt disposal shall be implemented according to current	During construction.	Construction Contractor.

Mitigation Measure		Specific Action	Mitigation Milestone	Responsible Monitoring Party
		regulatory standards.		
HAZ – 3:	Following construction any yellow traffic stripes/thermoplastics shall be disposed of at a permitted Class I disposal facility to ensure that toxic fumes do not remain a hazard to the public.	Properly dispose of thermoplastics and any yellow striping.	Prior to and during Project construction.	Construction Contractor.
HAZ – 4:	Prior to the relocation or removal of any transformers or power lines associated with the Proposed Project transformers and power lines shall be inspected for the presence of polychlorinatedbiphenyls (PCBs) and other hazardous materials by the utilities owner, and if present, shall be properly remediated and disposed of in accordance with waste regulations.	Inspect transformers or power lines proposed for removal or relocation for PCBs and other hazardous materials, and properly remediate/dispose of all hazardous materials.	Prior to and during project construction.	Stanislaus County.
Noise				
Noise – 1:	Construction activities associated with the Proposed Project shall be limited to 7:30 A.M. to 6:00 P.M. on weekdays.	Limited hours/days for construction activities.	During Project construction.	Stanislaus County and Construction Contractor.

Appendix B — U.S. Department of Agriculture Farmland Conversion Impact Rating (Form AD-1006)

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December 30, 2015

Nate Tumminello, PE
Associate Civil Engineer
Stanislaus County, Public Works
1716 Morgan Road
Modesto, California 95358

RE: Claribel Road at Roselle Avenue Intersection Signalization Project (CML-5938(181)), Farmland Conversion Impact Rating

Dear Mr. Tumminello:

The Claribel Road at Roselle Avenue Intersection Signalization Project (Proposed Project) encompasses an area of approximately 15 acres along Claribel Road and Roselle Avenue. The northern portion of the project site, above Claribel Road, is located within the City of Riverbank, and the southern portion of the project site, below Claribel Road, is located within the unincorporated area of Stanislaus County, California (**Figure 1**). The existing intersection traffic control consists of an all-way stop. Under existing conditions intersection traffic is subject to significant delay, which results in substantial air pollution emissions, and functions at Level of Service (LOS) F with 93.5 seconds of delay. The intersection conducts traffic generated by ongoing urban development in the nearby cities and traffic operations are expected to worsen over time.

Planned signalization of the intersection would result in significant reductions in traffic delay and associated air pollution. The Proposed Project consists of signalizing the intersection at Claribel Road and Roselle Avenue, including widening the existing two-lane roadway at the intersection to accommodate turn lanes for truck and light vehicle traffic. This would include widening the east and west legs of Claribel Road, and north and south legs of Roselle Avenue. From the intersection, the lengths of improvements for each leg are as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south.

As shown on **Figure 2**, approximately 0.4 acre of unique farmland and 8.3 acres of farmland of local importance designated by the State Farmland Mapping and Monitoring Program are mapped within the Area of Potential Effect (APE) identified for the Proposed Project. Also shown on **Figure 2**, of the farmland mapped within the APE, approximately 0.31 acres of Unique Farmland and 2.27 acres of Farmland of Local Importance (2.58 acres total) are mapped within existing Stanislaus County right-of-way. Therefore, a total of 6.12 acres of farmland would be converted within the proposed right-of-way to be impacted by the Proposed Project.

As required by the Caltrans-approved Preliminary Environmental Study, Foothill Associates has completed the required sections of Form AD-1006 (**Attachment 1**). The *Farmland Protection*

Policy Act Manual was consulted to complete the Form, particularly relevant to Part VI, Site Assessment Criteria. As documented by the attached Form AD-1006, development of the Proposed Project would convert a total of 8.7 acres of designated farmland (2.58 acres within existing County right-of-way and 6.12 acres within proposed right-of-way), for a resulting total score of 48. Individual criteria for each site assessment factor are described below.

Factor 1 (Score: 10): Within a 1.0 mile radius of the Project Site approximately 2,029 acres of land are nonurban and approximately 985 acres of land are urban (**Figure 3**). This equates to 67.3 percent of nonurban land within 1 mile of the project site, resulting in a score of 10 for Factor 1.

Factor 2 (Score: 10): The entire perimeter of the project site is bordered by nonurban land use. The project site would therefore qualify for a score of 10 for Factor 2 for having 90 percent or greater perimeter bordering land in nonurban use (**Figure 3**).

Factor 3 (Score: 8): Within the project site all of the farmland has been farmed more than 5 of the last 10 years. There are also a total of 6.3 acres of non-farmland lands within the project site (2.4 acres rural residential land and urban built-up land and 3.9 acres of roadway) (**Figure 2**). The 15-acre project site is therefore 42 percent farmland that has been farmed for more than 5 of the last 10 years, and would therefore qualify for a score of 8 for Factor 3.

Factor 4 (Score: 20): Stanislaus County has differential assessment tax relief and assesses taxes based on the agricultural value of the land rather than the market value if the landowner enters into a contract with Stanislaus County guaranteeing that the land will continue to remain in farming for at least ten years. As a result, farmers pay fewer taxes on their land. This local policy is included in the list of policies and programs to protect farmlands within the *Farmland Protection Policy Act Manual* and the Proposed Project would therefore qualify for a score of 20 for Factor 4.

Factor 5 (Score: 0): The project site is approximately 275 feet from the closest urban built-up area and therefore qualifies for a score of 0 for Factor 5 (**Figure 4**).

Factor 6 (Score: 0): A power line corridor runs directly through the project site and a power station is located approximately 275 feet from the project site. In addition, a residential community is located approximately 365 feet from the project site with several utility services. Therefore, several services exist within ½ mile of the project site, and the Proposed Project therefore qualifies for a score of 0 for Factor 6.

Factor 7 (Score: 0): According to the 2014 *Stanislaus County Agricultural Crop Report*, based on the 2012 U.S. Department of Agriculture Census of Agriculture, the average farm size in the County is 185 acres. The farmed parcels of land within the project site are all less than 92.5 acres and would therefore qualify for a score of 0 for Factor 7 for being 50 percent or below the average farm size in Stanislaus County.

Factor 8 (Score: 0): Implementation of the Proposed Project would not have an adverse effect on remaining farmlands within and adjacent to the project site because the balance of the remaining agricultural land would remain farmable. The amount of land not including the

project site that would become non-farmable is 5 percent or less and the Proposed Project would therefore qualify for a score of 0 for Factor 8.

Factor 9 (Score: 0): The Project Site does not have any available farm support services and markets in close proximity and would therefore receive a score of 0 for Factor 9 (**Figure 4**).

Factor 10 (Score: 0): The project site has a total of 0.07 acres of substantial, well-maintained on-farm investments including other farm storage buildings, drainage, and irrigation (**Figure 4**). Therefore, approximately 0.005 percent of the project site contains on-farm investments and the Proposed Project would therefore qualify for a score of 0 for Factor 10.

Factor 11 (Score: 0): Converting the farmland to non-agricultural use through implementation of the Proposed Project would not jeopardize the continued existence of support services and thus the viability of the farms remaining in the area. The amount of reduction in support services if the project site is converted to non-agricultural is anticipated between 0 and 9 percent and the Proposed Project would therefore receive a score of 0 for Factor 11.

Factor 12 (Score: 0): Development of the Proposed Project would result in road widening and installation of signalization at Claribel Road at Roselle Avenue. This proposed use would not be sufficiently incompatible to contribute to the eventual conversion of the surrounding farmland to non-agricultural use. The Proposed Project is fully compatible with existing agricultural use of surrounding farmland and therefore, the Proposed Project qualifies for a score of 0 points for Factor 12.

According to the California Department of Transportation Standard Environmental Reference (SER) Farmlands Decision Tree if the total site assessment score from Form AD-1006 is less than 60 points for each alternative, the form need not be submitted to the Natural Resource Conservation Service (NRCS). The completed form should instead be retained in the project file and the environmental document should summarize the steps taken to identify and evaluate farmland impacts (Caltrans SER, Chapter 23).

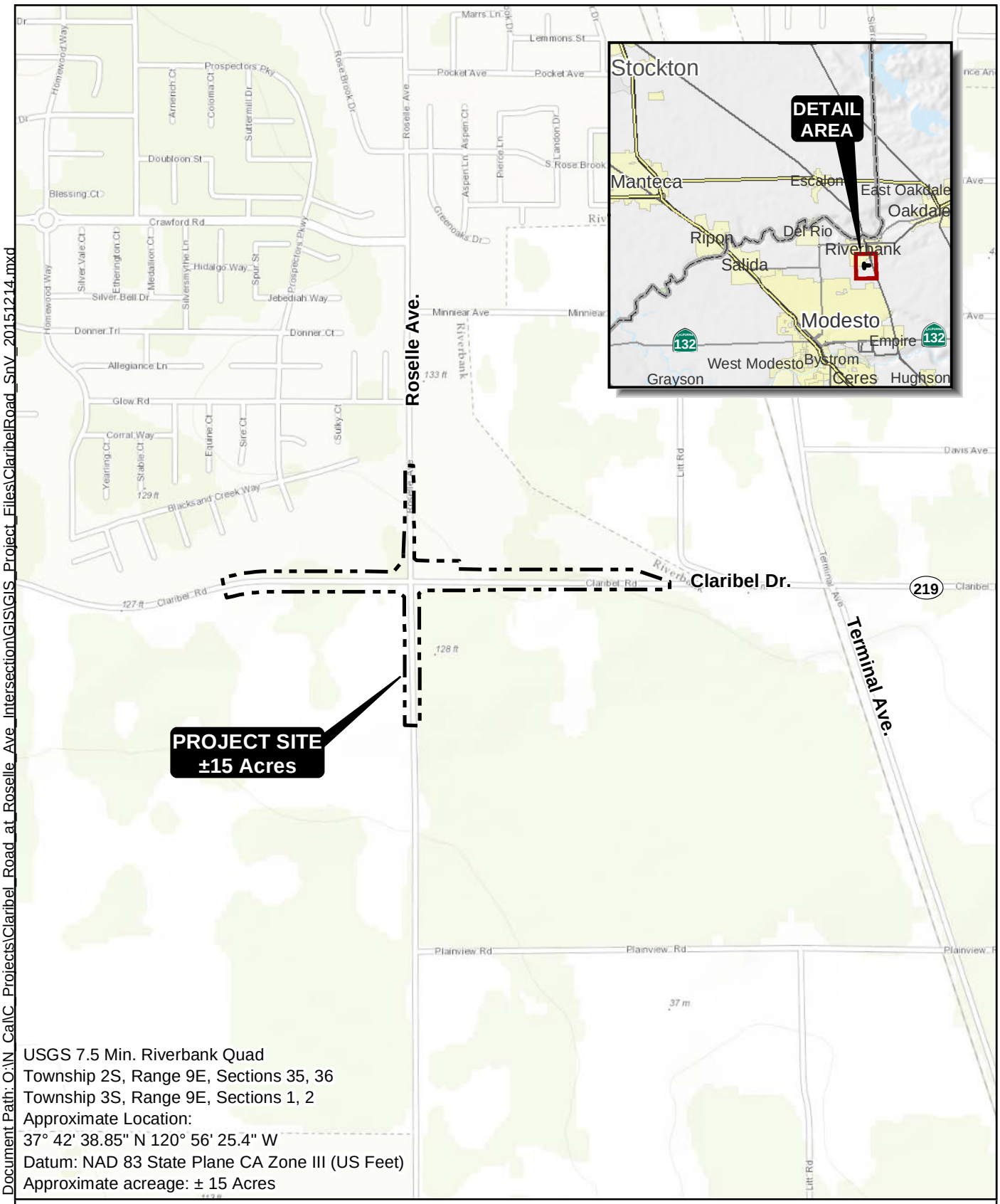
If you have any questions please contact me at your earliest convenience at (916) 435-1202 or email kshields@foothill.com.

Sincerely,

Kyrsten Shields

Kyrsten Shields
Senior Regulatory Specialist

Enclosures (5)



USGS 7.5 Min. Riverbank Quad
Township 2S, Range 9E, Sections 35, 36
Township 3S, Range 9E, Sections 1, 2
Approximate Location:
37° 42' 38.85" N 120° 56' 25.4" W
Datum: NAD 83 State Plane CA Zone III (US Feet)
Approximate acreage: ± 15 Acres

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SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 500 1000
FEET
1:12,000

Drawn By: MUB
Date: 12/14/2015

FIGURE 1

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION SIGNALIZATION PROJECT FARMLAND IMPACTS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 250 500
Feet
1 inch = 500 feet

Drawn By: MUB
Date: 12/14/2015

FIGURE 2

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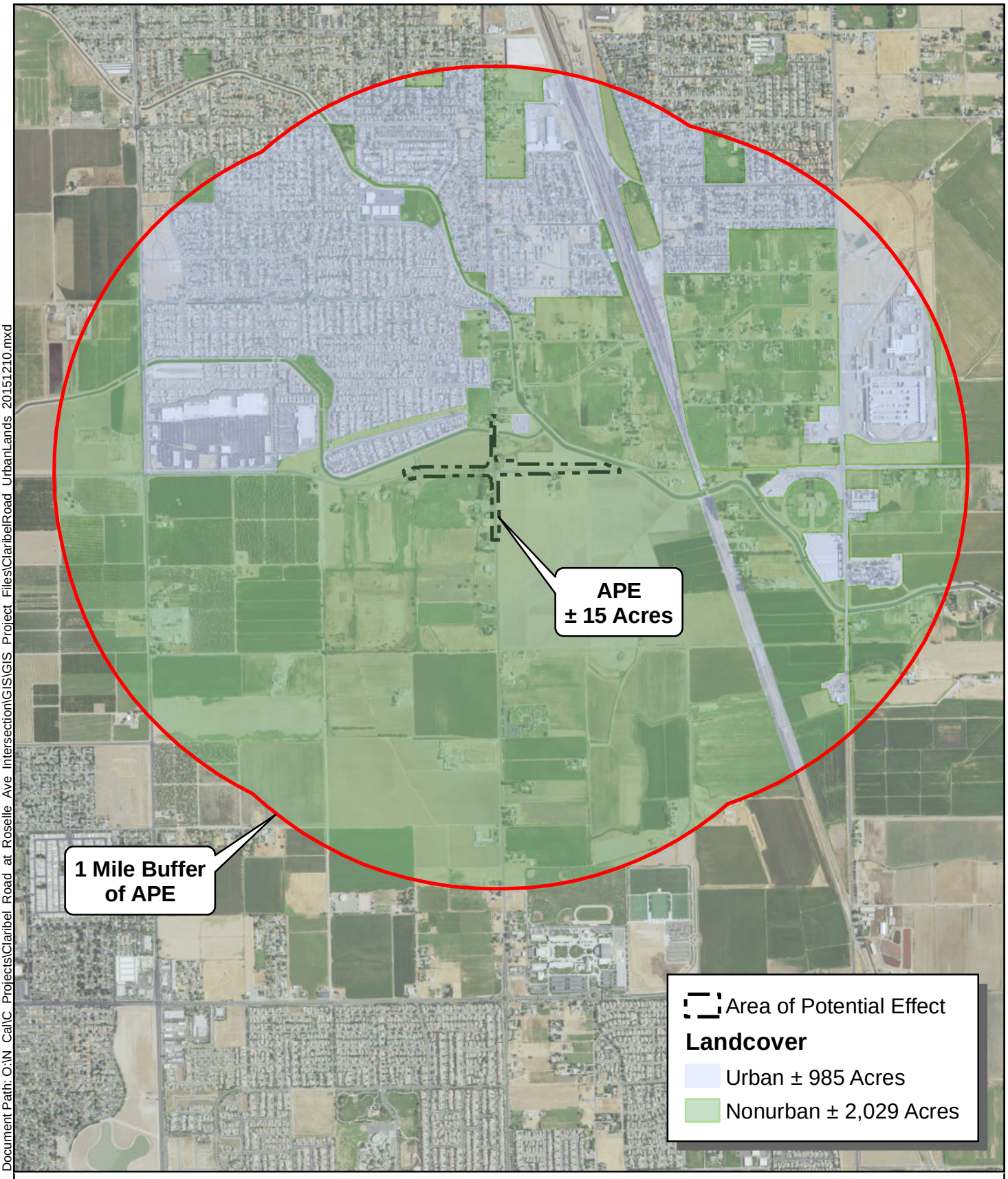

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION SIGNALIZATION PROJECT URBAN AND NONURBAN AREAS

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ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

N

0 1,000 2,000
Feet
1 inch = 2,000 feet

Drawn By: MUB
Date: 12/14/2015

FIGURE 3

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CLARIBEL ROAD AT ROSELLE AVENUE INTERSECTION SIGNALIZATION PROJECT SITE ASSESSMENT CRITERIA

FOOTHILL ASSOCIATES
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N

0 250 500
Feet
1 inch = 500 feet

Drawn By: MUB
Date: 12/14/2015

FIGURE 4

Document Name: ClaribelRoad_UrbanLandsFig4_20151211.mxd : : 12/14/2015 2:55:20 PM

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request December 4, 2015	
Name of Project Claribel Road at Roselle Avenue Intersection Road Signalization Project		Federal Agency Involved Caltrans District 10	
Proposed Land Use Signalized intersection, including widening of the existing two lane roadway		County and State Stanislaus County, California	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	Person Completing Form:
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	8.7			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	15.2			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.4			
B. Total Acres Statewide Important or Local Important Farmland	8.3			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	10			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	8			
4. Protection Provided By State and Local Government	(20)	20			
5. Distance From Urban Built-up Area	(15)	0			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	0			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	48	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	48	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	48	0	0	0

Site Selected: Site A	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix C — *Air Quality Conformity Analysis* [for the] *Signalized Road/Roselle Avenue Intersection Project, Stanislaus County, California*

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Air Quality Conformity Analysis

Signalized Claribel Road/Roselle Avenue Intersection Project

Stanislaus County, California

District 10 - STA

Federal Project Number CML-5938 (181)
Federal Transportation Improvement Program Number 21400000594

February 2016

Prepared By: _____ Date: _____
Wayne Shijo, Project Manager
KD Anderson & Associates

Caltrans

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Section 1. Introduction and Project Description

This Air Quality Conformity Analysis contains the information that is required to make a project-level air quality conformity determination for the Signalized Claribel Road/Roselle Avenue Intersection Project. This analysis has been prepared to be consistent with information published by Federal Highway Administration (FHWA) related to Project-Level Conformity Analysis, the Standard Environmental Reference (SER), applicable U.S. Environmental Protection Agency (EPA) project-level analysis guidance, the Transportation Conformity Regulations at 40 CFR 93 Subpart A, and Section 176(c) of the Federal Clean Air Act (42 USC 7506(c)).

This analysis only addresses the conformity requirements of the Federal Clean Air Act. It does not address general air quality analysis or studies conducted for the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA), and only addresses pollutants for which the project area is designated nonattainment, or attainment with an approved Maintenance State Implementation Plan (SIP), by the U.S. EPA.

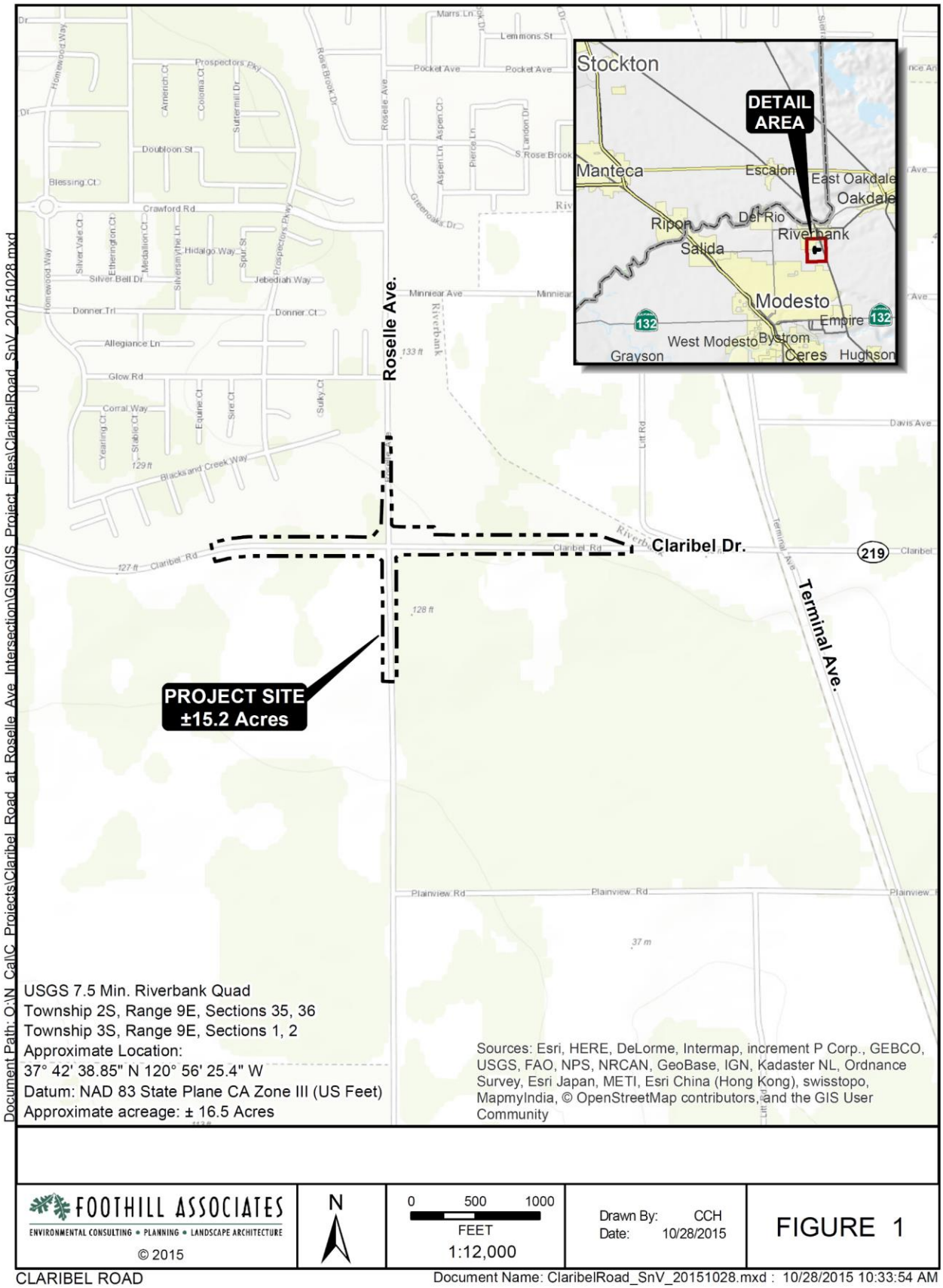
This report is intended to provide all information needed by FHWA to make a project-level conformity determination for a project that falls under 23 USC 327 NEPA Assignment to Caltrans; or to support a full project-level conformity determination by Caltrans under 23 CFR 326 NEPA Assignment for projects that require a project-level conformity determination (including regionally significant projects as defined in 40 CFR 93.101), and are categorically excluded from NEPA analysis under 23 CFR 771.117(c)(22) or 23 CFR 771.117(c)(23).

1.1. Project Description

The County of Stanislaus proposes to improve the intersection of Claribel Road and Roselle Avenue. The following is a description of the Signalized Claribel Road/Roselle Avenue Intersection Project.

1.1.1. Project Location

The project site consists of approximately 15.2 acres along Claribel Road and Roselle Avenue. The northern portion of the project site, north of Claribel Road is located within the City of Riverbank, and the southern portion of the project site, south of Claribel Road, is located within the unincorporated area of Stanislaus County. The location of the project site is shown in the enclosed **Figure 1**. The project site is south of the City of Riverbank and north of the City of Modesto.



PROJECT SITE LOCATION AND VICINITY

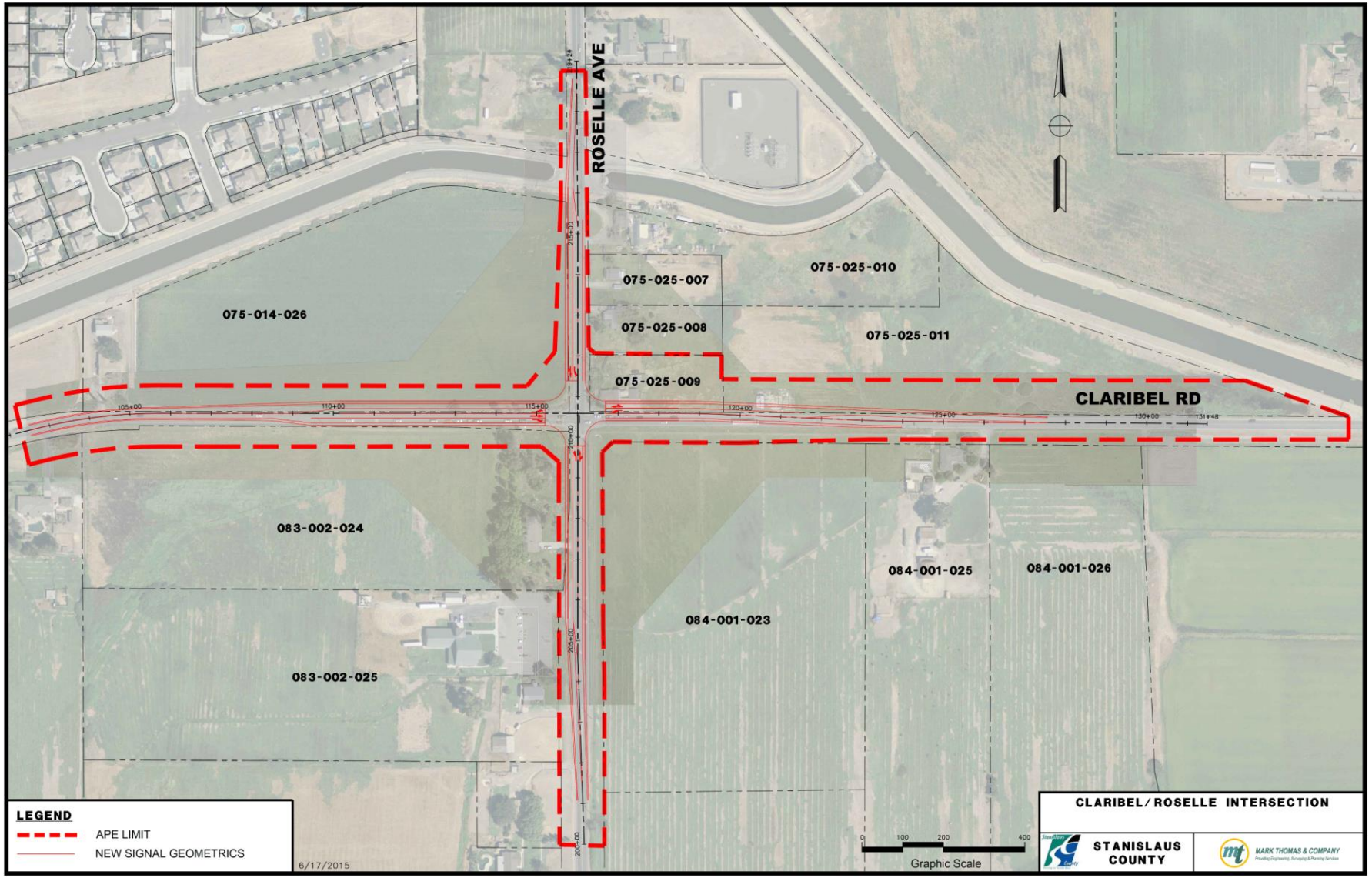
1.1.2. Existing Facilities

Traffic control at the existing intersection of Claribel Road and Roselle Avenue is an all-way stop in combination with an overhead flashing red beacon at the center of the intersection. Single-lane approaches are present on all four approaches to the intersection. Roll-over curbs are provided at all corners to facilitate truck turning movements.

Under existing conditions, intersection traffic is subject to substantial delay. Using the Highway Capacity Manual (HCM) method, the intersection functions at level of service (LOS) F with 93.5 seconds of delay. Ongoing urban development in the nearby cities is expected to degrade traffic operations in the future.

1.1.3. Proposed Facilities

The County proposes signalization of the intersection of Claribel Road and Roselle Avenue, as well as accommodating the existing two-lane roadways at the intersection with turn lanes. No additional through lanes would be constructed, and proposed improvements would not increase capacity of the approach roads. The proposed improvements are shown in **Figure 2**.



PROJECT SITE

The proposed improvements would include widening the east and west legs of Claribel Road, and the north and south legs of Roselle Avenue. From the intersection, the lengths of improvement for each leg are as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south. The central portion of the intersection would be widened to accommodate the new turn lanes. The corner radii would also be increased to facilitate right turn movements.

Proposed signal improvements would involve the installation of foundations, poles, and mast arms to support the proposed signal assemblies, street name signs and luminaries as well as control boxes and other related equipment. Multi-phase control would be provided to accommodate anticipated turning movements on all four approaches.

The project would include a 0.2-foot minimum pavement overlay of the existing paved sections on all the project segments. The improved roadway sections would be restriped and signed in accordance with County and State standards.

Construction of the project is scheduled to begin May 2017. Traffic on both Claribel Road and Roselle Avenue through the project site would be accommodated during the construction period. The project is not expected to require closure of either road. Traffic would be diverted onto the half-road section to allow construction of new facilities on the opposite side. Construction of the project is scheduled to be completed September 2017.

1.1.4. National Environmental Policy Act Compliance

To comply with NEPA, a categorical exclusion (CE) with required technical studies will be prepared under the provisions of Section 6004 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEALU).

1.1.5. Transportation Planning

The Signalized Claribel Road/Roselle Avenue Intersection Project is included as a Tier I roadway project in the Stanislaus Council of Governments (StanCOG) *2014 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS, and included as a Congestion Mitigation & Air Quality (CMAQ) project in the StanCOG *2015 Federal Transportation Improvement Program* (FTIP).

A December 15, 2014 letter from Mr. Vincent P. Mammano, Division Administrator, California Division of the U.S. Department of Transportation Federal Highway Administration; to Mr. Carlos Yamzon, Executive Director of the Stanislaus Council of Governments notes,

"On June 18, 2014 Stan COG adopted the 2015 FTIP and made the corresponding conformity determination via Resolution 13-49. The conformity analysis submitted indicates that all air quality conformity requirements have been met. Based on our review, and after consultation with the EPA Region 9 office, we find that the 2015 FTIP conforms to the applicable State Implementation Plan in accordance with the provisions of 40 CFR Parts 51 and 93" of the U.S. EPA Transportation Conformity Rule.

1.2. Air Quality Regulatory Framework

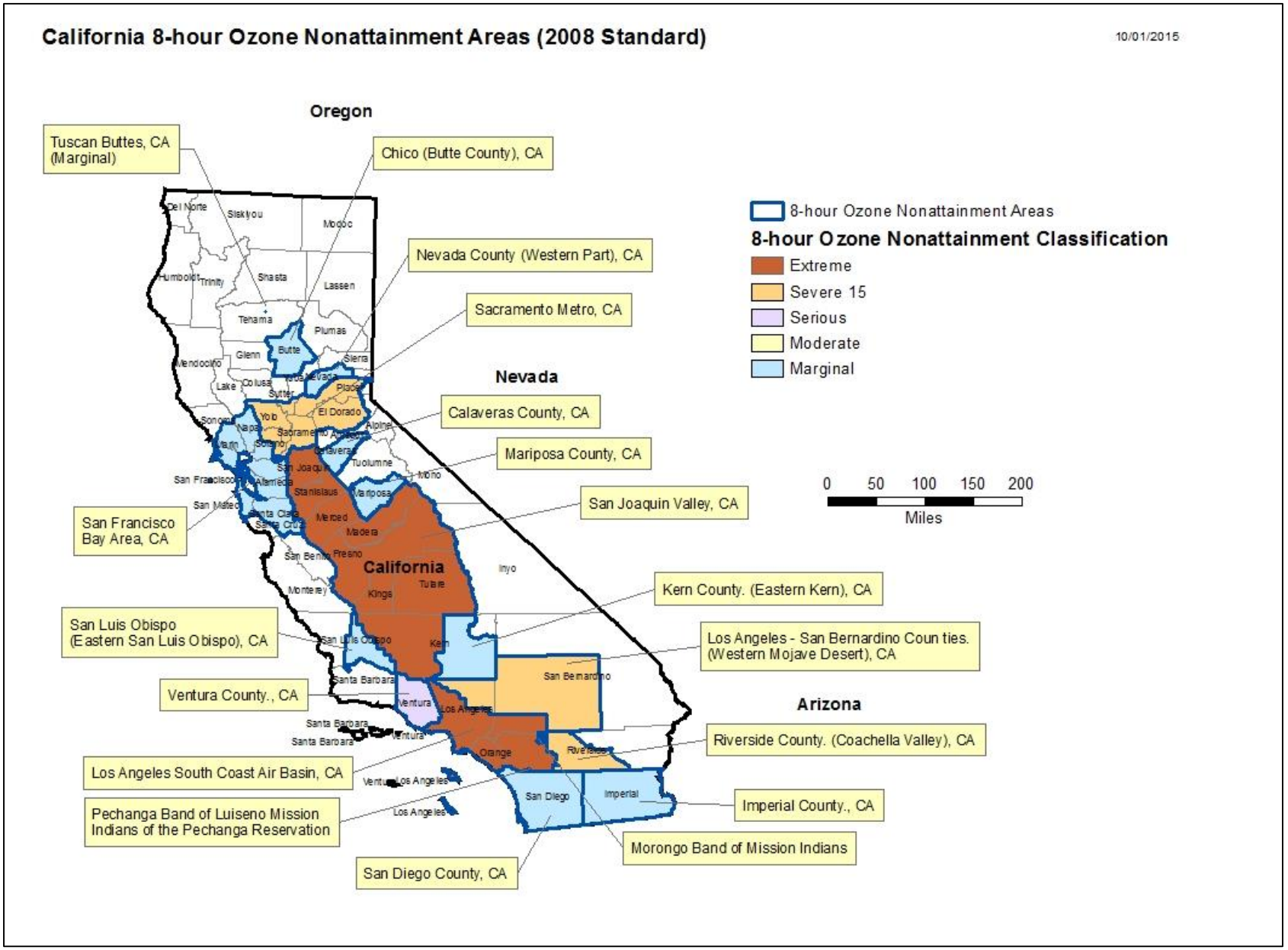
Table 1 shows that the proposed project is located in an area that is nonattainment for ozone and fine particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$) and attainment-maintenance for carbon monoxide (CO) and inhalable particulate matter smaller than 10 microns in diameter (PM_{10}). This analysis focuses on these criteria pollutant(s). The conformity process does not address pollutants for which the area is attainment/unclassified, mobile source air toxics, other toxic air contaminants or hazardous air pollutants, or greenhouse gases.

Table 1. Project Area Attainment Status

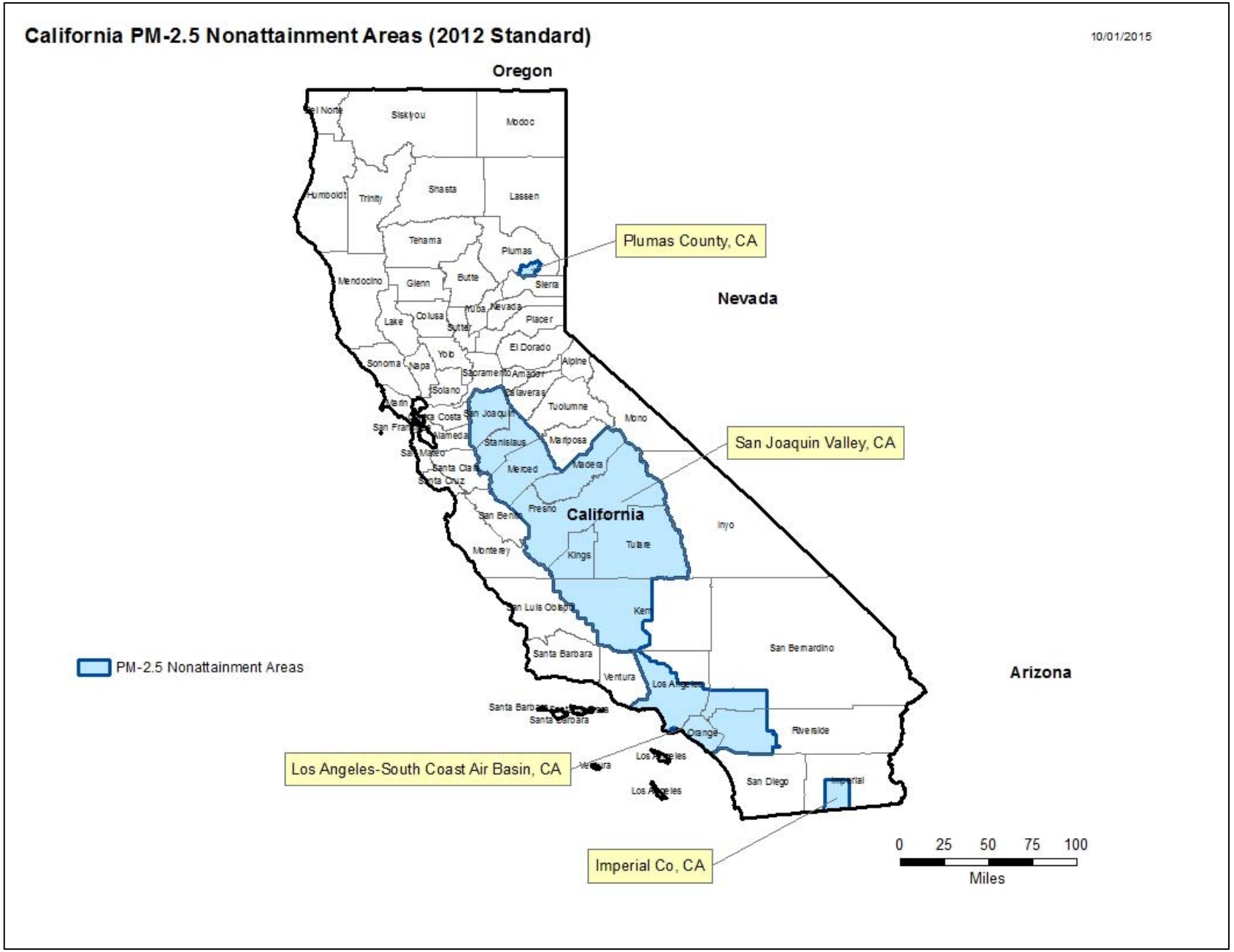
Criteria Pollutant	Federal Attainment Status
Ozone (O_3)	Nonattainment (Extreme)
Nitrogen Dioxide (NO_2)	Attainment-Unclassified
Carbon Monoxide (CO)	Attainment- Unclassified
Particulate Matter (PM10)	Attainment- Maintenance
Particulate Matter (PM2.5)	Nonattainment (Moderate)

All of Stanislaus County is in both the San Joaquin Valley ozone nonattainment area, and the San Joaquin Valley $PM_{2.5}$ nonattainment area. The San Joaquin Valley ozone nonattainment area is shown in **Figure 3**, and the San Joaquin Valley $PM_{2.5}$ nonattainment area is shown in **Figure 4**. Both the San Joaquin Valley ozone nonattainment area and the San Joaquin Valley $PM_{2.5}$ nonattainment area include:

- all of Fresno County,
- all of Kings County,
- all of Madera County,
- all of Merced County,
- all of San Joaquin County,
- all of Stanislaus County,
- all of Tulare County, and
- a portion of Kern County.



OZONE NONATTAINMENT AREA



PM$_{2.5}$ NONATTAINMENT AREA

The portion of Kern County included in both the San Joaquin Valley ozone nonattainment area and the San Joaquin Valley $PM_{2.5}$ nonattainment area includes that portion of Kern County which lies west and north of a line described as follows:

- Beginning at the Kern-Los Angeles County boundary and running north and east along the northwest boundary of the Rancho La Libre Land Grant to the point of intersection with the range line common to R. 16 W. and R. 17 W., San Bernardino Base and Meridian;
- north along the range line to the point of intersection with the Rancho El Tejon Land Grant boundary;
- then southeast, northeast, and northwest along the boundary of the Rancho El Tejon Land Grant to the northwest corner of S. 3, T. 11 N., R. 17 W.;
- then west 1.2 miles;
- then north to the Rancho El Tejon Land Grant boundary;
- then northwest along the Rancho El Tejon line to the southeast corner of S. 34, T. 32 S., R. 30 E., Mount Diablo Base and Meridian;
- then north to the northwest corner of S. 35, T. 31 S., R. 30 E.;
- then northeast along the boundary of the Rancho El Tejon Land Grant to the southwest corner of S. 18, T. 31 S., R. 31 E.;
- then east to the southeast corner of S. 13, T. 31 S., R. 31 E.;
- then north along the range line common to R. 31 E. and R. 32 E., Mount Diablo Base and Meridian, to the northwest corner of S. 6, T. 29 S., R. 32 E.;
- then east to the southwest corner of S. 31, T. 28 S., R. 32 E.;
- then north along the range line common to R. 31 E. and R. 32 E. to the northwest corner of S. 6, T. 28 S., R. 32 E.,
- then west to the southeast corner of S. 36, T. 27 S., R. 31 E., and
- then north along the range line common to R. 31 E. and R. 32 E. to the Kern-Tulare County boundary.

1.3. Public Review Comments Related to Air Quality Conformity

Circulation for public comment was not required because the NEPA determination for this project is a Categorical Exclusion.

Section 2. Regional Conformity

The Signalized Claribel Road/Roselle Avenue Intersection project was included in the regional emissions analysis conducted by StanCOG for the conforming 2014 RTP/SCS. The project's design concept and scope have not changed significantly from what was analyzed in the regional emission analysis. This analysis found that the plan , which takes into account regionally significant projects and financial constraint, will conform to the state implementation plan(s) (SIP(s)) for attaining and maintaining the National Ambient Air Quality Standards (NAAQS) as provided in Section 176(c) of the Clean Air Act. FHWA determined that the RTP/SCS conforms to the SIP on December 12, 2014. Additional documentation related to the regional emissions analysis is contained in Appendix A.

Section 3. Localized Impact (Hot-Spot) Conformity

3.1. Carbon Monoxide Hot-Spot Analysis

This project is located in an area that is designated attainment-unclassified for carbon monoxide (CO). Therefore, no project-level conformity analysis is necessary for CO.

3.2. PM2.5/PM10 Hot-Spot Analysis

According to the U.S. EPA Transportation Conformity Guidance (Final Rule), March 10 2006, the following types of projects are considered Projects of Air Quality Concern (POAQC):

1) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles (significant number is defined as greater than 125,000 Annual Average Daily Traffic (AADT) **and** 8% or more of such AADT is diesel truck traffic, or in practice 10,000 truck AADT or more regardless of total AADT; significant increase is defined in practice as a 10% increase in heavy duty truck traffic);
2) Projects affecting intersections that are at a Level of Service D, E, F, with a significant number of diesel vehicles, or that that will change to Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
3) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

4) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; or
5) Projects in or affecting locations, areas, or categories of sites which are identified in the PM2.5 or PM10 implementation plan or implementation plan submission, as appropriate, as sites of possible violation.

3.2.1. Projects of Air Quality Concern Criteria #1

Daily traffic volumes, based on traffic count data and the San Joaquin Council of Governments (SJCOG) Three-County travel demand model are shown in **Table 2**. Daily traffic volumes on both Claribel Road and Roselle Avenue for both existing and future 2040 (the final year of the current Regional Transportation Plan) will be below the 125,000 AADT threshold. In the future, the highest volume would be 22,656 vehicles per day on Claribel Road east of Roselle Avenue.

The project would not increase traffic volumes on either Claribel Road or Roselle Avenue, and the project would not exceed the AADT threshold through 2040. Thus, the project would not meet criteria #1 described above.

Table 2. Average Daily Traffic Volumes

Year and Location	Without Claribel & Roselle Intersection Project	With Claribel & Roselle Intersection Project
Existing		
Claribel Road west of Roselle Avenue	14,570	14,570
Claribel Road east of Roselle Avenue	14,570	14,570
Roselle Avenue north of Claribel Road	7,621	7,621
Roselle Avenue south of Claribel Road	6,857	6,857
2040		
Claribel Road west of Roselle Avenue	14,758	14,758
Claribel Road east of Roselle Avenue	22,656	22,656
Roselle Avenue north of Claribel Road	11,980	11,980
Roselle Avenue south of Claribel Road	16,764	16,764

Source: Existing volumes from *Traffic Operations Report for the North County Corridor*. 2040 forecasts are based on the San Joaquin County Council of Governments Three-County traffic model via Kim Kloeb, November 2015.

3.2.2. Projects of Air Quality Concern Criteria #2

LOS for the intersection of Claribel Road and Roselle Avenue under existing, near-term future and long-term future are shown in the enclosed **Table 3**. The project would not degrade LOS at the intersection and, in nearly all scenarios, would improve LOS at the intersection. Thus, the project would not meet criteria #2 described above.

Table 3. Intersection Level of Service

Year	Without Claribel & Roselle Intersection Project		With Claribel & Roselle Intersection Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Year 2016	E	F	C	C
Year 2026 Without North County Corridor	F	F	C	D
Year 2026 With North County Corridor	D	F	C	C
Year 2042 Without North County Corridor	F	F	E	F
Year 2042 With North County Corridor	E	F	C	D

Source: Megan Johnson, Project Engineer, Mark Thomas & Company. November 10, 2015 E-mail message to Kyrsten Shields, Senior Regulatory Specialist, Foothill Associates.

3.2.3. Projects of Air Quality Concern Criteria #3

The project does not include the construction of a new bus terminal, rail terminal, or transfer point. Thus, the project would not meet criteria #3 described above.

3.2.4. Projects of Air Quality Concern Criteria #4

The project does not include expansion of a bus terminal, rail terminal, or transfer point. Thus, the project would not meet criteria #4 described above.

3.2.5. Projects of Air Quality Concern Criteria #5

The project is not located within and would not affect sites that are identified as sites of possible PM_{10} or $PM_{2.5}$ violations pursuant to applicable implementation plans. Thus, the project would not meet criteria #5 described above.

For the reasons listed above, the proposed project is not considered a POAQC for PM10 and/or PM2.5 because it does not meet the definition of a POAQC as defined in U.S. EPA's Transportation Conformity Guidance. PM hot-spot analysis is not required.

The project has undergone Interagency Consultation (IAC) regarding POAQC determination. IAC participants concurred that the project is not a POAQC (see Appendix C).

The approved PM10 and PM2.5 SIP has no control measures applicable to the proposed project. Therefore, a written commitment to implement control measures is not required.

3.3. Construction-Related Hot-Spot Emissions

40 CFR 93.123(c)(5) states that: "CO, PM10 , and PM2.5 hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site."

Appendix A. Documentation Related to Regional Conformity

Regional Emissions Analysis Conducted for Conforming RTP

The regional emissions analysis found that regional emissions will not exceed the SIP's emission budgets for mobile sources in the build year, a horizon year at least 20 years from when conformity analysis started, and additional years meeting conformity regulation requirements for periodic analysis. The regional emissions analysis was based on the latest population and employment projections for Stanislaus County that were adopted by the Stanislaus Council of Governments at the time the conformity analysis was started on August 2013. These assumptions are less than five years old. The modeling was conducted using current and future population, employment, traffic, and congestion estimates. The traffic data, including the fleet mix data, were based on the most recently available vehicle registration data included in the EMFAC model. EMFAC2011 was used, which was the most recent version of the model developed by the California Air Resources Board and approved for use in California by the U.S. EPA at the time of the analysis.

Public and Interagency Consultation Process for TIP

The federal TIP was developed in accordance with Stanislaus Council of Governments policies for community input and interagency consultation procedures. These procedures ensure that the public has adequate opportunity to be informed of the federal TIP development process and encourages public participation and comment.

Interagency Consultation

Consultation is generally conducted through the San Joaquin Valley Interagency Consultation Group (combination of previous Model Coordinating Committee and Programming Coordinating Group). The San Joaquin Valley Interagency Consultation (IAC) Group has been established by the Valley Transportation Planning Agency's Director's Association to provide a coordinated approach to valley transportation planning and programming (Transportation Improvement Program, Regional Transportation Plan, and Amendments), transportation conformity, climate change, and air quality (State Implementation Plan and Rules). The purpose of the group is to ensure Valley wide coordination, communication and compliance with Federal and California Transportation Planning and Clean Air Act requirements. Each of the eight Valley MPOs and the Air District are represented. In addition, the Federal Highway Administration, Federal Transit Administration, the Environmental Protection Agency, the California Air Resources

Board and Caltrans (Headquarters, District 6, and District 10) are all represented. The IAC Group meets approximately quarterly.

The interagency consultation process for the 2015 TIP, 2014 RTP, and corresponding Conformity Analysis began on the September 2013 IAC conference call. Discussion topics included the draft schedule, procedures and documentation, including analysis years. In August 2013, the Draft Conformity Analysis Years, Latest Planning Assumptions and Transportation Modeling, Air Quality Modeling, Transportation Control Measures, and Draft Conformity Procedures for Regional Emissions Estimates were transmitted for IAC. EPA and FHWA provided concurrence in September 2014. EPA and FHWA concurrence for the draft boilerplate document was provided in January 2014. Minor editorial updates in response to IAC have been incorporated. In addition, EPA approved the San Joaquin Valley Heavy Duty Diesel Vehicle VMT Recession Adjustment Methodology on January 14, 2014.

The Draft 2014 RTP was released March 25, 2014 for a 60-day public comment period, the 2015 FTIP, and corresponding 2014 RTP/2015 TIP Conformity Analysis were released on April 16, 2014 for a 50-day public comment period, followed by Board adoption in June 2014. Federal approval of the 2014 RTP, 2015 TIP, and Conformity Analysis occurred on December 14, 2014.

The StanCOG Draft 2015 FTIP and Draft 2014 RTP/SCS were developed in cooperation with StanCOG's local jurisdictions, including local transit operators and social services providers, Caltrans. StanCOG's advisory committees were involved in each step of the development process for these two documents.

Public Consultation

In general, agencies making conformity determinations shall establish a proactive public involvement process that provides opportunity for public review and comment on a conformity determination for TIPs/RTPs. In addition, all public comments must be addressed in writing.

All MPOs in the San Joaquin Valley have standard public involvement procedures. In general, the TIP/RTP and corresponding conformity analysis are the subject of a public notice and 30-day review period prior to adoption. A public hearing is also conducted prior to adoption and all public comments are responded to in writing.

Appendix B. PM Interagency Consultation

A memorandum was prepared by the Stanislaus County Department of Public Work *Subject: Consultation of PM_{10} and $PM_{2.5}$ Hot-spot Conformity Assessment for The Signalized Claribel Road/Roselle Avenue Intersection Project* on January 11, 2016. The memorandum was submitted to the Stanislaus Council of Governments Interagency Consultation (IAC) Partners for review. The project was reviewed and the IAC Partners concurred with the conclusion the project is not a Project of Air Quality Concern (POAQC). Evidence that the IAC Partners concurred with this conclusion is provided in Appendix C

Particulate Matter (PM10 and PM2.5) Conformity Assessment – Project is not a Project of Air Quality Concern (POAQC)

1.1 Summary

This project is located in Stanislaus County and the San Joaquin Valley nonattainment area. The San Joaquin Valley nonattainment area is designated as nonattainment for the $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS). The proposed Signalized Claribel Road/Roselle Avenue Intersection Project is primarily surrounded by open space land uses with single-family residences to the northeast.

According to the U.S. EPA's 2006 and 2010 Guidance documents, PM hot-spot analysis is required only for projects of local air quality concern ("Projects of Air Quality Concern" or POAQCs) in nonattainment and maintenance areas for PM10 and/or PM2.5. Projects that are exempt from conformity requirements (listed in 40 CFR 93.126 or 128) do not need any hot-spot analysis for project-level conformity purposes. Based on the information provided below, this non-exempt project is not a project of local air quality concern (POAQC) because it does not meet U.S. EPA criteria; therefore, a detailed hot-spot analysis for PM2.5 is not required.

1.2 Background

Section 93.116(a) of 40 Code of Federal Regulations (CFR) states that an FHWA/project must not cause or contribute to any new localized $PM_{2.5}$ violations or increase the frequency or severity of any existing PM10 and PM2.5 violations in nonattainment or maintenance areas. The regulations further state that projects may satisfy this requirement without an analysis of their potential to create PM hot-spots provided that they do not meet the criteria set forth in Section 93.123 (b) for POAQC. Projects that are not a POAQC do not require detailed hot-spot analysis because, generally, they would not substantially affect high-priority PM10 or PM2.5 (as applicable) concentrations and are unlikely to cause or contribute to new or continued localized violation of the NAAQS.

With regard to local air quality impacts analysis, a project may be considered to have one of three types of status: (1) exempt; (2) not exempt but not a POAQC based on the specific parameters established in the U.S. EPA regulations; and (3) a POAQC, which requires that a qualitative hot-spot analysis be conducted. The Signalized Claribel Road/Roselle Avenue Intersection Project does not meet the definition of an exempt project under Sections 93.126 or 93.128.

The U.S. EPA Transportation Conformity Rule defines projects of localized air quality concern (POAQC), requiring detailed PM10 and PM2.5 hot-spot analysis, in 40 CFR 93.123(b)(1) as:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

(ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

1.3 Project is Not a Project of Local Air Quality Concern (POAQC)

The Signalized Claribel Road/Roselle Avenue Intersection Project does not fall within any of the above five categories of projects considered to be POAQCs, as explained below.

*i. Daily traffic volumes, based on traffic count data and the San Joaquin Council of Governments (SJCOG) Three-County travel demand model are shown in **Table A**. Daily traffic volumes on both Claribel Road and Roselle Avenue for both existing and future 2040 (the final year of the current Regional Transportation Plan) will be below the 125,000 AADT threshold. In the future, the highest volume would be 22,656 vehicles per day on Claribel Road east of Roselle Avenue.*

The project would not increase traffic volumes on either Claribel Road or Roselle Avenue, and the project would not exceed the AADT threshold through 2040. Thus, the project would not meet criteria (i) described above.

ii. *LOS for intersection of Claribel Road and Roselle Avenue under existing, near-term future and long-term future are shown in the enclosed **Table B**. The project would not degrade LOS at the intersection and, in nearly all scenarios, would improve LOS at the intersection. Thus, the project would not meet criteria(iii) described above.*

iii. The proposed project does not include the construction of a new bus or rail terminal. Thus, the project would not meet criteria(ii) described above.

iv. The proposed project does not expand an existing bus or rail terminal. Thus, the project would not meet criteria(iv) described above.

v. The proposed project is not in or affecting locations, areas, or categories of sites that are identified in the PM10 and PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. Thus, the project would not meet criteria(v) described above.

Therefore, the proposed project meets the Clean Air Act requirements and 40 CFR 93.116 without any explicit hot-spot analysis. The proposed project would not create a new, or worsen an existing, PM10 and PM2.5 violation.

1.4 Supporting Information

Table A. Average Daily Traffic Volumes

Year and Location	Without Claribel & Roselle Intersection Project	With Claribel & Roselle Intersection Project
Existing		
Claribel Road west of Roselle Avenue	14,570	14,570
Claribel Road east of Roselle Avenue	14,570	14,570
Roselle Avenue north of Claribel Road	7,621	7,621
Roselle Avenue south of Claribel Road	6,857	6,857
2040		
Claribel Road west of Roselle Avenue	14,758	14,758
Claribel Road east of Roselle Avenue	22,656	22,656
Roselle Avenue north of Claribel Road	11,980	11,980
Roselle Avenue south of Claribel Road	16,764	16,764

Source: Existing volumes from *Traffic Operations Report for the North County Corridor*. 2040 forecasts are based on the San Joaquin County Council of Governments Three-County traffic model via Kim Kloeb, November 2015.

Table B. Intersection Level of Service

Year	Without Claribel & Roselle Intersection Project		With Claribel & Roselle Intersection Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Year 2016	E	F	C	C
Year 2026 Without North County Corridor	F	F	C	D
Year 2026 With North County Corridor	D	F	C	C
Year 2042 Without North County Corridor	F	F	E	F
Year 2042 With North County Corridor	E	F	C	D

Source: Megan Johnson, Project Engineer, Mark Thomas & Company. November 10, 2015 E-mail message to Kyrsten Shields, Senior Regulatory Specialist, Foothill Associates.

1.5 Conclusion

There is no reason to believe that this project would create a new violation or worsen an existing violation of the PM10 & PM2.5 National Ambient Air Quality Standards (NAAQS). This project does not meet the U.S. EPA criteria for being a Project of Local Air Quality Concern (POAQC).

The County of Stanislaus Department of Public Works has completed this PM2.5 hot-spot assessment and has determined that this project is not "Project of Air Quality Concern;" therefore no further PM hot-spot analysis is required for conformity upon concurrence with this determination by Interagency Consultation.

1.6 Public Involvement Process

This project was categorically excluded from NEPA requirements. Therefore no public circulation of this hot-spot review or an updated conformity determination is required.

Appendix C. StanCOG IAC Concurrence Memorandum

Stanislaus Council Of Governments

City of Ceres • City of Hughson • City of Modesto • City of Newman • City of Oakdale • City of Patterson
City of Riverbank • City of Turlock • City of Waterford • County of Stanislaus

Memorandum

To: Nate Tumminello, P.E., Associate Civil Engineer, Stanislaus County

From: Elisabeth Hahn, Senior Planner, Stanislaus Council of Governments

Date: January 12, 2016

Subject: Concurrence Received from the EPA and Caltrans Regarding the PM10 and PM2.5 Hot-spot Conformity Assessment for Stanislaus County's CML 5938 (181) Signalized Claribel Road/Roselle Avenue Intersection Project, CTIPS ID # 214-0000-0594

StanCOG circulated a memo to the Interagency Consultation (IAC) Group on January 11, 2016 requesting concurrence from both the Environmental Protection Agency (EPA) and the California Department of Transportation (Caltrans) that the Signalized Claribel Road/Roselle Avenue Intersection Project (CML 5938 (181), CTIPS ID # 214-0000-0594), in Stanislaus County is not a Project of Air Quality Concern (POAQC). The circulation period for this review was to end on January 25, 2016.

The EPA and Caltrans responded to the request for concurrence on January 12, 2016. Attached is the correspondence from these two agencies providing their concurrence that CML 5938 (181) Signalized Claribel Road/Roselle Avenue Intersection Project is not a POAQC.

Should you have any questions regarding this memo or its attachments, I can be reached by phone at (209) 525-4633 or by e-mail at ehahn@stancog.org. Thank you.

1111 I Street • Suite 308 • Modesto, CA • 95354 • 209-525-4600 • 209-558-7833 Fax •www.stancog.org

Isael Ojeda - RE: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938(181) Signalized Claribel Road/Roselle Avenue Intersection Project

---

From: Isael Ojeda

Subject: RE: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938 (181) Signalized Claribel Road/Roselle Avenue Intersection Project

---

>>> "OConnor, Karina" <OConnor.Karina@epa.gov> 1/12/2016 8:45 AM >>>

EPA concurs that this is not a project of air quality concern.

Thanks, Karina

Karina OConnor
EPA, Region 9
Air Planning Office (AIR-2)
(775) 434-8176
oconnor.karina@epa.gov

From: Isael Ojeda [mailto:iojeda@Stancog.org]
Sent: Monday, January 11, 2016 5:32 PM
Cc: Elisabeth Hahn <EHAHN@Stancog.org>
Subject: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938(181) Signalized Claribel Road/Roselle Avenue Intersection Project

Good Afternoon Interagency Consultation Partners:

StanCOG, on behalf of Stanislaus County, is providing the attached PM2.5 and PM10 Hot-Spot Conformity Assessment memo for the Signalized Claribel Road/Roselle Avenue Intersection Project, CML 5938 (181) (CTIPS #214-0000-0594), for Interagency Consultation. As part of the environmental review, it is requested that the Interagency Consultation Partners concur that this project is not a Project of Air Quality Concern (POAQC) and will not result in new violations of Federal PM2.5 and PM10 air quality standards.

Please reply to all with concurrence and/or comments by **5:00 p.m. on January 25, 2016**. An interagency conference call will be held upon request. Caltrans and EPA concurrence is requested.

Should you have any questions regarding this e-mail or the attached memo, please feel free to contact Elisabeth Hahn by phone at (209) 525-4633 or via email at email at ehahn@stancog.org.

Isael Ojeda - RE: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938(181) Signalized Claribel Road/Roselle Avenue Intersection Project

---

From: Isael Ojeda

Subject: RE: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938 (181) Signalized Claribel Road/Roselle Avenue Intersection Project

---

>>> "Romero, Ken J@DOT" <ken.j.romero@dot.ca.gov> 1/12/2016 9:05 AM >>>

Caltrans concurs that this is not a project of air quality concern.

From: Isael Ojeda [mailto:iojeda@Stancog.org]
Sent: Monday, January 11, 2016 5:32 PM
Cc: Elisabeth Hahn <EHAHN@Stancog.org>
Subject: Stanislaus County IAC Memo for PM10 and PM2.5 Hot Spot Conformity Assessment-CML 5938(181) Signalized Claribel Road/Roselle Avenue Intersection Project

Good Afternoon Interagency Consultation Partners:

StanCOG, on behalf of Stanislaus County, is providing the attached PM2.5 and PM10 Hot-Spot Conformity Assessment memo for the Signalized Claribel Road/Roselle Avenue Intersection Project, CML 5938 (181) (CTIPS #214-0000-0594), for Interagency Consultation. As part of the environmental review, it is requested that the Interagency Consultation Partners concur that this project is not a Project of Air Quality Concern (POAQC) and will not result in new violations of Federal PM2.5 and PM10 air quality standards.

Please reply to all with concurrence and/or comments by **5:00 p.m. on January 25, 2016**. An interagency conference call will be held upon request. Caltrans and EPA concurrence is requested.

Should you have any questions regarding this e-mail or the attached memo, please feel free to contact Elisabeth Hahn by phone at (209) 525-4633 or via email at email at ehahn@stancog.org.

Appendix D — *Claribel Road at Roselle Avenue Intersection Road Widening Project Natural Environmental Study*

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Final Natural Environmental Study

[10-Stanislaus] – [Claribel Road at Roselle Avenue Intersection Widening Project]

Project Number: BRLO – 5938(181)

February 2016

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

Claribel Road at Roselle Avenue Intersection Widening Project

Federal ID Number: CML-5938(181)

February 2016

STATE OF CALIFORNIA
Department of Transportation
Stanislaus County, California

Prepared By: _____ Date: 02/03/2016

Kelly Bayne, Senior Biologist
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Submitted By: _____ Date: _____

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Approved By: _____ Date: _____

Emily Zelazo, Branch Chief
California Department of Transportation, District 10
Environmental MPS and Local Assistance Branch
1976 East Charter Way/ East Dr. Martin Luther King Jr. Blvd.
Stockton, CA 95205
(209) 948-7427

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans (District 10), Emily Zelazo, 1976 East Charter Way/ East Dr. Martin Luther King Jr. Blvd., Stockton, CA 85205; (209) 948-7427 Voice; or use the California Relay Service TTY 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

Summary

Stanislaus County (County) is proposing the construction of a signalized intersection at Claribel Road and Roselle Avenue in Stanislaus County to accommodate turn lanes to accommodate truck and light vehicle traffic.

The Biological Study Area (BSA) includes approximately 70 acres of land surrounding the intersection that was surveyed for biological resources. The BSA is characterized by agricultural land, irrigated pasture, and ruderal/developed areas. The project would impact the following biological communities: approximately 7.12 acres of agricultural land, 1.23 acres of irrigated pasture, 6.77 acres of ruderal/developed area, 0.04 acre of irrigation ditch, and 0.01 acre of roadside ditch. The BSA provides low quality habitat for most wildlife species because of the overall lack of vegetation cover and the high levels of disturbed and developed areas. The Modesto Irrigation District (MID) Lateral Number 6 (MID Lateral Canal) crosses beneath Roselle Avenue in the northern portion of the BSA and the MID Main Canal crosses beneath Claribel Road in the eastern portion of the BSA. Several artificial manmade irrigation ditches also occur within the BSA.

The project will have no impact on federally-listed species since no federally-listed species have the potential to occur within the BSA. The project could potentially affect western pond turtle (*Emys marmorata*), Townsend's big-eared bat (*Corynorhinus townsendii*), and nesting raptors and migratory birds including Swainson's hawk (*Buteo swainsoni*) and burrowing owl (*Athene cunicularia*).

The jurisdictional limits of the California Department of Fish and Wildlife (CDFW) extend from the top of bank to the opposite top of a naturally occurring bank on these features, or to the limits of riparian vegetation if this vegetation extends beyond the top of the banks. Therefore, because the MID Lateral Canal lacks riparian vegetation or stream dependent terrestrial benefit, a Section 1600 Streambed Alteration Agreement is not applicable to this feature. However, the project would impact the bed and banks of the approximately 10-foot wide irrigation ditch located on the west side of Roselle Avenue. Therefore, a 1600 Streambed Alteration Agreement would be required for improvements altering the bed, bank, or channel of this feature.

Although the project will affect the MID Lateral Canal, an aquatic feature, the feature is a manmade, cement-lined irrigation canal that was constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and is therefore not considered jurisdictional under Section 404 of the Clean Water Act (CWA). Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACOE). Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation

ditches are included in the exemption for irrigation ditches. If the proposed project would result in impacts to potentially jurisdictional waters of the U.S., then a formal delineation is required.

Two unlined, channelized, manmade irrigation ditches occur within the BSA and would be impacted by the project. As with the MID Lateral Canal, discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the U.S.

The roadside ditches delineated within the BSA would be impacted by the project. The roadside ditches present within the BSA are not considered jurisdictional because they are excavated wholly in, and drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

A "Delineation of Waters of the U.S." report would need to be submitted to the USACOE to establish if the USACOE will verify concurrence with the preliminary non-jurisdictional status of onsite aquatic features. If the USACOE determines that these features are jurisdictional, these features would be regulated by Sections 404 and 401 of the CWA. Should the project result in impacts to any waters of the U.S., a Section 404 Authorization would be required by the USACOE. A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) would also be required. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed would need to be offset on a "no-net-loss" basis in accordance with the USACOE mitigation guidelines.

If the USACOE verifies that the features are not jurisdictional, then these features may still be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act. Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

Project implementation could result in spreading invasive plant species and noxious weeds. Measures to avoid and minimize impacts to these biological resources shall be implemented.

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List of Abbreviated Terms

BSA	Biological Survey Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department and Fish and Wildlife
CDFA	California Department of Food and Agriculture
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CWA	Clean Water Act
DBH	Diameter at Breast Height
EO	Executive Order
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MID	Modesto Irrigation District
MSL	Mean Sea Level
NEPA	Natural Environmental Policy Act
NES	Natural Environment Study
NRCS	Natural Resources Conservation Service
PDSR	Project Design Study Report
PIA	Project Impact Area
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
TCE	Temporary Construction Easements
USACOE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

1.1 Project Location

The Project Impact Area (PIA) consists of approximately 15.2 acres along Claribel Road and Roselle Avenue. The northern portion of the PIA, above Claribel Road, is located within the City of Riverbank, and the southern portion of the PIA, below Claribel Road is located within the unincorporated area of Stanislaus County, California (**Figure 1**).

1.2 Project History

1.2.1 Purpose and Need

The existing intersection of Claribel Road and Roselle Avenue is located in both Stanislaus County, in the southern portion of the PIA, and the City of Riverbank in the northern portion of the PIA. Traffic control at the intersection is an all-way stop in combination with an overhead flashing red beacon at the center of the intersection. Roll-over curbs are provided at all corners to facilitate truck turning movements. Under existing conditions, intersection traffic is subject to significant delay, which results in substantial air pollution emissions; using the Highway Capacity Manual (HCM) method, the intersection functions at Level of Service (LOS) F with 93.5 seconds of delay. The intersection conducts traffic generated by ongoing urban development in the nearby cities and traffic operations are expected to worsen over time.

Planned signalization of the intersection will result in significant reductions in traffic delay and associated air pollution. The County has calculated the benefit:cost ratio for the project based on air quality improvements alone at over 12:1.

1.3 Alternatives

The County considered five alternatives in its Project Design Study Report (PDSR) for the project including: 1) No Build; 2) Signal Installation, No Widening; 3) Signal Installation, Widening for Specified Turning Movements; 4) Signal Installation, Widening for Left Turning Movements; and 5) Signal Installation, Widening for All Turning Movements. The PDSR recommended the selection of Alternative 4, which is the proposed project. Alternative 4 is the least-cost alternative that meets the project purpose and need and provides maximal benefits.

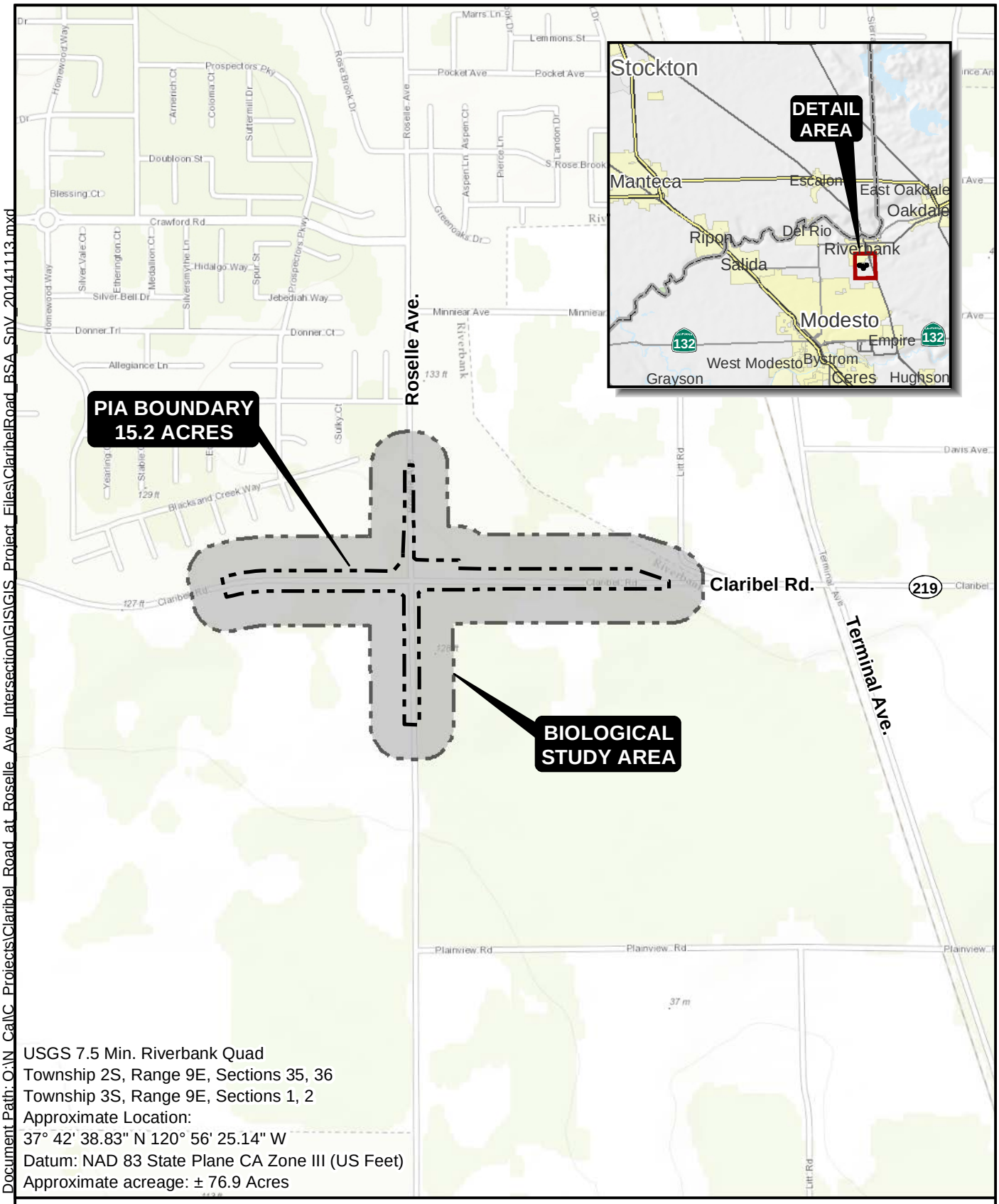
1.4 Project Description

The County is proposing the construction of a signalized intersection at Claribel Road and Roselle Avenue, including widening the existing two-lane roadway at the intersection to accommodate turn lanes to accommodate truck and light vehicle traffic. No additional through lanes would be constructed and proposed improvements would not increase capacity of the approach road(s).

1.4.1 Required Right-Of-Way Acquisition

The project will require permanent right-of-way acquisition from property owners in the northwest, northeast, and southwest quadrants of the intersection. Temporary Construction

Easements (TCE) and Permits to Enter and Construct (PTE) may be needed from all quadrants on the project.



USGS 7.5 Min. Riverbank Quad
Township 2S, Range 9E, Sections 35, 36
Township 3S, Range 9E, Sections 1, 2
Approximate Location:
37° 42' 38.83" N 120° 56' 25.14" W
Datum: NAD 83 State Plane CA Zone III (US Feet)
Approximate acreage: ± 76.9 Acres

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SITE AND VICINITY

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Date: 07/21/2015

FIGURE 1

1.4.2 Required Utility Relocation

The existing overhead utility poles along the west side of Roselle Avenue and along the north and south sides of Claribel Road will be relocated, as needed, in conjunction with the project. Underground utilities in the project vicinity, if present, will be relocated as needed.

1.4.3 Proposed Facilities

The intersection at Claribel Road and Roselle Avenue would be signalized and widened to accommodate existing traffic operations, including light vehicle and truck turning movements. This would include widening the east and west legs of Claribel Road, and the north and south legs of Roselle Avenue. From the intersection, the lengths of improvement for each leg are as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south. The central portion of the intersection will be widened to accommodate the new turn lanes. The corner radii will also be increased to facilitate right turn movements for trucks and light vehicles.

Proposed signal improvements would involve the installation of foundations, poles, and mast arms to support the proposed signal assemblies, street name signs and luminaries as well as control boxes and other related equipment. Multi-phase control would be provided to accommodate anticipated turning movements on all four approaches.

The project would include a 0.1-foot minimum pavement overlay of the existing paved sections on all the project segments. The improved roadway sections would be restriped and signed in accordance with County and State standards.

1.4.4 Ground Disturbance

Project development will require grading within existing undeveloped areas within County right-of-way as well as within areas of proposed right-of-way acquisition.

1.4.5 Excavation

Excavation up to a depth of five feet will be required to establish roadway subgrades and foundations for signals and signage.

1.4.6 Vegetation Removal

Vegetation removal will be required within the existing undeveloped areas within County right-of-way, as well as within undeveloped areas of proposed right-of-way acquisition, and may involve the removal of small trees.

1.4.7 Staging Areas

Equipment and materials staging for the project are likely to occur within off-site contractor facilities, along the existing County road right-of-way, and along the new right-of-way to be acquired; however, staging location areas have not been defined.

1.4.8 Construction Access

Existing traffic through the Claribel Road/Roselle Avenue intersection will be accommodated during the construction period pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either road. Traffic will be diverted onto the half-road section to allow construction of new facilities on the opposite side.

2.0 STUDY METHODS

The following sections describe federal, State, and local environmental laws and policies that are relevant to this Natural Environment Study (NES) and the studies required for this project.

2.1 Regulatory Requirements

2.1.1 Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

2.1.2 Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

2.1.3 Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project. Under this EO, federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

2.1.4 Section 404 of the Clean Water Act

The U.S. Army Corps of Engineers regulates discharge of dredge or fill material into waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial,

commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

Roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are not considered waters of the U.S. because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

2.1.5 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife, formally California Department of Fish and Game, when preparing California Environmental Quality Act (CEQA) documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

2.1.6 Section 401 Water Quality Certification

A Section 401 Water Quality Certification Permit was established to comply with CWA Sections 301, 302, 303, 306, and 307 and is regulated by the Regional Water Quality Control Board. Anyone that proposes to conduct a project that may result in a discharge to U.S. surface waters and/or "waters of the state" including wetlands (all types) year round and seasonal streams, lakes and all other surface waters would require a federal permit. At a minimum, any beneficial uses lost must be replaced by a mitigation project of at least equal function, value, and area. Waste Discharge Requirements Permits are required pursuant to California Water Code Section 13260 for any persons discharging or proposing to discharge waste, including dredge/fill, that could affect the quality of the waters of the state.

2.1.7 Section 1600 Streambed Alteration Agreement

The California Department of Fish and Wildlife (CDFW) is a trustee agency that has jurisdiction under Section 1600 *et seq*. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." Additionally, CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

2.1.8 Porter-Cologne Water Quality Control Act

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

2.1.9 California Department of Fish and Game Codes

Fully protected fish species are protected under Section 5515; fully protected amphibian and reptile species are protected under Section 5050; fully protected bird species are protected under Section 3511; and fully protected mammal species are protected under Section 4700. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Sections 2062 and 2067 define endangered and threatened species.

2.1.10 California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened.

2.1.11 California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California (CNPS 2016). The CNPS listings categorize plants as follows:

- List 1A: Plants presumed extinct in California;
- List 1B: Plants rare, threatened, or endangered in California or elsewhere;
- List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- List 3: Plants about which we need more information; and
- List 4: Plants of limited distribution.

2.2 Studies Required

2.2.1 Literature Search

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section. The following site-specific information was reviewed:

- California Department of Fish and Wildlife. 2016. California Natural Diversity Data Base (CNDDB: *Riverbank, Avena, Escalon, Oakdale, Salida, Waterford, Brush Lake, Ceres, or Denair* quadrangles), Sacramento, CA. [Accessed 01/26/2016] (**Appendix A**);
- California Native Plant Society. 2016. Inventory of Rare and Endangered Plants (online edition, v8-01a) (CNPS: *Riverbank, Avena, Escalon, Oakdale, Salida, Waterford, Brush Lake, Ceres, or Denair* quadrangles). [Accessed 01/26/2016] (**Appendix A**);
- U.S. Fish and Wildlife Service. 2016. *Information for Planning and Conservation (IPaC) Trust Resource Report: My Project, Stanislaus County, CA*. [Accessed 01/26/2016] (**Appendix A**); and
- LSA Associates, Inc. 2014. *North County Corridor New State Route 108 Draft Natural Environment Study*. August 2014.

2.2.2 Personnel and Survey Date

A reconnaissance level biological survey was conducted on November 10, 2014 by Kelly Bayne M.S., a senior biologist with nine years of biological experience.

2.2.3 Survey Methods

Reconnaissance level biological survey were conducted to characterize general biological resources and to determine the potential for sensitive biological resources to occur within the Biological Study Area (BSA). The project footprint and vicinity were surveyed on foot and the habitat types present were characterized and mapped. Habitat types within the BSA that could not be surveyed on foot because of private property access issues were identified and mapped from public roads and aerial photographs. Habitat types within the BSA were assessed for their potential to support special-status plant and wildlife species. Plant species observed within the BSA that are designated as invasive by the California Invasive Plant Council (Cal-IPC), or as noxious weeds by the California Department of Food and Agriculture (CDFA) were noted during the field reconnaissance survey.

2.2.4 Agency Coordination and Professional Contacts

Prior to fieldwork, the U.S. Fish and Wildlife Service (USFWS) was contacted on December 4, 2014 to obtain a list of potentially occurring federal-listed species on the *Riverbank* quadrangle (USFWS 2014); the CNPS was contacted on December 4, 2014 to obtain a list of special-status plants that occur on the *Riverbank* quadrangle and eight surrounding quadrangles (CNPS 2014); and the California Natural Diversity Database (CNDDB) was queried on December 4, 2014 to obtain a list of special-status species documented on the *Riverbank* quadrangle and eight surrounding quadrangles (CDFW 2014). These agencies were contacted again and the lists were updated on January 26, 2016 (USFWS 2016; CNPS 2016; and CDFW 2016).

2.2.5 Limitations That May Influence the Results

Due to the time of year the survey was conducted, no protocol-level surveys were performed. In addition, habitat types within the BSA that could not be surveyed on foot because of private property access restrictions were identified and mapped from public roads with binoculars and aerial photographs.

3.0 RESULTS: ENVIRONMENTAL SETTING

3.1 Description of the Existing Biological and Physical Conditions

The PIA is located in Township 2 South, Range 9 East, Sections 35 and 36 and Township 3 South, Range 9 East, Sections 1 and 2 of the U.S. Geological Survey (USGS) 7.5-minute *Riverbank* quadrangle Mount Diablo Baseline and Meridian. The approximate centroid of the PIA is 37° 42' 38.83" North, 120° 56' 25.4" West, NAD 83 State Plane California Zone III (U.S. feet). The PIA is bordered to the northwest by residential development and the MID Lateral Canal, to the southwest and southeast by agriculture and residential development, and to northeast by agricultural, residential dwellings, commercial development, and the MID Lateral Canal (**Figure 1**).

3.2 Study Area

The BSA includes a 250-foot buffer around the PIA, which comprises approximately 70 acres (**Figure 2**). The BSA was chosen because raptors nesting within 250 feet of construction sites have been known to abandon their nests in response to construction disturbances. This was considered the maximum distance that project impacts on biological resources could be expected, except in the instance of Swainson's hawk (*Buteo swainsoni*), which is discussed below in further detail. The MID Lateral Canal crosses through the BSA in the northwest, the north, and the northeast.

3.3 Physical Conditions

The BSA is within the San Joaquin Valley, a region having a Mediterranean climate characterized by hot dry summers with daytime temperatures commonly exceeding 100° Fahrenheit and cool rainy winters. The mean annual rainfall in the area is 10 to 15 inches. The BSA has an elevation ranging between 125 and 135 feet above mean sea level (MSL) and a topography that is relatively flat. The majority of the BSA has either already been developed or is subject to ongoing disturbance from agricultural operations. Few native plant species were observed within the BSA (**Appendix A**).

The BSA is comprised of one soil type: (**SaA) San Joaquin Sandy Loams, 0 to 3 Percent Slopes** (USDA, NRCS 2015a) (**Figure 3**). This soil type is found in fan remnants with a parent material comprised of alluvium derived from granite. This soil type is moderately well drained with a depth to restrictive feature from 20 to 40 inches to duripan. This soil type is considered hydric in depressions (USDA, NRCS 2015b).

3.4 Biological Conditions in the Biological Study Area

3.4.1 Agriculture

Agriculture occurs within the majority of the BSA. The agricultural fields had been recently plowed at the time of the survey, so minimal vegetation was observed growing, including Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), filaree (*Erodium botrys*), ripgut brome (*Bromus diandrus*), barley (*Hordeum murinum*), wild oat (*Avena fatua*), and soft brome (*Bromus hordeaceus*).

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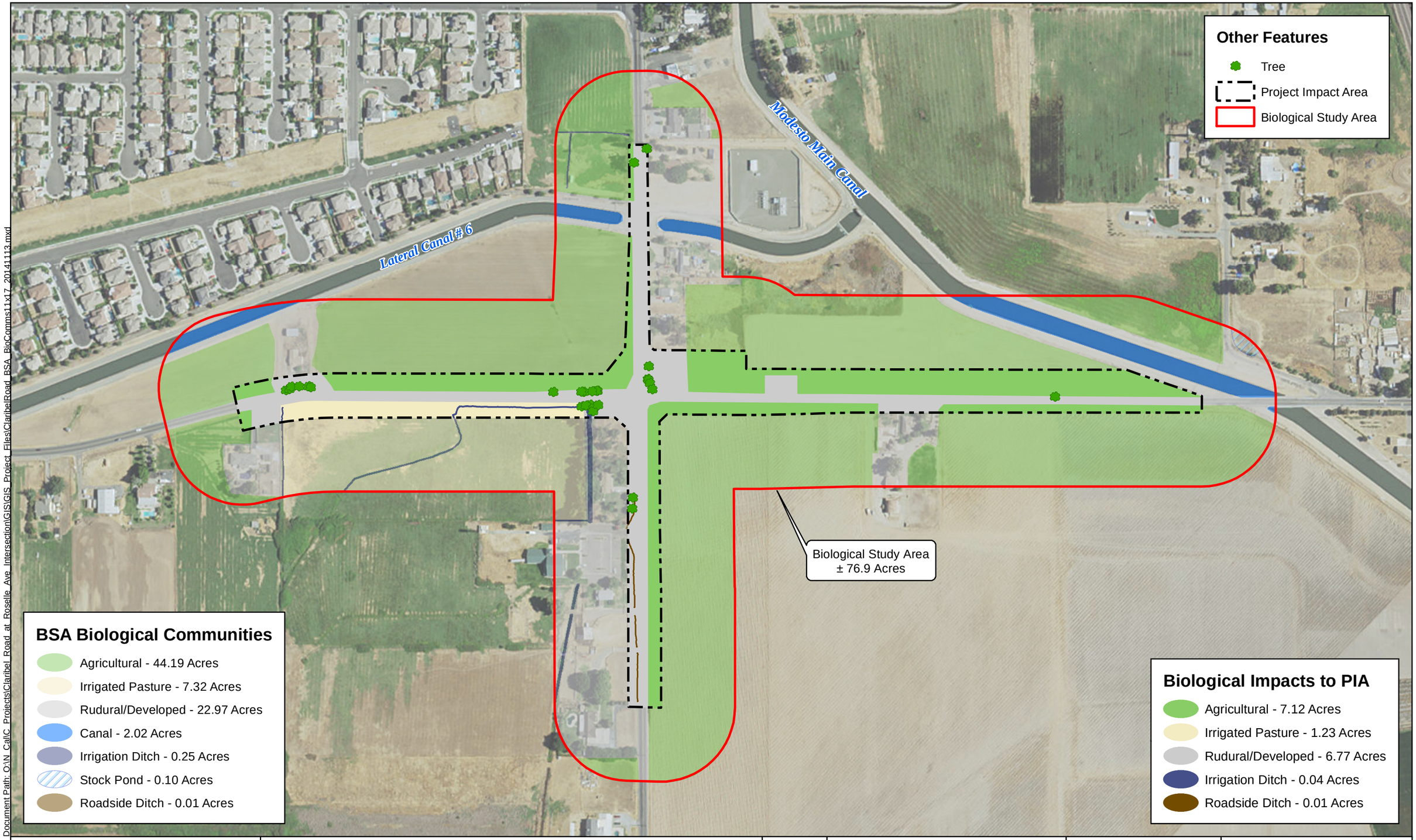

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BIOLOGICAL COMMUNITIES WITHIN THE BIOLOGICAL STUDY AREA

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0 300 600
Feet
1 inch = 300 feet

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Date: 07/21/2015

FIGURE 2

CLARIBEL ROAD

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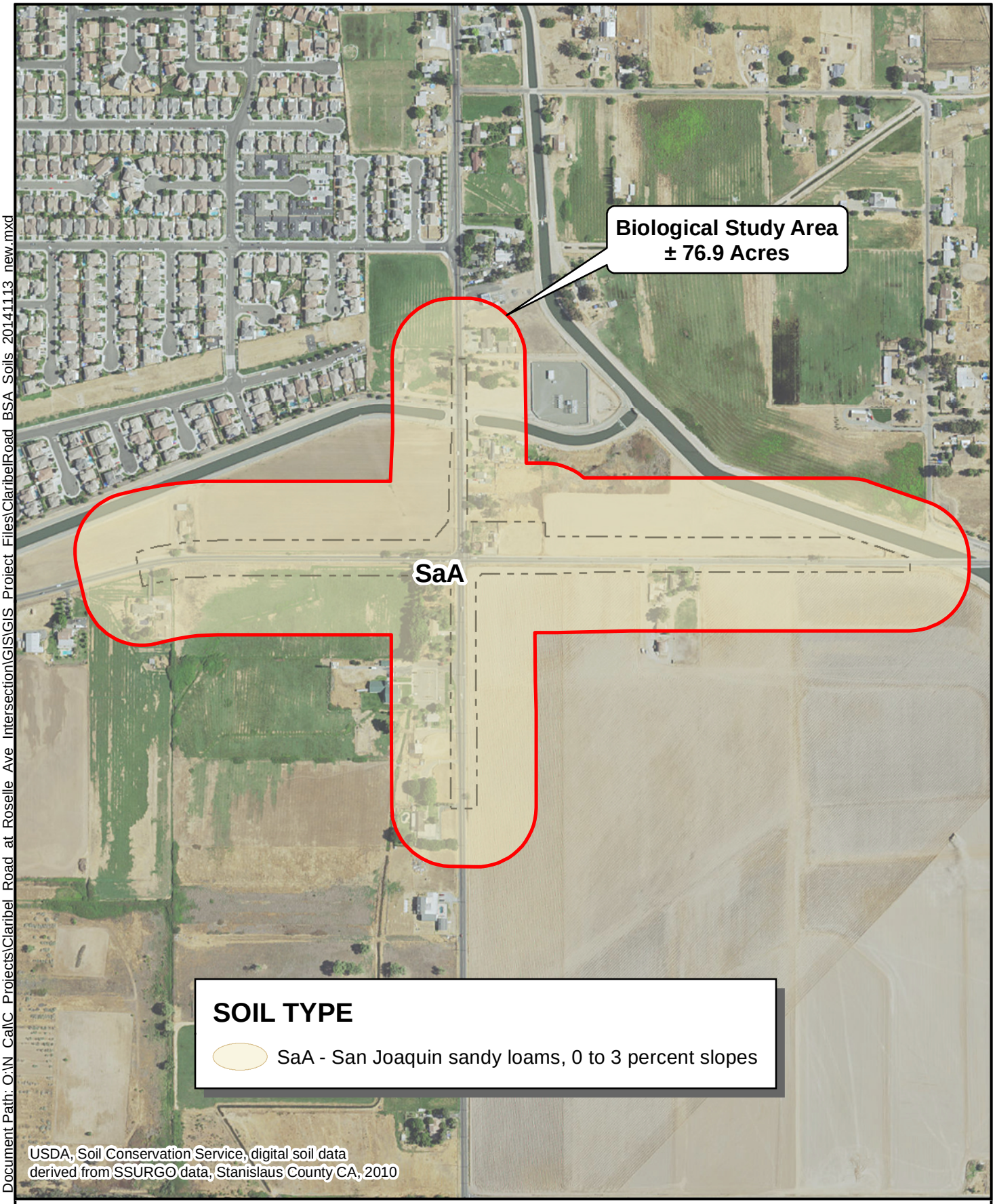

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SOIL TYPES WITHIN THE BIOLOGICAL STUDY AREA

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1 inch = 550 feet

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FIGURE 3

CLARIBEL ROAD

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3.4.2 Irrigated Pasture

Irrigated pasture occurs south of Claribel Road on the west side of the BSA. Dominant species include deer grass (*Muhlenbergia rigens*), rye grass (*Festuca perennis*), Johnson grass (*Sorghum halepense*), lamp rush (*Juncus effusus*), ripgut brome, soft brome, and barley.

3.4.3 Ruderal/Developed

Ruderal/developed includes residential, agricultural, and commercial development including ornamental landscaping, mowed lawns, paved parking lots and roads, and graded levee roads. Ruderal vegetation includes wild oat, filaree, ripgut brome, soft brome, barley, and hairy geranium (*Geranium molle*). Ornamental landscape trees include eucalyptus (*Eucalyptus* sp.), coast redwood (*Sequoia sempervirens*), Italian cypress (*Cupressus sempervirens*), edible fig (*Ficus carica*), locust (*Robinia* sp.), and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*).

3.4.4 MID Lateral Canal and MID Main Canal

The MID Lateral Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal that flows east to west beneath Roselle Avenue within the northern and northwestern portions of the BSA. The MID Main Canal is an approximately 40-foot wide concrete-lined, manmade irrigation canal that crosses through the northeastern portion of the BSA. The MID Lateral and Main Canals lack vegetation and did not contain water at the time of the November 10, 2014 survey. The MID Lateral and Main Canals are manmade features constructed to transport irrigation water for agricultural purposes. The canals are cement-lined irrigation canals that were constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and are therefore not considered jurisdictional under Section 404 of the CWA. Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the USACOE. Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features are, therefore, not considered jurisdictional waters of the U.S.

3.4.5 Roadside Ditch

Five approximately 1.0-foot wide roadside ditches occur along the west side of Roselle Avenue. These are manmade features that collect stormwater runoff from Roselle Road. There are no culverts beneath the driveways. Any water that enters the roadside ditches ponds within the ditches until it evaporates or percolates into the ground. Dominant vegetation includes Johnson's grass, filaree, and lamp rush. These roadside ditches are not considered jurisdictional because they are excavated wholly in, drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

3.4.6 Irrigation Ditch

Irrigation ditches occur within the northwest and southwest portions of the BSA. These are unlined, channelized, manmade features that were constructed to transport irrigation water. All of the irrigation ditches are approximately 1.0-foot wide except for an approximately 10-foot wide irrigation ditch located in the central portion of the BSA. The culvert on the north side of Claribel Road is likely buried. The irrigation ditch initiates south of Claribel Road, continues south, is culverted beneath a property, continues south, and exits the BSA. Ornamental landscape trees occur along the banks of the irrigation ditch to the north of the property, but the irrigation ditch lacks overstory vegetation to the south of the property. Ornamental landscape trees include liquid amber (*Liquidambar styraciflua*), white mulberry (*Morus alba*), eucalyptus, and Fremont cottonwood. Dominant herbaceous species within the irrigation ditches include ryegrass, wild oat, soft brome, barley, and deer grass. As with the MID Lateral and Main Canals, discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the U.S.

3.4.7 Stock Pond

A stock pond occurs within the northeastern portion of the BSA. Dominant vegetation includes: willow (*Salix* sp.), curly dock (*Rumex crispus*), and Himalayan blackberry (*Rumex armeniacus*). This feature may be considered a potentially jurisdictional wetland.

3.5 Wildlife and Wildlife Corridors

The BSA provides low quality habitat for most wildlife species because of the overall lack of vegetation cover and the high levels of disturbed and developed areas. Species observed foraging within the BSA include western scrub jay (*Aphelocoma californica*), tree swallow (*Tachycineta bicolor*), and mourning dove (*Zenaida macroura*). Several ornamental landscape trees are present within the BSA, including coast redwood, Fremont cottonwood, locust, eucalyptus, and edible fig that could provide nest sites for migratory birds and raptors.

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat, such as when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs. The BSA is not part of a major or local wildlife corridor/travel routes because it does not connect two significant habitats. The BSA consists of two existing paved roads surrounded by residential and commercial development and agricultural land that is subject to ongoing manmade manipulation. In addition, the MID Lateral Canal crosses beneath Roselle Road, which also acts as a barrier to wildlife dispersal.

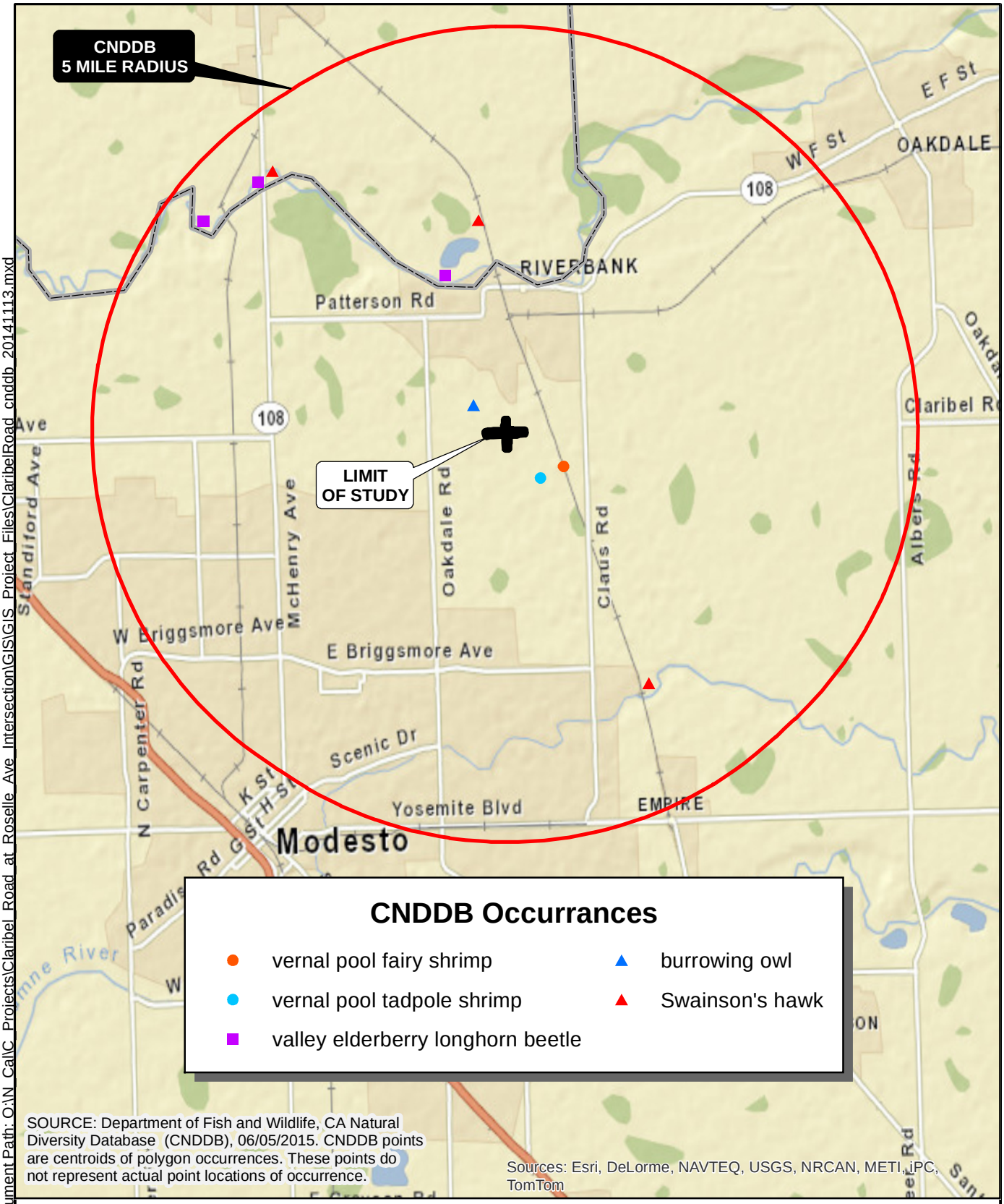
3.6 Regional Species and Habitats of Concern

The biological communities present within the BSA are common throughout the local area and region. There are no natural plant communities present within the BSA.

A review of regionally occurring special-status species was compiled based on the USFWS (2016) list of federally-listed species with the potential to occur within the BSA (**Appendix B**), CNDDB (CDFW 2016) queries of special-status species documented on the *Riverbank* quadrangle and eight surrounding quadrangles (*Avena, Escalon, Oakdale, Salida, Waterford, Brush Lake, Ceres*, and *Denair*) (**Appendix C**), and CNPS Ranking List (2016) of special-status plants on the *Riverbank* quadrangle and eight surrounding quadrangles (**Appendix D**).

Table 1 below identifies the special-status species based on the database searches, along with their listing status, habitat requirements, and a rationale as to whether the species would potentially occur within the BSA. The majority of the special-status species do not have the potential to occur within the BSA due to lack of suitable habitat. A CNDDB map of special-status species recorded within five miles of the BSA is provided in **Figure 4**.

No critical habitat is designated within the BSA.



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CNDDB OCCURRENCES WITHIN FIVE MILES OF THE BIOLOGICAL STUDY AREA

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N

0 1 2
SCALE IN MILES

Drawn By: MUB
Date: 07/21/2015

FIGURE 4

CLARIBEL ROAD

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Table 1 — Regionally Occurring Special-Status Species

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence with the BSA
Plants			
Beaked clarkia *Clarkia rostrata*	--; --; --; 1B	Annual herb found in cismontane woodland and valley and foothill grassland from 50 to 500 meters (164 to 1,640 feet) above MSL.	**No**; the BSA does not provide for this species.
Colusa grass *Neostapfia colusana*	FT; CE; --; 1B	Annual herb found in vernal pools that are occasionally large on adobe soils, from 5 to 200 meters (16 to 656 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Greene's tuctoria *Tuctoria greenei*	FE; CR; --; 1B	Annual herb found in vernal pools from 30 to 1,070 meters (98 to 3,510 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Heartscale *Atriplex cordulata* var. *cordulata*	--; --; --; 1B	Annual herb found on saline or alkaline soils on chenopod scrub, meadows and seeps, and valley and foothill grassland that are occasionally sandy, from 1 to 375 meters (3 to 1,230 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Legenere *Legenere limosa*	--; --; --; 1B	Annual herb found in vernal pools from 1 to 880 meters (3 to 2,887 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Parry's rough tarplant *Centromadia parryi* ssp. *rudis*	--; --; --; 4	Annual herb found alkaline, vernally mesic, seeps, sometimes roadsides, in valley and foothill grassland and vernal pools from 0 to 100 meters (3 to 328 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Prairie wedge grass *Sphenopholis obtusata*	--; --; --; 2B	Perennial herb found in mesic areas of cismontane woodland and meadows and seeps from 300 to 2,000 meters (984 to 6,562 feet) above MSL.	**No**; the BSA is outside of the elevation range for this species.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT; CE; --; 1B	Annual herb found in vernal pools from 10 to 750 meters (33 to 2,461 feet) above MSL.	**No**; the BSA does not provide habitat for this species.
Subtle orache *Atriplex subtilis*	--; --; --; 1B	Annual herb found in valley and foothill grassland from 40 to 100 meters (131 to 328 feet) above MSL.	**No**; the BSA does not provide habitat for this species.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence with the BSA
Wildlife			
Invertebrates			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; --; --	Elderberry shrubs (*Sambucus* sp.) usually associated with riparian areas.	**No**; the BSA does not provide habitat for this species, given that no elderberry shrubs occur within the BSA.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	**No**; the BSA does not provide habitat for this species.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	**No**; the BSA does not provide habitat for this species.
Amphibians/Reptiles			
California red-legged frog *Rana aurora draytonii*	FT; CSC; --; --	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 1,500 meters (3 to 4,921 feet) above MSL. Believed extirpated from the Central Valley floor since 1970s.	**No**; the BSA does not provide habitat and occurs outside of the known geographical range for this species.
California tiger salamander *Ambystoma californiense*	FT; CT; --; --	Ponded water required for breeding. Adults spend summer in small mammal burrows.	**No**; the BSA does not provide habitat for this species.
Giant garter snake *Thamnophis gigas*	FT; CT; --; --	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March). Extant populations occur in Sacramento, Sutter, Butte, Colusa, and Glenn counties; along the western border of the Yolo Bypass in Yolo County; and along the eastern fringes of the Sacramento-San Joaquin Delta from the Laguna Creek-Elk Grove region of central Sacramento County southward to the Stockton area of San Joaquin	**No**; the BSA occurs outside of the known geographic range for this species.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence with the BSA
		County.	
Western pond turtle *Emys marmorata*	--; CSC; --; --	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	**Low**; the irrigation ditches, the stock pond, and the MID Lateral Canal provide aquatic habitat for this species.
Fish			
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT; CT; --; --	Spawning occurs in large deep pools in tributaries with moderate velocities.	**No**; the BSA does not provide habitat for this species. There is no riparian cover or deep pools in the cement-lined irritation canal. There are several irrigation barriers for water delivery within the canal. Salmonids/steelhead does not occur in the MID Lateral Canal.
Central Valley steelhead *Oncorhynchus mykiss*	FT, CH; --; --; --	Found in cool, clear, fast-flowing permanent streams and rivers with riffles and ample cover from riparian vegetation or overhanging banks. Spawning occurs in streams with pool and riffle complexes.	**No**; the BSA does not provide habitat for this species. There is no riparian cover or deep pools in the cement-lined irritation canal. There are several irrigation barriers for water delivery within the canal. Salmonids/steelhead does not occur in the MID Lateral Canal.
Central Valley winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE; CE; --; --	Returns to the Upper Sacramento River in the winter but delay spawning until spring and summer. Juveniles spend 5-9 months in the river and estuary before entering the ocean.	**No**; the BSA does not provide habitat for this species. There is no riparian cover or deep pools in the cement-lined irritation canal. There are several irrigation barriers for water delivery within the canal. Salmonids/steelhead does not occur in the MID Lateral Canal.
Delta smelt *Hypomesus transpacificus*	FT; CT; --; --	Found in estuarine waters. Majority of life span is spent within the freshwater outskirts of the mixing zone (saltwater-freshwater interface) within the Delta.	**No**; the BSA does not provide habitat for this species.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence with the BSA
Hardhead *Mylopharodon conocephalus*	--; CSC; --; --	Found in freshwater in Sacramento-San Joaquin and Russian River drainages.	**No**; the BSA does not provide habitat for this species.
Birds			
Burrowing owl *Athene cunicularia*	--; CSC; --; -- (burrowing sites and some wintering sites)	Yearlong resident of open, dry grassland and desert habitats, as well as in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine.	**Low**; the agricultural land provides habitat for this species.
Swainson's hawk *Buteo swainsoni*	--; CT; --; -- (Nesting and foraging)	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations.	**Low**; the trees within the ruderal/developed areas and the agricultural land and ruderal/developed areas provide nesting and foraging habitat for this species.
Tricolored blackbird *Agelaius tricolor*	--; CE; --; -- (nesting colony) (until June 30, 2015 when emergency listing expires)	Nest in large flocks, with greater than 50 breeding pairs, in dense vegetation near water or by emergent wetlands.	**No**; the BSA does not provide nesting habitat for this species.
Yellow-breasted chat *Icteria virens*	--; CSC; --; -- (nesting colony)	Nests in dense riparian habitats.	**No**; the BSA does not provide habitat for this species.
Migratory birds and other birds of prey [1]	MBTA and §3503.5 Department of Fish and Game Code	Nests in a variety of communities including cismontane woodland, mixed coniferous forest, chaparral, montane meadow, riparian, and urban communities.	**High**; the irrigated pasture and the trees within the agricultural land and ruderal/developed areas provide nesting and foraging habitat for this species.
Mammals			
Townsend's big-eared bat *Corynorhinus townsendii*	--; CT; CSC; --; --	Uses caves, buildings, and tree cavities for day roosts. Maternity and hibernation colonies typically are in caves and mine tunnels.	**Low**; the trees within the BSA provide day or night roosts for this species.

[1] Migratory birds include: bald eagle *(Haliaeetus leucocephalus*), black rail (*Laterallus jamaicensis*), Costa's hummingbird (*Calypte costae*), fox sparrow (*Passerella iliaca*), Lewis's woodpecker (*Melanerpes lewis*), loggerhead shrike (*Lanius ludovicianus*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), mountain plover (*Charadrius montanus*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), peregrine falcon (*Falco peregrinus*), short-eared owl (*Asio flammeus*), Williamson's sapsucker (*Sphyrapicus thyroideus*), and yellow-billed magpie (*Pica nuttalli*) (USFWS 2016).

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Potential for Occurrence with the BSA
Western mastiff bat *Eumops perotis californicus*	--; CSC; --; --	Found in rugged, rocky areas where suitable crevices are available for day-roosts. Day-roosts are located in large cracks in exfoliating slabs of granite or sandstone, cliff faces, high buildings, trees, and tunnels.	**No**; the BSA does not provide habitat for this species.
Western red bat *Lasiurus blossevillii*	--; CSC; --; --	Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests.	**No**; the BSA does not provide habitat for this species.

Federally-Listed Species:		**California State Listed Species:**	**CNPS* Rank Categories:**
FE = federal endangered	PT = proposed threatened	CFP = California fully protected	1A = plants presumed extinct in California
FT = federal threatened	FPD = proposed for delisting	CE = California state endangered	1B = plants rare, threatened, or endangered in California and elsewhere
FC = candidate	FD = delisted	CT = California state threatened	2 = plants rare, threatened, or endangered in California, but common elsewhere
CH = Critical Habitat		CR = California state rare	3 = plants about which we need more information
Source: Foothill Associates		CSC = California species of special concern	4 = plants of limited distribution

4.0 RESULTS: BIOLOGICAL RESOURCES, DESCUSSION OF IMPACTS AND MITIGATION

This section identifies species with the potential to occur, potential impacts, and avoidance and minimization measures. The project would impact the following biological communities: approximately 7.12 acres of agricultural land, 1.23 acres of irrigated pasture, 6.77 acres of ruderal/developed area, 0.04 acre of irrigation ditch, and 0.01 acre of roadside ditch. Impacts to biological communities are provided in **Figure 2**.

4.1 Natural Communities of Special Concern

Under CEQA, a project that substantially adversely affects any riparian habitat or other sensitive natural community (SNC) identified in local or regional plans, policies, regulations, or by CDFW or USFWS, will have an impact on the environment. For this NES, the term "sensitive natural community" includes those communities that, if eliminated or substantially degraded, would sustain a significant adverse impact as defined under CEQA. These community types are important, as further degradation and destruction threatens these community types as well as associated populations of dependent plant and wildlife species and significantly reduces their regional distribution and viability. The CDFW (2016) identifies the following SNC within five miles of the PIA: Northern Hardpan Vernal Pool. However, no designated SNC occurs within the BSA.

4.2 Special-Status Plant Species

As discussed previously, the BSA has been substantially altered for agricultural, residential, and commercial purposes and the majority of native vegetation has been removed. What vegetation is present consists primarily of non-native weedy and invasive species. Because there are no natural communities present, there is *no* suitable habitat present to support special-status plant species.

4.3 Special-Status Animal Species

Based on the disturbed habitat types present within the BSA and lack of seasonal wetlands and vernal pools, few special-status animal species have the potential to occur within the BSA. The following special-status species have the potential to occur within the BSA: western pond turtle, burrowing owl, migratory birds and other bird of prey, Swainson's hawk, and Townsend's big-eared bat.

4.3.1 Western Pond Turtle

Western pond turtle is a California Species of Special Concern. Western pond turtles require slow moving perennial aquatic habitats with suitable basking sites. Western pond turtles occasionally inhabit irrigation ditches. Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Western pond turtles utilize grassland as upland habitat in the vicinity of the aquatic habitat. There are no CNDDB records documented within five miles of the BSA (**Figure 4**) (CDFW 2016).

Survey Results

No western pond turtles were observed within the BSA during the biological survey, but marginally suitable aquatic habitat occurs within the stock pond, the MID Lateral Canal, and the irrigation ditches. The BSA only provides marginally suitable aquatic habitat because the irrigation canal is cement-lined and lacks dense emergent vegetation necessary to provide cover. In addition, the irrigation ditches lacked water at the time of the survey. The BSA does not provide upland habitat for this species. However, western pond turtle *could* occur within the BSA.

Avoidance and Minimization Efforts

Project implementation could result in direct impacts to western pond turtle by destroying an individual, if present, during in-stream construction activities. Direct impacts could impact individuals of the species, if present, during construction activities in the vicinity of the MID Lateral Canal, the stock pond, and the irrigation ditches. One or more of the following measures shall be implemented to avoid or minimize potential project impacts to western pond turtle:

- A Qualified Biologist should conduct an environmental awareness training to all construction personnel. The training should include identification of special-status species, required practices before the start of construction, general measures that are being implemented to conserve the species as they relate to the project, penalties for non-compliance, and boundaries of the PIA and of the permitted disturbance zones. Supporting materials containing training information should be prepared and distributed. Upon completion of training, all construction personnel should sign a form stating that they have attended the training and understand all the measures. Proof of this instruction should be kept on file with the project proponent. The project proponent should provide the CDFW with a copy of the training materials and copies of the signed forms by project staff indicating that training has been completed within 30 days of the completion of the first training session. Copies of signed forms should be submitted monthly as additional training occurs for new employees. The crew foreman should be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. If new construction personnel are added to the site, the crew foreman should ensure that the personnel receive the mandatory training before starting work.

- A Qualified Biologist should conduct a pre-construction western pond turtle survey within 14 days prior to commencement of construction activities. The Qualified Biologist should document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no western pond turtles are identified during the pre-construction survey, then no further avoidance or minimization measures are recommended.

- If a western pond turtle is observed within the PIA during the pre-construction survey, a Qualified Biological Monitor should be onsite during the initial instream work to ensure that no western pond turtles are present. The Qualified Biological Monitor should document and submit the results of the monitoring event in a letter to the County and the CDFW within 30 days following the monitoring event.

Project Impacts

By implementing one or more of the avoidance measures discussed above, no impacts to western pond turtles will occur as a result of the project.

Compensatory Mitigation

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

Cumulative Impacts

No cumulative impacts to western pond turtle will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.3.2 Burrowing Owl

Burrowing owl is a California Species of Special Concern. Burrowing owls typically occupy open, dry, sparsely vegetated habitats including grasslands and agricultural fields. Burrow availability is a critical feature of suitable habitat. Burrowing owls utilize existing burrows excavated by other animals, typically ground squirrels (*Otospermophilus beecheyi*). In areas where burrows are scarce, they can use pipes, culverts, debris piles, and other artificial structures (Center for Biological Diversity *et al.* 2003). The nearest CNDDB record for this species is approximately 0.3 miles northwest of the BSA (**Figure 4**) (CDFW 2016).

Survey Results

No burrowing owls or burrows were observed within the BSA during the biological survey, but marginally suitable habitat is present within the agricultural fields. Burrowing owl *could* occur within the BSA.

Avoidance and Minimization Efforts

Project implementation could result in temporary indirect and direct impacts to burrowing owl. Temporary indirect impacts could result from the movement of equipment and workers. Direct impacts could result from destruction of occupied burrows and disturbance during construction, potentially resulting in abandonment of occupied burrows and nests and subsequent mortality of chicks and eggs. One or more of the following measures shall be implemented to avoid or minimize potential project impacts on burrowing owl:

- A Qualified Biologist should conduct an environmental awareness training to all construction personnel. The training for burrowing owl should be similar to the training described for western pond turtle.

- A Qualified Biologist should conduct a pre-construction take avoidance survey no less than 14 days prior to initiating ground disturbance using the recommended methods described in the "Detection Surveys Section" in Appendix D of the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If no burrowing owls or signs of burrowing owls are detected in the vicinity of the BSA during the pre-construction survey, a letter report documenting survey methods and findings should be submitted to the County and the CDFW, and no further avoidance or minimization measures are recommended.

- If burrowing owls are detected, no-construction buffers and timing on page 9 of the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) should be followed unless a Qualified Biologist verifies through non-invasive methods 1) that the birds have not begun egg laying and incubation, 2) that juveniles from the occupied burrows are capable of independent survival (i.e., foraging independently), or 3) that a reduced buffer is appropriate based on a site-specific evaluation. In addition, high visibility construction fencing should be established around the buffer zone, if feasible. Buffer diameters identified below and outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) are as follows:

Table 2 — Diameter Buffers for Burrowing Owl

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting Sites	April 1-Aug 15	356 feet (200 meters)	1,640 feet (500 meters)	1,640 feet (500 meters)
Nesting Sites	Aug 16-Oct 15	356 feet (200 meters)	356 feet (200 meters)	1,640 feet (500 meters)
Nesting Sites	Oct 16-Mar 31	164 feet (50 meters)	329 feet (100 meters)	1,640 feet (500 meters)

- If the buffers specified above are infeasible, then a Qualified Biologist should conduct a site evaluation to determine whether impacts can be avoided with implementation of additional measures. If the Qualified Biologist determines that measures can be established to avoid impacts to burrowing owls, the Qualified Biologist should develop a mitigation plan through consultation with the CDFW including, but not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.

Project Impacts

By implementing one or more of the avoidance measures discussed above, no impacts to burrowing owls will occur as a result of the project.

Compensatory Mitigation

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

Cumulative Impacts

No cumulative impacts to burrowing owls will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.3.3 Migratory Birds and other Bird of Prey

All raptors, including common species not considered special-status, are protected under the California Fish and Game Code (Section 3503.5). Removal or destruction of an active raptor nest is considered a violation of the Fish and Game Code. In addition, migratory birds are protected under the MBTA of 1918 (16 U.S.C 703-711). 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).

Survey Results

No active nests were observed during the biological survey. The agricultural fields in the BSA provide foraging and nesting habitat to ground nesting birds and the landscape trees within the BSA provide suitable nesting habitat for raptors and migratory birds. Trees occur within the PIA.

Avoidance and Minimization Efforts

Project implementation could result in temporary direct and indirect impacts to migratory birds and other birds of prey. Trees potentially will be removed as a result of the project, therefore, tree removal and/or vegetation clearing and grading associated with construction activities could disturb nesting migratory birds and other birds of prey, if they are present in the landscape trees or agricultural land within 250 feet of the PIA. Nest abandonment could result in mortality of chicks or eggs. The following measures shall be implemented to avoid or minimize potential project impacts on nesting migratory birds and other birds of prey:

- A Qualified Biologist should conduct an environmental awareness training to all construction personnel. The training for active nests should be similar to the training described for western pond turtle.

- If feasible, any trees anticipated for removal should be completed outside of the nesting season (September 1 through February 14). The nesting season is from February 15 through August 31.

- A Qualified Biologist shall conduct a pre-construction nesting migratory bird and raptor survey within 14 days prior to commencement of construction activities and tree removal, if anticipated to commence during the nesting season (between February 15 and August 31). The Qualified Biologist shall document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are required.

- If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist shall establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone, if feasible. No trees anticipated for removal shall be removed until the Qualified Biologist determines that the nest is no longer occupied. The Qualified Biologist should recommend, if applicable, additional measures based on existing site conditions. Measures may include, but are not limited to, the installation of visual screens between the nest and construction activities and/or the implementation of biological monitoring during construction activities.

Project Impacts

By implementing one or more of the avoidance measures discussed above, no impacts to migratory birds and other birds of prey will occur as a result of the project.

Compensatory Mitigation

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

Cumulative Impacts

No cumulative impacts to migratory birds and other birds of prey will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.3.4 Swainson's Hawk

Swainson's hawk is listed as a state-threatened species. Swainson's hawk nests in large trees, primarily valley oak (*Quercus lobata*), cottonwood (*Populus* sp.), and willow (*Salix* sp.), and mostly nests in the Central Valley in areas located in remnant riparian habitat along drainages. Swainson's hawks also nest in small groves, roadside trees, and isolated trees.

The CDFW considers five or more vacant acres within ten miles of an active nest within the last five years to be significant foraging habitat for Swainson's hawk, the conversion of which to urban uses is considered a significant impact and requires mitigation, in accordance with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk in the Central Valley of California* (CDFW 1994; Staff Report). There are six CNDDB occurrences within 10 miles of the BSA. The nearest CNDDB record is approximately 2.5 miles north of the BIA (**Figure 4**). None of the occurrences were documented within the last five years. Therefore, no mitigation is required for the removal of foraging habitat.

Survey Results

No Swainson's hawks were observed during the biological survey of the BSA. The landscape trees within the BSA provide potential nest sites. Landscape trees occur within the PIA. The agricultural fields within the BSA provide foraging habitat. Swainson's hawk *could* occur within the BSA.

Avoidance and Minimization Efforts

Project implementation could result in temporary direct and indirect impacts to Swainson's hawk. Although it is unlikely that the trees anticipated for removal provide suitable nesting habitat, other landscape trees within ¼ mile of the PIA provide nesting habitat. Therefore, construction associated with road work could disturb nesting Swainon's hawk, if they are present in the landscape trees within the BSA and other large trees within ¼ mile of the BSA. Nest abandonment could result in mortality of chicks or eggs. The following measures shall be implemented to avoid and minimize potential project impacts on Swainson's hawk:

- A Qualified Biologist should conduct an environmental awareness training to all construction personnel. The training for active Swainson's hawk nests should be similar to the training described for western pond turtle.

- Prior to the commencement of construction activities during the nesting season for Swainson's hawk (between March 1 and September 15), a Qualified Biologist shall conduct a minimum of two (2) protocol level pre-construction surveys during the recommended survey periods for the nesting season that coincides with the commencement of construction

activities, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The Qualified Biologist shall conduct surveys for nesting Swainson's hawk within 1//4 mile of the PIA where legally permitted. The Qualified Biologist will use binoculars to visually determine whether Swainson's hawk nests occur within the ¼-mile survey area if access is denied on adjacent properties. If no active Swainson's hawk nests are identified on or within ¼ mile of the BSA within the recommended survey periods, a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the final survey, and no further avoidance and minimization measures for nesting habitat are required.

- If active Swainson's hawk nests are found within ¼ mile of construction activities, the Qualified Biologist shall contact the County and the CDFW within one day following the pre-construction survey to report the findings. For the purposes of this avoidance and minimization requirement, construction activities are defined to include heavy equipment operation associated with construction (use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging within ¼ mile of a nest site between February 15 and August 31. Should an active nest be present within ¼ mile of construction areas, then the CDFW shall be consulted to establish an appropriate noise buffer, develop take avoidance measures, determine whether high visibility construction fencing should be erected around the buffer zone, and implement a monitoring and reporting program prior to any construction activities occurring within ¼ mile of the nest. Should the Qualified Biologist determine that the construction activities are disturbing the nest, the Qualified Biologist shall halt construction activities until the CDFW is consulted. The construction activities shall not commence until the CDFW determines that construction activities would not result in abandonment of the nest site. Should the Qualified Biologist determine that the nest has not been disturbed during construction activities within the buffer zone, then a letter report summarizing the survey results shall be submitted to the County and the CDFW within 30 days following the final monitoring event, and no further avoidance and minimization measures for nesting habitat are required.

Project Impacts

By implementing one or more of the avoidance measures discussed above, no impacts to Swainson's hawk will occur as a result of the project.

Compensatory Mitigation

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

Cumulative Impacts

No cumulative impacts to Swainson's hawk will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.3.5 Townsend's Big-Eared Bat

Townsend's big-eared bat is a California Species of Special Concern. This species night roosts in caves, buildings, and hollow tree cavities. Maternity and hibernation colonies are conducted in caves and mine tunnels (Nature Serve 2015).

Survey Results

No bats or active roosts were observed during the biological survey of the BSA. If cavities are present within the ornamental landscape trees, these trees could provide roosting habitat for this species. Therefore, Townsend's big-eared bat *could* occur within the BSA.

Avoidance and Minimization Efforts

Project implementation could result in temporary direct impacts to roosting bats. Trees potentially will be removed as a result of the project, therefore, tree removal could disturb roosting bats if they are present in the landscape trees anticipated to be removed. The following measures should be implemented to avoid and minimize potential project impacts Townsend's big-eared bat:

- A Qualified Biologist should conduct an environmental awareness training to all construction personnel. The training for active Townsend's big-eared bats should be similar to the training described for western pond turtle.

- A Qualified Biologist should conduct a pre-construction roosting bat survey within 14 days prior to commencement of tree removal. The Qualified Biologist should document and submit the results of the pre-construction survey in a letter to the County and the CDFW within 30 days following the survey. If no active nests are identified during the pre-construction survey, then no further avoidance and minimization measures are recommended.

- If any active nests are identified during the pre-construction survey within the BSA, a Qualified Biologist should establish an appropriate buffer zone around the nests through consultation with the CDFW. High visibility construction fencing should be installed around the buffer zone, if feasible. No trees anticipated for removal should be removed until the Qualified Biologist determines that the bat is no longer occupying the tree.

Project Impacts

By implementing one or more of the avoidance measures discussed above, no impacts to Townsend's big-eared bat will occur as a result of the project.

Compensatory Mitigation

No compensatory mitigation will be required due to the implementation of the avoidance measures discussed above.

Cumulative Impacts

No cumulative impacts to Townsend's big-eared bat will occur as a result of the project due to the implementation of the avoidance measures discussed above.

4.4 Invasive Plant Species

Project implementation could result in the potential spread of invasive species by the entering and exiting of construction equipment contaminated by invasive plants, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species.

5.0 RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

5.1 Federal Endangered Species Act Consultation Summary

No Section 7 consultation is required, since no federally-listed special-status species have the potential to occur within the BSA.

5.2 Federal Fisheries and Essential Fish Habitat Consultation Summary

No special-status fish species, critical habitat for federally-listed fish species, or Essential Fish Habitat occur within the BSA.

5.3 Wetlands and Other Waters Coordination Summary

The CDFW's jurisdiction extends from the top of bank to the opposite top of a naturally occurring bank on these features, or to the limits of riparian vegetation if this vegetation extends beyond the top of the banks. Wetlands need to meet only one of the three U.S Army Corps of Engineers criteria (wetland vegetation, wetland hydrology, and/or hydric soils) to be considered CDFW jurisdictional wetlands. Under Section 1600 of the California Fish and Game Code, CDFW's jurisdiction includes "…bed, channel or bank of any river, stream, or lake designated by the CDFW in which there is any time an existing fish or wildlife resource or from which these resources derive benefit…" Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation or stream dependent terrestrial benefit (Cylinder *et al.* 1995; 2004). Because the MID Lateral and Main Canals lack riparian vegetation or stream dependent terrestrial benefit, a Section 1600 Streambed Alteration Agreement is not applicable to these features. However, if the project results in impacts to the bed and banks of the approximately 10-foot wide irrigation ditch located on the west side of Roselle Avenue and on the south side of Claribel Road, a Section 1600 Streambed Alteration Agreement would be required.

The project will not affect the MID Main Canal. Although the project will affect the MID Lateral Canal, an aquatic feature, the feature is a manmade, cement-lined irrigation canal that was constructed in uplands contrary to natural drainage patterns in order to transport irrigation water, and is therefore not considered jurisdictional under Section 404 of the CWA. Regulatory Guidance Letter 2007-02 states that canals whose purpose is to convey irrigation water to fields and from fields are generally not jurisdictional. Under Section 404(f)(1)(C) of the CWA (see also 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material associated with construction or maintenance of irrigation ditches are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (i.e., these activities are exempt from the need to obtain a Section 404 permit from the USACOE. Discharges of dredged or fill material associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. If the proposed project would result in impacts to potentially jurisdictional waters of the U.S., then a formal delineation is required.

Two unlined, channelized, manmade irrigation ditches would be impacted by the project. As with the MID Lateral and Main Canals, discharges of dredged or fill material associated with

siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant to and functionally related to irrigation ditches are included in the exemption for irrigation ditches. These features therefore, are unlikely to be considered jurisdictional waters of the United States.

The roadside ditches would be impacted by the project. The roadside ditches present within the BSA are not considered jurisdictional because they are excavated wholly in, drain only uplands, do not carry a relatively permanent flow of water, and are not tributaries to or have a significant nexus to downstream traditional navigable waters (USACOE, USEPA 2007).

A delineation would be required if the project would impact any of these aquatic features. A delineation is required to determine whether the USACOE will take jurisdiction of these features. If the USACOE determines that these features are jurisdictional, these features would be regulated by Sections 404 and 401 of the CWA. Should the project result in impacts to any waters of the U.S. and waters of the State, then a Section 404 permit would be required by the USACOE and a Section 401 Water Quality Certification would by required by the RWQCB prior to the issuance of a grading permit. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed would need to be replaced or rehabilitated on a "no-net-loss" basis in accordance with the USACOE mitigation guidelines.

If the USACOE verifies that the features are not jurisdictional, then these features may still be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act. Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

5.4 Invasive Plant Species

Several invasive plant species and noxious weeds are present within the disturbed non-native grassland and the ruderal/developed areas. Invasive plant and noxious weed species present in the BSA are identified in **Appendix A**. The following measures addressing invasive species abatement and eradication will be incorporated into the final project design and contract specifications:

- After construction, affected areas will be revegetated with plant species native to the vicinity and approved by a Caltrans Biologist.

- After construction, all revegetated areas will avoid the use of species listed in the Cal-IPC that have a high or moderate rating.

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Appendix A — Plants Observed within the Biological Study Area

Family Name	Scientific Name	Common Name	Native/ Non-Native
Asteraceae	*Carduus pycnocephalus* ssp. *pycnocephalus*	Italian thistle	I
Asteraceae	*Centaurea solstitialis*	Yellow star-thistle	I
Asteraceae	*Erigeron bonariensis*	Flax-leaved horseweed	I
Asteraceae	*Filago pyramidata* var. *pyramidata*	Broadleaf cottonrose	I
Chenopodiaceae	*Salsola tragus*	Russian thistle, tumbleweed	I
Cucurbitaceae	*Cucumis* sp.	Cucumber, melon	I
Cupressaceae	*Cupressus sempervirens*	Italian cypress	I
Cupressaceae	*Sequoia sempervirens*	Coast redwood	N
Cyperaceae	*Carex angustata*	Narrow-leaved sedge	N
Euphorbiaceae	*Croton setigerus*	Turkey-mullein	N
Fabaceae	*Robinia* sp.	Locust	--
Geraniaceae	*Erodium botrys*	Storksbill, filaree	I
Geraniaceae	*Geranium molle*	Cranesbill, geranium	I
Hamamelidales	*Liquidambar styraciflua*	Liquid amber	I
Juncaceae	*Juncus effusus*	Soft or lamp rush	N
Malvaceae	*Malva parviflora*	Cheeseweed, little mallow	I
Montiaceae	*Claytonia perfoliata*	Miner's lettuce	N
Moraceae	*Ficus carica*	Edible fig	I
Moraceae	*Morus alba*	White mulberry	I
Myrtaceae	*Eucalyptus* sp.	Eucalyptus, gum tree	I
Poaceae	*Aira caryophyllea*	Hairgrass	I
Poaceae	*Avena fatua*	Wild oat	I
Poaceae	*Bromus diandrus*	Ripgut brome	I
Poaceae	*Bromus hordeaceus*	Soft chess	I
Poaceae	*Festuca bromoides*	Brome fescue	I
Poaceae	*Festuca perennis*	Rye grass	I
Poaceae	*Muhlenbergia rigens*	Deer grass	N
Poaceae	*Sorghum halepense*	Johnson grass	I
Poaceae	*Triticum aestivum*	Wheat, goat grass	I
Polygonaceae	*Rumex crispus*	Curly dock	I
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
Salicaceae	*Populus fremontii* ssp. *fremontii*	Alamo or Fremont cottonwood	N
Salicaceae	*Salix* sp.	Willow	--
Typhaceae	*Typha* sp.	Cattail	--
Urticaceae	*Urtica dioica*	Stinging nettle	N
Verbenaceae	*Verbena* sp.	Vervain	--

Appendix B — USFWS List of Special-Status Species

IPaC **U.S. Fish & Wildlife Service**

My project Stanislaus County, California

This project potentially impacts **27 resources** managed or regulated by the U.S. Fish & Wildlife Service

Endangered species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

California Red-legged Frog Rana draytonii

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

California Tiger Salamander Ambystoma californiense

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Crustaceans

Vernal Pool Fairy Shrimp Branchinecta lynchi

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Vernal Pool Tadpole Shrimp Lepidurus packardi

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Fishes

Delta Smelt Hypomesus transpacificus

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Steelhead Oncorhynchus (=Salmo) mykiss

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Insects

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Reptiles

Giant Garter Snake Thamnophis gigas

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS IN THIS LOCATION

Migratory birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus

Year-round

Black Rail Laterallus jamaicensis

Season: Breeding

Burrowing Owl Athene cunicularia

Year-round

Fox Sparrow Passerella iliaca
Season: Wintering

Lesser Yellowlegs Tringa flavipes
Season: Wintering

Lewis's Woodpecker Melanerpes lewis
Season: Wintering

Loggerhead Shrike Lanius ludovicianus
Year-round

Long-billed Curlew Numenius americanus
Season: Wintering

Marbled Godwit Limosa fedoa
Season: Wintering

Mountain Plover Charadrius montanus
Season: Wintering

Nuttall's Woodpecker Picoides nuttallii
Year-round

Oak Titmouse Baeolophus inornatus
Year-round

Peregrine Falcon Falco peregrinus
Season: Wintering

Short-eared Owl Asio flammeus
Season: Wintering

Swainson's Hawk Buteo swainsoni

Season: Breeding

Tricolored Blackbird Agelaius tricolor

Year-round

Western Grebe aechmophorus occidentalis

Season: Wintering

Williamson's Sapsucker Sphyrapicus thyroideus

Year-round

Yellow-billed Magpie Pica nuttalli

Year-round

Wildlife refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES IN THIS LOCATION

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local
U.S. Army Corps of Engineers District.

THERE ARE NO WETLANDS IN THIS LOCATION

Appendix C — CDFW CNDDB List of Special-Status Species

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Avena (3712171) OR Brush Lake (3712151) OR Ceres (3712058) OR Denair (3712057) OR Escalon (3712078) OR Oakdale (3712077) OR Riverbank (3712068) OR Salida (3712161) OR Waterford (3712067))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	674	8	None	None	G2G3	S1S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Marsh & swamp | Swamp | Wetland
Ambystoma californiense	California tiger salamander	Amphibians	AAAAA01180	1133	8	Threatened	Threatened	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Cismontane woodland | Meadow & seep | Riparian woodland | Valley & foothill grassland | Vernal pool | Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	135	1	None	None	G5	S4	null	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1875	2	None	None	G4	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland
Atriplex cordulata var. cordulata	heartscale	Dicots	PDCHE040B0	66	1	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub | Meadow & seep | Valley & foothill grassland
Atriplex subtilis	subtle orache	Dicots	PDCHE042T0	24	1	None	None	G1	S1	1B.2	BLM_S-Sensitive	Valley & foothill grassland
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	1	None	None	G4?	S1S2	null	IUCN_VU-Vulnerable	null
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	232	2	None	None	G3G4	S1S2	null	null	null
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	751	1	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland | Vernal pool | Wetland
Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	Birds	ABNJB05035	19	2	Delisted	None	G5T3	S2	null	null	Artificial standing waters | Sacramento/San Joaquin standing waters | Valley & foothill grassland
											BLM_S-Sensitive |	Great Basin

Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2394	16	None	Threatened	G5	S3	null	IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	grassland | Riparian forest | Riparian woodland | Valley & foothill grassland
Clarkia rostrata	beaked clarkia	Dicots	PDONA050Y0	74	1	None	None	G2G3	S2S3	1B.3	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Cismontane woodland | Valley & foothill grassland
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	619	1	None	Candidate Threatened	G3G4	S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	7	Threatened	None	G3T2	S2	null	null	Riparian scrub
Egretta thula	snowy egret	Birds	ABNGA06030	15	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp | Meadow & seep | Riparian forest | Riparian woodland | Wetland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1147	2	None	None	G3G4	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	293	1	None	None	G5T4	S3S4	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	84	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Lasiurus	western red										CDFW_SSC-Species of Special Concern |	Cismontane woodland | Lower montane

blossevillii	bat	Mammals	AMACC05060	119	2	None	None	G5	S3	null	IUCN_LC-Least Concern | WBWG_H-High Priority	coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	235	2	None	None	G5	S4	null	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Legenere limosa	legenere	Dicots	PDCAM0C010	78	1	None	None	G2	S2	1B.1	BLM_S-Sensitive	Vernal pool | Wetland
Lepidurus packardi	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	316	4	Endangered	None	G3	S2S3	null	IUCN_EN-Endangered	Valley & foothill grassland | Vernal pool | Wetland
Lytta moesta	moestan blister beetle	Insects	IICOL4C020	12	2	None	None	G2	S2	null	null	Valley & foothill grassland
Mylopharodon conocephalus	hardhead	Fish	AFCJB25010	32	4	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	260	2	None	None	G5	S4	null	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Neostapfia colusana	Colusa grass	Monocots	PMPOA4C010	62	1	Threatened	Endangered	G2	S2	1B.1	null	Vernal pool | Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	1	None	None	G3	S3.1	null	null	Vernal pool | Wetland
Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	3	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic | Sacramento/San Joaquin flowing waters
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Monocots	PMPOA4G060	45	2	Threatened	Endangered	G1	S1	1B.1	null	Vernal pool | Wetland
Sphenopholis obtusata	prairie wedge grass	Monocots	PMPOA5T030	19	1	None	None	G5	S2	2B.2	null	Cismontane woodland | Meadow & seep | Wetland
Tuctoria greenei	Greene's tuctoria	Monocots	PMPOA6N010	48	2	Endangered	Rare	G1	S1	1B.1	null	Vernal pool | Wetland

Appendix D — CNPS List of Special-Status Species

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

9 matches found. Click on scientific name for details

Search Criteria

Found in 9 Quads around 37120F8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	1B.2	S1	G1
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	4.2	S3	G3T3
Clarkia rostrata	beaked clarkia	Onagraceae	annual herb	1B.3	S2S3	G2G3
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1	S2	G2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	1B.1	S2	G2
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	2B.2	S2	G5
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	1B.1	S1	G1

Suggested Citation

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 26 January 2016].

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Appendix E — *Historic Property Survey Report and Archaeological Survey Report for the Claribel Road and Roselle Avenue Intersection Improvements Project, Stanislaus County, California*

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State of California Transportation Agency Department of Transportation

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Federal Project. Number. (Prefix, Agency Code, Project No.)	Location
10	*STA*	*CML 5938 (181)*	*Claribel Road and Roselle Avenue Intersection*

Project Description:

The Stanislaus County Department of Public Works, in conjunction with the California Department of Transportation (Caltrans), proposes to signalize and widen the intersection to accommodate existing traffic operations, including light vehicle and truck turning movements. The northern portion of the Project Site, north of Claribel Road is located within the City of Riverbank, and the southern portion of the Project Site, south of Claribel Road, is located within the unincorporated area of Stanislaus County, California. The proposed improvements would include widening of the north, west, and east legs of the Claribel Road and Roselle Avenue within approximately 600 feet of the intersection, and widening of the south leg within approximately 800 feet of the intersection. Proposed signal improvements would include the installation of foundations, poles, and mast arms as well as control boxes.

The Project will require a total of 38,281 square feet of permanent right-of-way acquisition from two property owners in the northwest and southwest quadrants of the intersection. The improvements will also include vegetation and tree removal, grading of the existing undeveloped County right-of-way and proposed right-of-way acquisition areas, excavation to a maximum depth of five feet, and utility relocation. Equipment staging will occur at off-site contractor facilities and portions of the existing or acquired right-of-way.

The Project falls under the regulatory authority of the Federal Highway Administration and requires compliance with the January 2014 First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California (PA). Caltrans District 10 is the federal lead agency for this Project.

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the project was established in consultation with Gary Scholze, Associate Environmental Planner (Archaeology) (PQS), and Parminder Singh, Local Assistance Project Engineer, on _____, 2015. Maps of the Project Vicinity, Location and the APE are located are located in Attachment A in this Historic Property Survey Report.

The APE was established as approximately 16 acres within Sections 35 and 36 of Township 2 South, Range 9 East, and Section 1 and 2 of Township 3 South, Range 9 East as depicted on the USGS 7.5-minute Riverbank quadrangle (Mount Diablo Baseline and Meridian). Boundaries were set by Caltrans District 10 and the Stanislaus County Department of Public Works. The APE includes the proposed right-of-way acquisitions.

The vertical limits of the APE are anticipated to have a maximum depth of five feet (1.5 meters) from the existing ground surface. Ground disturbance for the proposed project includes widening existing roadway, removal of vegetation and trees, grading, and possible utility relocation.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

x Native American Tribes, Groups and Individuals

-
- Section 106 consultation letters requesting any information related to cultural resources or heritage sites within or adjacent to the Project were sent on November 14, 2014. Follow-up phone calls were made on November 25, 2014 and December 1, 2014. One response has been received on behalf of three contacts for the Tule River Indian Tribe. All consultation correspondence and a contact log are provided in Attachment C.
- North Valley Yokuts Tribe, Katherine Erolinda Perez: No response.
- Southern Sierra Miwuk Nation, Lois Martin, Chairperson: No response.
- Southern Sierra Miwuk Nation, Les James, Spiritual Leader: No response.
- T'si-Akim Maidu, Don Ryberg, Chairperson: No response.
- Tule River Indian Tribe, Neil Peyton, Chairperson; Joey Garfield, Tribal Archaeologist; Kerri Vera, Environmental Department: Ms.Vera responded by email on November 24, 2014 stating that the Tribe has no knowledge of cultural sites within or near the APE. Ms. Vera asked that Tribes closer to the APE be consulted. In the event that cultural resources are inadvertently discovered and a closer Tribe is unable to be consulted then the Tule River Indian Tribe should be contacted.

x Native American Heritage Commission

- Letter sent October 3, 2014 requesting sacred lands file search and current contact list.
- Response received October 14, 2014: no known sacred lands within one-half mile radius of APE.

4. SUMMARY OF IDENTIFICATION EFFORTS

x National Register of Historic Places
x California Register of Historical Resources
x California Inventory of Historic Resources
x California Historical Landmarks
x California Points of Historical Interest
x California Historical Resources Information System (CHRIS)
x Caltrans Historic Highway Bridge Inventory
_ Caltrans Cultural Resources Database (CCRD)

x Archaeological Site Records

- Central California Information Center (CCIC): October 7, 2014 (CCIC File No. 9112N)

_ **Results:**

- The records search indicates two cultural resources investigations have been completed previously within a portion of the APE, while 19 additional studies have been completed within a one mile radius of the APE. No prehistoric cultural resources have been reported to the CCIC within the APE or a one mile radius. The results of these studies indicate there is one known historical architectural resource within the APE. A total of 25 historical architectural resources have been previously documented outside the APE within the one mile search radius.

- The sole resource within the APE is the Modesto Irrigation District (MID) Lateral No. 6 (P-50-000075). This portion of the MID was first recorded by JRP in 1993 and was evaluated as not eligible for the NRHP. In 2007 the lateral was re-evaluated by Cary & Co. and determined not eligible for the NRHP or CRHR. In 2011 the record was added

to by Mead & Hunt. They did not acknowledge the previous evaluations and made no determinations. In 2014 LSA updated the site record. They acknowledged all previous work and concurred that the lateral is not eligible for listing on the NRHP or CRHR individually or as part of a district.

- An intensive pedestrian level survey of the entire 16 acre APE was completed on November 10, 2014. No prehistoric cultural resources were observed. The historic-era architectural resource P-50-000075, MID Lateral No 6, was observed in the northern end of the APE and is currently empty of water. No other cultural resources were identified within or immediately adjacent to the APE.

5. PROPERTIES IDENTIFIED

x **Bridges listed as Category 5** in the Caltrans Historic Highway Bridge Inventory are present within the APE. Appropriate pages from the Caltrans Historic Bridge Inventory are attached (Attachment B).

- 38C0114 MID Main Canal, 0.1 miles west of Terminal Avenue
- 38C0249 MID Main Canal, 0..1 miles south of Claribel Road
- 38C0282 MID Main Canal, 0.6 miles east of Lampley Road
- 38C0087 MID Main Canal, 0.4 miles south of Claribel Road
- 38C0329 MID Main Canal, Jackson Avenue west of Roselle Avenue

x The following cultural resource within the APE was **previously determined not eligible** for inclusion in the National Register of Historic Places and that determination is still valid.

- P-50-000075 MID Lateral No. 6

x The following resources are **not significant resources under CEQA**:

- P-50-000075 MID Lateral No.6

6. HPSR to District File

x Caltrans, in accordance with Section 106 Programmatic Agreement Stipulation IX.A, has determined a **Finding of No Historic Properties Affected** is appropriate for this undertaking.

- P-50-000075 MID Lateral No. 6

7. HPSR to SHPO

x Not applicable.

8. HPSR to CSO

x Not applicable.

9. Findings for State-Owned Properties

x Not applicable; project does not involve Caltrans right-of-way or Caltrans-owned property.

10. CEQA Considerations

x Not applicable; Caltrans is not the lead agency under CEQA.

11. List of Attached Documentation

x Project Vicinity, Location, and APE Maps

- Attachment A (Figures 1, 2, 3)
- Attachment B: Local Bridges Listing

- Attachment C: Native American consultation correspondence.

x Archaeological Survey Report (ASR)

- Attachment D Molly Valasik, M.A., Samantha Schell, B.A., and Sherri Gust, M.S.; December 12, 2014. Peer reviewed by Emilie Zelazo, PQS Associate Environmental Planner (Archaeology), *August 6, 2015*

12. HPSR Preparation and Caltrans Approval

Prepared by:		August 6, 2015
Consultant / discipline:	*Samantha Schell, BA, Principal Archaeologist*	Date
Affiliation	*Cogstone Resource Management Inc.* *655 13th Street, Suite 300* *Oakland, CA 94612*	
Reviewed for approval by:		
District 10 Caltrans PQS discipline/level:	*Emilie Zelazo, PQS Associate Environmental Planner, Archaeology*	Date
Approved by:		
District 10 EBC:	*[Julie Myrah, Environmental Branch Chief]*	Date

ATTACHMENT A: MAP EXHIBITS

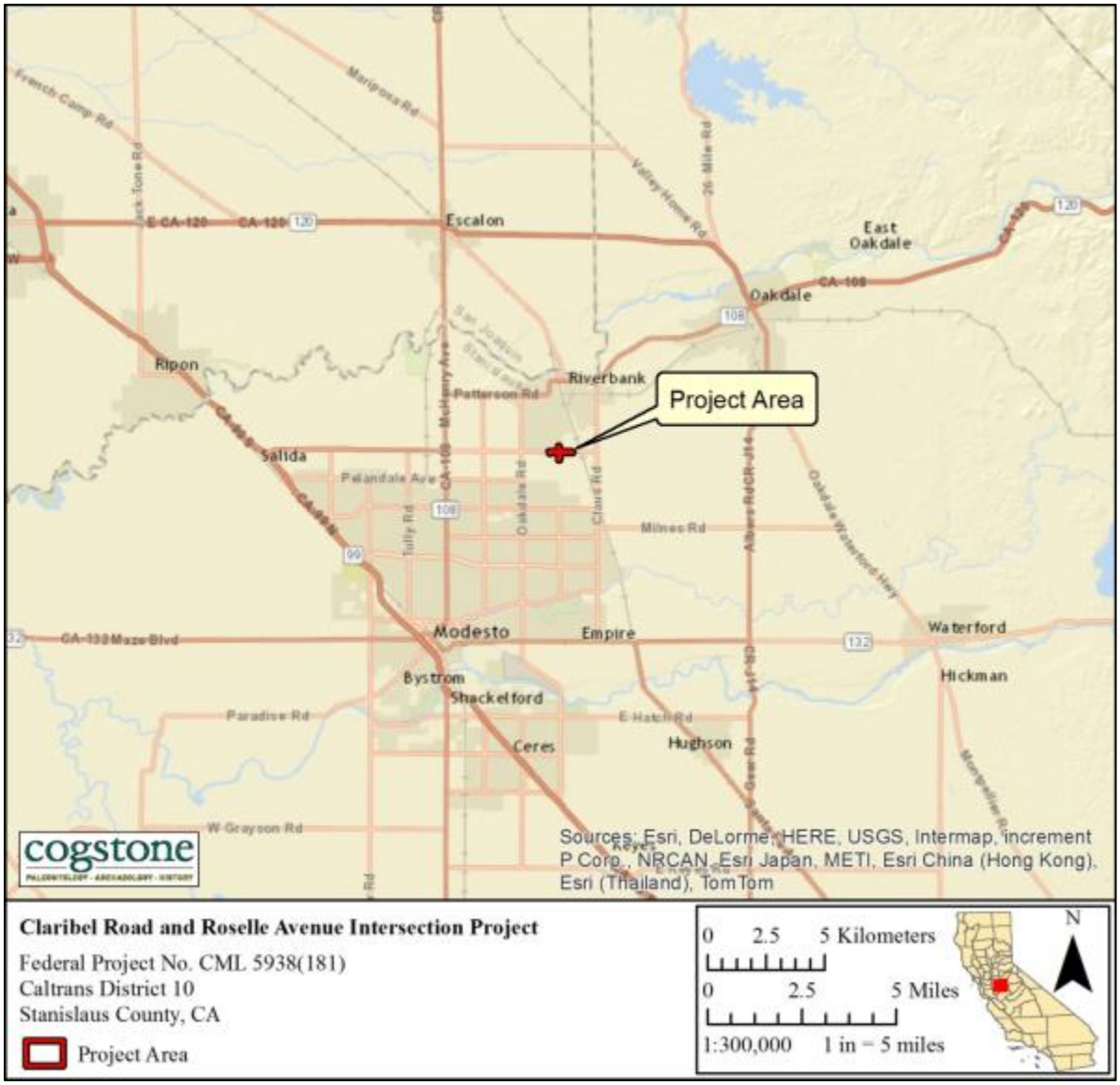

Figure 1. Project Vicinity Map

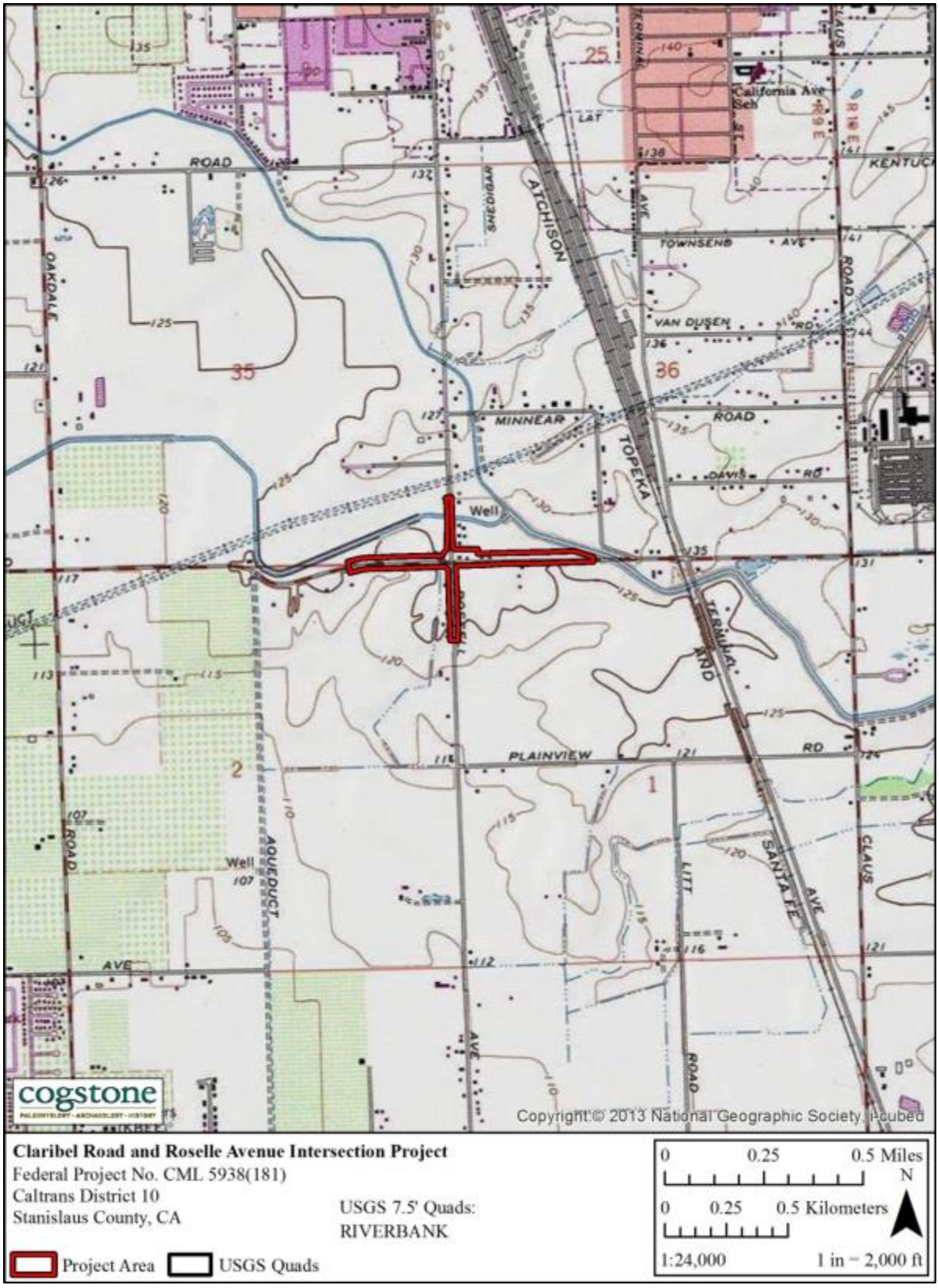

Figure 2. Project Location Map

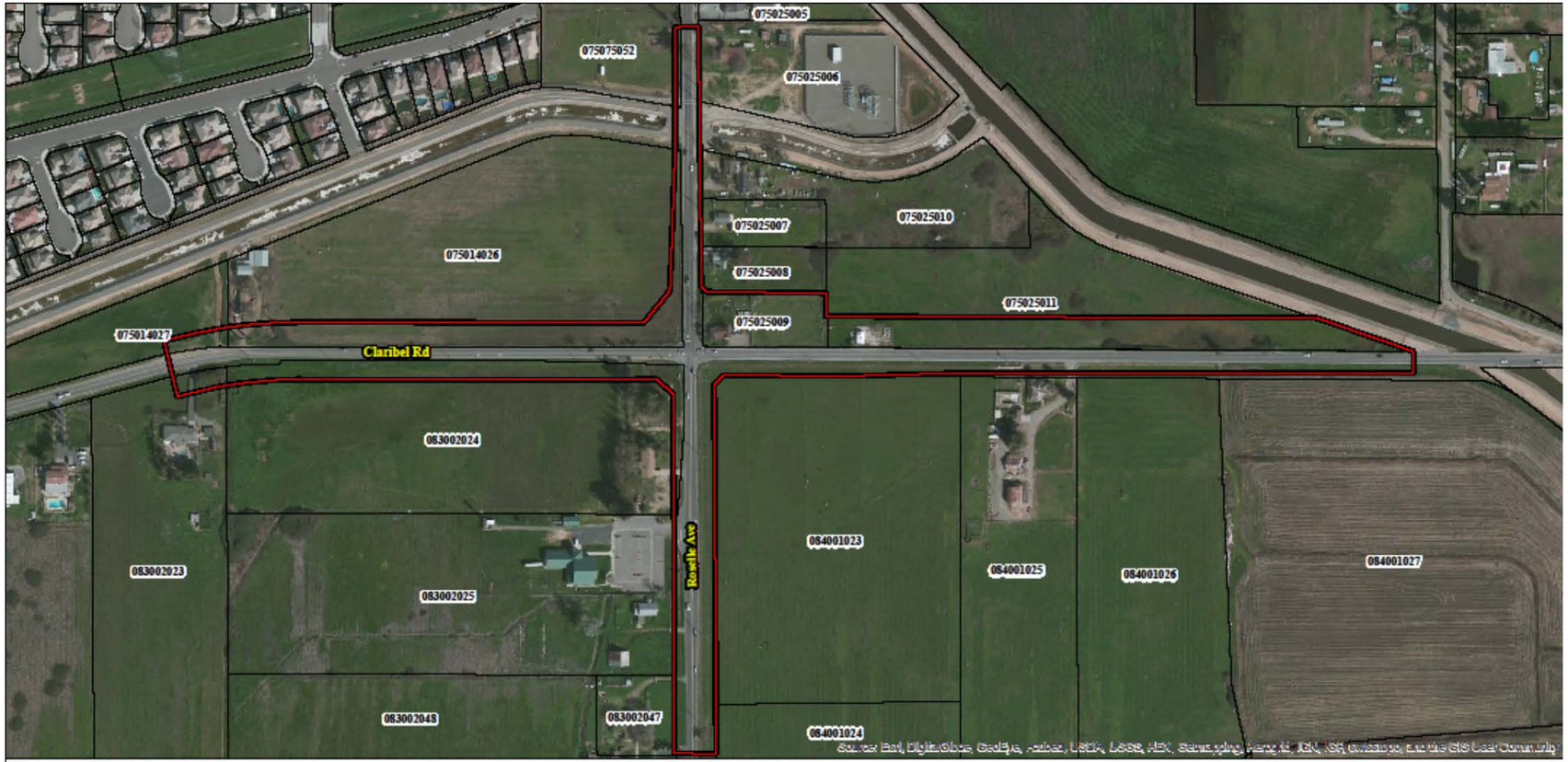

Figure 3. APE Map

ATTACHMENT B: LOCAL BRIDGES LISTING

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 10

Stanislaus County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
38C0234	SOUTH SAN JOAQUIN MAIN CANAL	0.5 MI N DODDS RD	5. Bridge not eligible for NRHP	1929	
38C0235	SOUTH SAN JOAQUIN MAIN CANAL	1.0 MI W TWENTY SIX MI RD	4. Historical Significance not determined	1994	
38C0236	M.I.D. MAIN CANAL	0.1 MI WEST MCHENRY AVE	5. Bridge not eligible for NRHP	1924	
38C0237	T.I.D. MAIN CANAL	0.2 MI E/O SANTA FE AVE	5. Bridge not eligible for NRHP	1920	1961
38C0238	NEWMAN WASTEWAY	0.7 MI S/O SHIELLS RD	5. Bridge not eligible for NRHP	1950	
38C0239	DELTA-MENDOTA CANAL CPM 034.39	0.15 Mi W of Stark Road	5. Bridge not eligible for NRHP	1963	
38C0240	CALIFORNIA AQUEDUCT	1.1 MI S HAMILTON ROAD	5. Bridge not eligible for NRHP	1966	
38C0241	DELTA-MENDOTA CANAL CPM 029.93	0.4 MI S/O HAMILTON ROAD	5. Bridge not eligible for NRHP	1962	
38C0242	WEST STANISLAUS I.D. LATERAL 4	200' W HAMILTON RD	5. Bridge not eligible for NRHP	1930	
38C0243	INGRAM CREEK	0.8 MI E/O MCCRACKEN RD	5. Bridge not eligible for NRHP	1918	
38C0244	T.I.D. CERES MAIN CANAL	0.3 MI W FAITH HOME ROAD	5. Bridge not eligible for NRHP	1914	
38C0245	T.I.D. CERES MAIN CANAL	80' W/O MOORE ROAD	5. Bridge not eligible for NRHP	1900	
38C0246	HIGHLINE CANAL	0.3 MI E OF HALL RD	5. Bridge not eligible for NRHP	1990	
38C0247	HIGHLINE CANAL	0.6 MI E HALL RD	5. Bridge not eligible for NRHP	1990	
38C0249	M.I.D. MAIN CANAL	0.1 MI S CLARIBEL RD	5. Bridge not eligible for NRHP	1948	1982
38C0251	M.I.D. MAIN CANAL	3 MI N MILNES RD	5. Bridge not eligible for NRHP	1925	1962
38C0252	T.I.D. CERES MAIN CANAL	0.8 MI N/O FOX ROAD	5. Bridge not eligible for NRHP	1967	
38C0253	MAIN CREEK	1.2 MI SE JCT ST RTE 120	5. Bridge not eligible for NRHP	1929	
38C0256	DRY CREEK TRIBUTARY	6.5 MI NW JCT GRANGE RD	5. Bridge not eligible for NRHP	1960	
38C0257	RYDBERG CREEK	3.9 MI NW LA GRANGE RD	5. Bridge not eligible for NRHP	1922	
38C0258	JOHNSON CREEK	1.5 MI NW LA GRANGE RD	5. Bridge not eligible for NRHP	1922	
38C0259	DRY CREEK	0.8 MI NW LA GRANGE RD	5. Bridge not eligible for NRHP	1960	
38C0261	SOUTH SAN JOAQUIN MAIN CANAL	0.6 MI S OF SCHULTZ RD	5. Bridge not eligible for NRHP	1927	
38C0262	LONE TREE CREEK	100FT S/O FREELOVE AVE	5. Bridge not eligible for NRHP	1918	
38C0263	SOUTH SAN JOAQUIN MAIN CANAL	0.1 MI N PLEASANT VALY RD	5. Bridge not eligible for NRHP	1928	
38C0264	SOUTH SAN JOAQUIN MAIN CANAL	0.4 MI N STATE RTE 120	5. Bridge not eligible for NRHP	1931	1976
38C0266	M.I.D. MAIN CANAL	0.2 MI N/O SR 132	5. Bridge not eligible for NRHP	1927	
38C0267	M.I.D. MAIN CANAL	0.2 MI N/O SR 132	5. Bridge not eligible for NRHP	1926	
38C0268	T.I.D. MAIN CANAL	1.5 MI E/O HAWKINS RD	5. Bridge not eligible for NRHP	1927	
38C0269	PEASLEE CREEK	2.6 MI W JCT YOSEMITE BLV	5. Bridge not eligible for NRHP	1930	
38C0270	DRY CREEK TRIBUTARY	1.0 MI NW JCT TIM BELL RD	5. Bridge not eligible for NRHP	1930	
38C0272	MARTELLS CREEK	0.1MI E FRANKENHEIMER RD	5. Bridge not eligible for NRHP	1920	
38C0273	MARTELLS CREEK	1.1 MI E FRANKENHEIMER RD	5. Bridge not eligible for NRHP	1920	
38C0274	M.I.D. LATERAL #6	0.4 MI S/O CALIF AVENUE	5. Bridge not eligible for NRHP	1925	
38C0275	M.I.D. LATERAL #4	JUST S/O STATE RTE 132	5. Bridge not eligible for NRHP	1922	
38C0278	DRY CREEK TRIBUTARY	0.1 MI W JCT ROCK RIV RD	5. Bridge not eligible for NRHP	1925	
38C0279	M.I.D. LATERAL #5	0.1 MI E PANAMA DRIVE	5. Bridge not eligible for NRHP	1972	
38C0280	HIGHLINE CANAL	0.6 M E/O LAMPLEY RD	5. Bridge not eligible for NRHP	1959	
38C0282	M.I.D. MAIN CANAL	0.1 MI E ROSELLE AVE	5. Bridge not eligible for NRHP	1948	
38C0283	M.I.D. LATERAL #4	AT LUCERN AVENUE	5. Bridge not eligible for NRHP	1939	1944
38C0284	M.I.D. MAIN CANAL	JUST SOUTH VINEYARD RD	5. Bridge not eligible for NRHP	1919	1962
38C0285	M.I.D. MAIN CANAL	0.5 MI N OF S.R. 132	4. Historical Significance not determined	1994	
38C0286	M.I.D. LATERAL #2	1 MI N/O SR 132	5. Bridge not eligible for NRHP	1920	1960

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Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 10

Stanislaus County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
38C0082	M.I.D. LATERAL #4	S/O KANSAS	5. Bridge not eligible for NRHP	1914	
38C0084	BRIGGSMORE ROAD OH	SPRR & 9TH STREET	5. Bridge not eligible for NRHP	1976	
38C0085	BECKWORTH ROAD OH	W OF STATE RTE 99	5. Bridge not eligible for NRHP	1976	
38C0088	M.I.D. LATERAL #6	0.4 MI S/O BROADWAY	5. Bridge not eligible for NRHP	1936	
38C0089	M.I.D. LATERAL #6	0.4 MI S/O BROADWAY	5. Bridge not eligible for NRHP	1912	1927
38C0072	HIGH LINE CANAL	1.65 MI NW OF KEYES RD	5. Bridge not eligible for NRHP	1966	
38C0073	DRY CREEK	0.8 MI S CLARIBEL ROAD	2. Bridge is eligible for NRHP	1925	1979
38C0076	M.I.D. MAIN CANAL	0.9 MI NW SR 132	5. Bridge not eligible for NRHP	1920	1961
38C0078	CLARIBEL LATERAL	0.5 MI N/O CLARIBEL RD	5. Bridge not eligible for NRHP	1920	1963
38C0079	SSJID CANAL	0.1 MI NW CLEVELAND AVE	5. Bridge not eligible for NRHP	1920	1960
38C0080	LONE TREE CREEK	0.68 MI S/E LONE TREE RD	5. Bridge not eligible for NRHP	1934	
38C0083	T.I.D. UPPER LATERAL #3	0.7 MI NW OF ZEERING RD	5. Bridge not eligible for NRHP	1924	1962
38C0087	M.I.D. MAIN CANAL	0.4 MI S/O CLARIBEL ROAD	5. Bridge not eligible for NRHP	1954	1981
38C0088	T.I.D. CERES MAIN CANAL	0.15 MI E/O MITCHELL RD	5. Bridge not eligible for NRHP	1982	
38C0090	T.I.D. MAIN CANAL	0.8 MI W HICKMAN RD	5. Bridge not eligible for NRHP	1923	1962
38C0091	T.I.D. MAIN CANAL	1.2 MI N WHITMORE AVE	5. Bridge not eligible for NRHP	1924	1959
38C0092	T.I.D. CERES MAIN CANAL	JUST S/O HATCH RD	5. Bridge not eligible for NRHP	1925	2007
38C0094	CALIFORNIA AQUEDUCT	0.43 MI E OF I-5	5. Bridge not eligible for NRHP	1964	
38C0095	DELTA-MENDOTA CANAL CPM 046.84	2.0 MILES EAST OF I-5	4. Historical Significance not determined	1948	
38C0096	CCID MAIN CANAL	0.5MI E SR33, @ ARMSTRONG	5. Bridge not eligible for NRHP	1953	
38C0098	T.I.D. LOWER LATERAL #4	0.5 MI N/O W. MAIN STREET	5. Bridge not eligible for NRHP	1925	
38C0101	DELTA-MENDOTA CANAL CPM 029.19	0.55 MI WEST OF MCCRACKEN	4. Historical Significance not determined	1946	
38C0104	SALADO CREEK	1.7 MI E/O I-5, W/O AE AV	5. Bridge not eligible for NRHP	1920	2001
38C0105	T.I.D. MAIN CANAL	1.1 MI W/O SANTA FE AVE	5. Bridge not eligible for NRHP	1919	1961
38C0106	T.I.D. MAIN CANAL	0.5 MI E/O SANTA FE AVE	5. Bridge not eligible for NRHP	1920	1960
38C0107	M.I.D. LATERAL #5	0.4 MI S OF CALIF AVENUE	5. Bridge not eligible for NRHP	1920	
38C0108	M.I.D. LATERAL #6	0.3 MI N MURPHY/BACON RD	5. Bridge not eligible for NRHP	1922	1990
38C0109	M.I.D. MAIN CANAL	0.5 MI S OF LADD ROAD	5. Bridge not eligible for NRHP	1925	1962
38C0110	M.I.D. MAIN CANAL	0.3 MI S OF LADD ROAD	5. Bridge not eligible for NRHP	1935	
38C0111	GASBURG CREEK	0.3 MI E NEW LAGRANGE RD	5. Bridge not eligible for NRHP	1916	1949
38C0113	M.I.D. LATERAL #6	0.4 MI E COFFEE ROAD	5. Bridge not eligible for NRHP	1939	1959
38C0114	M.I.D. MAIN CANAL	0.1 MI W/O TERMINAL AVE	5. Bridge not eligible for NRHP	1956	
38C0116	M.I.D. LATERAL #5	0.9 MI NW SHILOH RD	5. Bridge not eligible for NRHP	1925	1963
38C0117	CALIFORNIA AQUEDUCT	0.7 MI E OF I-5	5. Bridge not eligible for NRHP	1965	
38C0118	DELTA-MENDOTA CANAL CPM 032.61	1.5 Miles East of I-5	4. Historical Significance not determined	1947	
38C0123	T.I.D. LATERAL #2	AT REDWOOD ROAD	5. Bridge not eligible for NRHP	1923	1960
38C0124	T.I.D. LATERAL #1	JUST N/O WHITMORE AVENUE	5. Bridge not eligible for NRHP	1921	1955
38C0125	CERES MAIN SPILLWAY	JUST W/O FAITH HOME ROAD	5. Bridge not eligible for NRHP	1916	2007
38C0127	M.I.D. LATERAL #3	0.2 MI W/O OAKDALE RD	5. Bridge not eligible for NRHP	1969	
38C0128	MORTON STREET UC	0.8 MI NE OF YOSEMITE BL	5. Bridge not eligible for NRHP	1950	
38C0130	M.I.D. LATERAL #4	0.1 MI N OF MORRIS AVE	5. Bridge not eligible for NRHP	1936	
38C0131	M.I.D. LATERAL #4	DIAG @ INTERST OF MORRIS	5. Bridge not eligible for NRHP	1974	
38C0132	M.I.D. LATERAL #4	0.15 M N/O NEEDHAM	5. Bridge not eligible for NRHP	1937	1963

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Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 10

Stanislaus County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
38C0287	M.I.D. LATERAL #3	0.5 MI N/O PARKER RD	5. Bridge not eligible for NRHP	1925	
38C0288	M.I.D. MAIN CANAL	0.05 MI N/O SR 132	5. Bridge not eligible for NRHP	1962	
38C0289	M.I.D. MAIN CANAL	0.9 MI N/O SR 132	5. Bridge not eligible for NRHP	1965	
38C0290	M.I.D. LOWER WATERFORD CANAL	1.45 MI N/O SR 132	5. Bridge not eligible for NRHP	1927	1965
38C0291	M.I.D. MAIN CANAL	0.5 MI N/O SR 132	5. Bridge not eligible for NRHP	1929	
38C0292	M.I.D. MAIN CANAL	0.5 MI N/O SR132	5. Bridge not eligible for NRHP	1926	
38C0294	SOUTH SAN JOAQUIN ID DITCH	.75 MI NW/O ORA BLOSSOM R	5. Bridge not eligible for NRHP	1935	
38C0295	T.I.D. LOWER LATERAL #2	0.6 MI S/O SERVICE RD	5. Bridge not eligible for NRHP	1930	1965
38C0296	DELTA-MENDOTA CANAL CPM 048.38	0.5 Mi West of Bell Road	4. Historical Significance not determined	1948	
38C0297	STANISLAUS RIVER	KNIGHT'S FERRY	5. Bridge not eligible for NRHP	1967	
38C0301	T.I.D. LATERAL #3	JCT W/ TAYLOR RD	5. Bridge not eligible for NRHP	1919	
38C0302	T.I.D. LATERAL #5	JCT AT HARDING AVE	5. Bridge not eligible for NRHP	1919	
38C0303	M.I.D. LATERAL #4	0.2 MI W OF VIRGINIA AVE	5. Bridge not eligible for NRHP	1938	
38C0304	M.I.D. LATERAL #7	0.4 W/O DAKOTA RD	5. Bridge not eligible for NRHP	1925	1950
38C0305	M.I.D. LATERAL #7	0.1 MI N OF BECKWITH RD	5. Bridge not eligible for NRHP	1925	1950
38C0306	T.I.D. UPPER LATERAL #3	JUST S/O BARNHART ROAD	5. Bridge not eligible for NRHP	1920	
38C0307	DRY CREEK TRIBUTARY	1 MI W CRABTREE RD	5. Bridge not eligible for NRHP	1920	
38C0308	M.I.D. LATERAL #6	0.4 MI N/O COVERT RD	5. Bridge not eligible for NRHP	1925	
38C0309	M.I.D. LATERAL #6	0.2 MI N/O COVERT RD	5. Bridge not eligible for NRHP	1925	
38C0310	M.I.D. LATERAL #6	0.6 MI N/O BACON RD	5. Bridge not eligible for NRHP	1925	
38C0311	M.I.D. LATERAL #4	0.3 MI N/O RTE 132	5. Bridge not eligible for NRHP	1920	
38C0312	M.I.D. LATERAL #2	0.1 MI S/O GARST RD	5. Bridge not eligible for NRHP	1920	
38C0313	T.I.D. CERES MAIN CANAL	0.5 MI W/O FAITH HOME RD	5. Bridge not eligible for NRHP	1920	
38C0314	T.I.D. UPPER LATERAL #2	NEAR JCT AT SERVICE RD	5. Bridge not eligible for NRHP	1925	
38C0315	DEL PUERTO CREEK	16.6 MI W/O I-5	5. Bridge not eligible for NRHP	1986	
38C0319	SOUTH SAN JOAQUIN MAIN CANAL	2.5 MI S OF SONORA RD	5. Bridge not eligible for NRHP	1983	
38C0320	M.I.D. LATERAL #6	AT PRESCOTT ROAD	5. Bridge not eligible for NRHP	1982	
38C0321	T.I.D. CERES MAIN CANAL	JUST S/O MITCHELL ROAD	4. Historical Significance not determined	1994	
38C0322	M.I.D. LATERAL #6	0.05 MI N COVERT RD	5. Bridge not eligible for NRHP	1925	1965
38C0323	DRY CREEK	100' E. OF MORTON BLVD	2. Bridge is eligible for NRHP	1907	
38C0324	CLAUS ROAD POC	JUST S/O CREEKWOOD DR	5. Bridge not eligible for NRHP	1991	
38C0325	T.I.D. UPPER LATERAL #2	0.1 MI S/O SERVICE ROAD	5. Bridge not eligible for NRHP	1925	1957
38C0326	T.I.D. CERES MAIN CANAL	50' SOUTH HATCH ROAD	5. Bridge not eligible for NRHP	2002	
38C0327	PRESTWICK DRIVE BRIDGE	.1 MI S/O GLENEAGELS RD	5. Bridge not eligible for NRHP	1993	
38C0328	KANSAS-NEEDHAM VIADUCT	0.5 MI NW SR 132	5. Bridge not eligible for NRHP	2002	
38C0329	M.I.D. MAIN CANAL	JACKSON AVE, W OF ROSELLE	5. Bridge not eligible for NRHP	2003	
38C0330	TUOLUMNE RIVER	0.1 MI N/O RIVER RD.	5. Bridge not eligible for NRHP	2004	
38C0331	ORESTIMBA CREEK	.5 MI SE CROWS LANDING RD	5. Bridge not eligible for NRHP	1996	
38C0332	DELTA-MENDOTA CANAL CPM 053.43	1.5 MI WEST OF EASTIN RD	4. Historical Significance not determined	1949	
38C0333	T.I.D. CERES MAIN CANAL	W OF LARKSPUR LANE	5. Bridge not eligible for NRHP	1985	
38C0334	T.I.D. CERES MAIN CANAL	JUST S/O HATCH ROAD	5. Bridge not eligible for NRHP	2005	
38C0335	DELTA MENDOTA CANAL	EAST OF ROGERS RD	5. Bridge not eligible for NRHP	2007	
38C0336	SALADO CREEK	AT AMERICAN EAGLE DRIVE	5. Bridge not eligible for NRHP	2006	

ATTACHMENT C: NATIVE AMERICAN CONSULTATION

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

October 14, 2014

Sherri Gust
Cogstone
1518 W. Taft Ave.
Orange, CA 92865

Sent by Fax: (714) 974-8303
Number of Pages: 2

Re: Cogstone Project Number: 2873, Claribel Road/Roselle Avenue Intersection Project, Stanislaus County.

Dear Ms. Gust,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file 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.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. 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 or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contacts
Stanislaus County
October 13, 2014

Tule River Indian Tribe
Neil Peyron, Chairperson
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Northern Valley Yokut

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Northern Valley Yokuts
Bay Miwok

Tule River Indian Tribe
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Miwok
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Northern Valley Yokut

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 Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Cogstone Project Name: Claribel Road/Roselle Avenue Intersection Project, Cogstone Project No., 2873, Stanislaus County.

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

November 14, 2014

Tule River Indian Tribe
Neil Peyton, Chairperson
P.O. Box 589
Porterville, CA 93258

Re: Claribel Road at Roselle Avenue Intersection Project

Dear Mr. Peyton,

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), and in cooperation with the Stanislaus County, is conducting a cultural resource investigation under Section 106 for the Claribel Road at Roselle Avenue Intersection Project.

Stanislaus County with the assistance of Caltrans proposes to signalize and widen the Claribel Road/Roselle Avenue intersection to accommodate existing traffic operations, including light vehicle and truck turning movements. The intersection is located in the unincorporated area of Stanislaus County south of the City of Riverbank and north of the City of Modesto. The proposed improvements would include widening of the north, west, and east legs of the Claribel Road and Roselle Avenue within approximately 600 feet of the intersection, and widening of the south leg within approximately 800 feet of the intersection. Proposed signal improvements would include the installation of foundations, poles, and mast arms as well as control boxes. A map of the project area and all other information is provided.

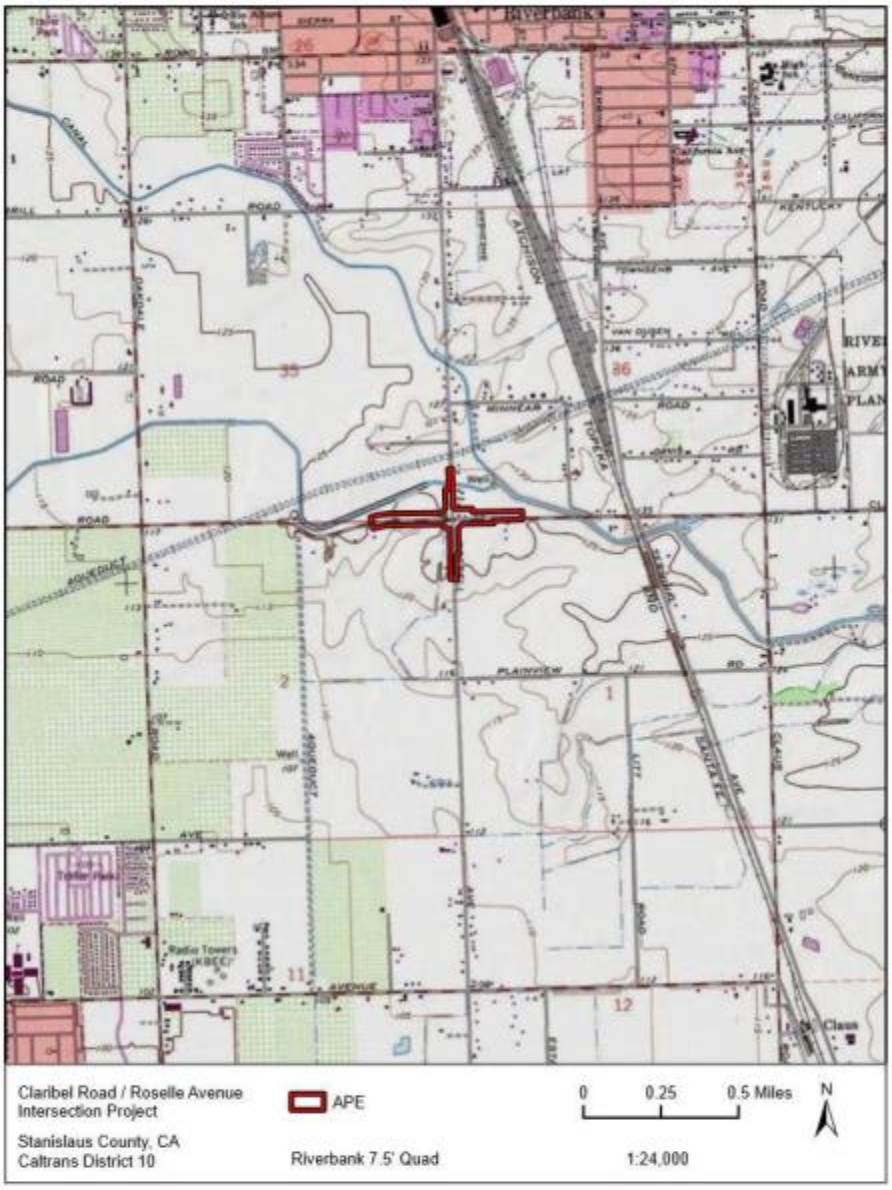
The Native American Heritage Commission (NAHC) was contacted on October 3, 2014 to perform a search of the Sacred Lands file. The NAHC had no record of Native American sacred sites or heritage resources in the immediate vicinity of the project area. The NAHC also provided a list of Native American individuals/organizations that may have knowledge of cultural resources within the project area and recommended that we contact you, among others.

In an effort to evaluate cultural resources, I am requesting any information not contained in the present NAHC database. I would appreciate it if you could notify me if you have records of any sacred lands or other heritage sites that might be impacted by the proposed project. All information provided regarding cultural and historic sites or other areas of concern would be treated as confidential material. We need your response within 2 weeks to meet the deadline for our report. You can email your response to MWilson@cogstone.com or call the number below.

Sincerely,

Claribel 2873

COGSTONE PROJECT NUMBER:	2873
COGSTONE PROJECT NAME:	Claribel Road/Roselle Avenue Intersection Project
PROJECT DESCRIPTION:	Proposed improvements to the intersection
USGS 7.5' QUAD:	Riverbank
COUNTY:	Stanislaus
TOWNSHIP/RANGE/SECTION:	T 2S, R 9E, Sec 35 and 36 T 3S, R 9E, Sec 1 and 2
ACRES:	16 acres


Claribel Road / Roselle Avenue
Intersection Project
Stanislaus County, CA
Caltrans District 10
APE
Riverbank 7.5' Quad
0
0.25
0.5 Miles
N
1:24,000

From: Kerri Vera [mailto:tuleriverenv@yahoo.com]
Sent: Monday, November 24, 2014 10:53 AM
To: Megan Wilson
Subject: Claribel_Roselle Intersection Project

Hello Ms. Wilson, thank you for your letter dated November 14, 2014 regarding the planned project at Claribel Road/Roselle Ave. in Stanislaus County (reference attached letter).

At this time, we do not have any information about culturally important sites in the area. If you have not already done so, we would like to encourage you to seek input from Tribes within a closer proximity or affiliation to the area.

If, during project execution, culturally important items should be inadvertently discovered and you are unable to receive input from a Tribe with closer affiliation, please contact us again.

Thank you for your communication efforts.

Sincerely,

KERRI VERA
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL PROTECTION
TULE RIVER TRIBAL COUNCIL
PO BOX 589
PORTERVILLE CA 93258
PH: 559.783.9984
FX: 559.783.8932

Native American Contact Log for the Claribel Road and Roselle Avenue Project

Native American Group/Individual	Date(s) and Method of First Attempt	Date(s) and Method of Second Attempt	Date(s) and Method of Third Attempt	Date(s) of Replies Rec'd	Comments
North Valley Yokuts Tribe, Katherine Erolinda Perez	11/14/2014, Letter	11/25/2014, email	12/1/2014 Message left with secretary	No Respone	
Southern Sierra Miwuk Nation, Les James, Spiritual Leader	11/14/2014, Letter	11/25/2014 voicemail	12/1/2017 voicemail	No Response	
Southern Sierra Miwuk Nation, Lois Martin, Chairperson	11/14/2014, Letter	11/25/2014 voicemail	12/1/2017 voicemail	No Response	
Tule River Indian Tribe, Joey Garfield, Tribal Archaeologist	11/14/2014, Letter	Contact Complete	Contact Complete	11/24/2014, email	On November, 24th 2014 Ms. Vera responded on behalf of the Tule River Indian Tribe that they do not have any information regarding culturally important sites within or near the project area. Ms. Vera asked to refer to Tribes with closer affiliations to the project area. They requested, that in the event culturally important items are inadvertently discovered and Cogstone is unable to consult with a Tribe with closer affiliation to contact the Tule River Indian Tribe.
Tule River Indian Tribe, Kerri Vera, Environmental Department	11/14/2014, Letter	Contact Complete	Contact Complete	11/24/2014, email	
Tule River Indian Tribe, Neil Peyton, Chairperson	11/14/2014, Letter	Contact Complete	Contact Complete	11/24/2014, email	

Attachment D. ASR

ARCHAEOLOGICAL SURVEY REPORT FOR THE CLARIBEL ROAD AND ROSELLE AVENUE INTERSECTION IMPROVEMENTS PROJECT, STANISLAUS COUNTY, CALIFORNIA

Federal Project No. CML 5938 (181)

Prepared for
California Department of Transportation – District 10
1976 East Charter Way, Stockton, CA 95205

and
Stanislaus County Department of Public Works
1716 Morgan Road, Modesto, CA 95385

Prepared by: _____ _____ August 6, 2015

Samantha Schell, B.A. Date
Principal Investigator – Cultural Resources
Cogstone Resource Management Inc.
655 13th Street, Suite 300, Oakland, CA 94612

Authors: Molly Valasik, M.A., Samantha Schell, B.A., and Sherri Gust, M.S.

Reviewed by: _____ _____

Emilie Zelazo Date
Associate Environmental Planner (Archaeology) (PQS)
Environmental Branch, Caltrans District 10

Approved by: _____ _____

Julie Myrah Date
Branch Chief
Environmental Branch, Caltrans District 10

USGS 7.5-Minute Quadrangle: Riverbank 1969 (PR 1987)
16 Acres

August 2015

Cogstone Project No. 2873

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SUMMARY OF FINDINGS

The Stanislaus County Department of Public Works, in conjunction with the California Department of Transportation (Caltrans), proposes to signalize and widen the intersection to accommodate existing traffic operations, including light vehicle and truck turning movements. The northern portion of the Project Site, north of Claribel Road is located within the City of Riverbank, and the southern portion of the Project Site, south of Claribel Road, is located within the unincorporated area of Stanislaus County, California The proposed improvements would include widening of the north, west, and east legs of Claribel Road and Roselle Avenue within approximately 600 feet of the intersection, and widening of the south leg within approximately 800 feet of the intersection. Proposed signal improvements would include the installation of foundations, poles, and mast arms as well as control boxes.

The survey was undertaken to identify any cultural resources present. The sole resource within the APE is the Modesto Irrigation District (MID) Lateral No. 6 (P-50-000075) per both the record search and survey. In 2014 LSA recommended the lateral as not eligible for listing on the NRHP or CRHR individually or as part of a district.

The previously recorded Modesto Main Canal, P-50-002 is adjacent to the APE to the northeast. Two property parcels were surveyed from the shoulder of the County's existing right-of-way using a single transect due to lack of permission to enter by the landowners.

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if the site [s] cannot be avoided by the project. If buried cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

INTRODUCTION

The Claribel Road and Roselle Avenue Intersection Improvements Project (Figure 1) is located north of Claribel Road within the City of Riverbank, and south of Claribel Road in the unincorporated area of Stanislaus County north of the City of Modesto (Figure 2). The intensive pedestrian level survey of the Area of Potential Effect (APE) was conducted on November 10, 2014 (Survey Coverage Map Figure 5) by Dylan Stapleton, who holds a M.A. in Anthropology and has more than 14 years of experience in California archaeology.

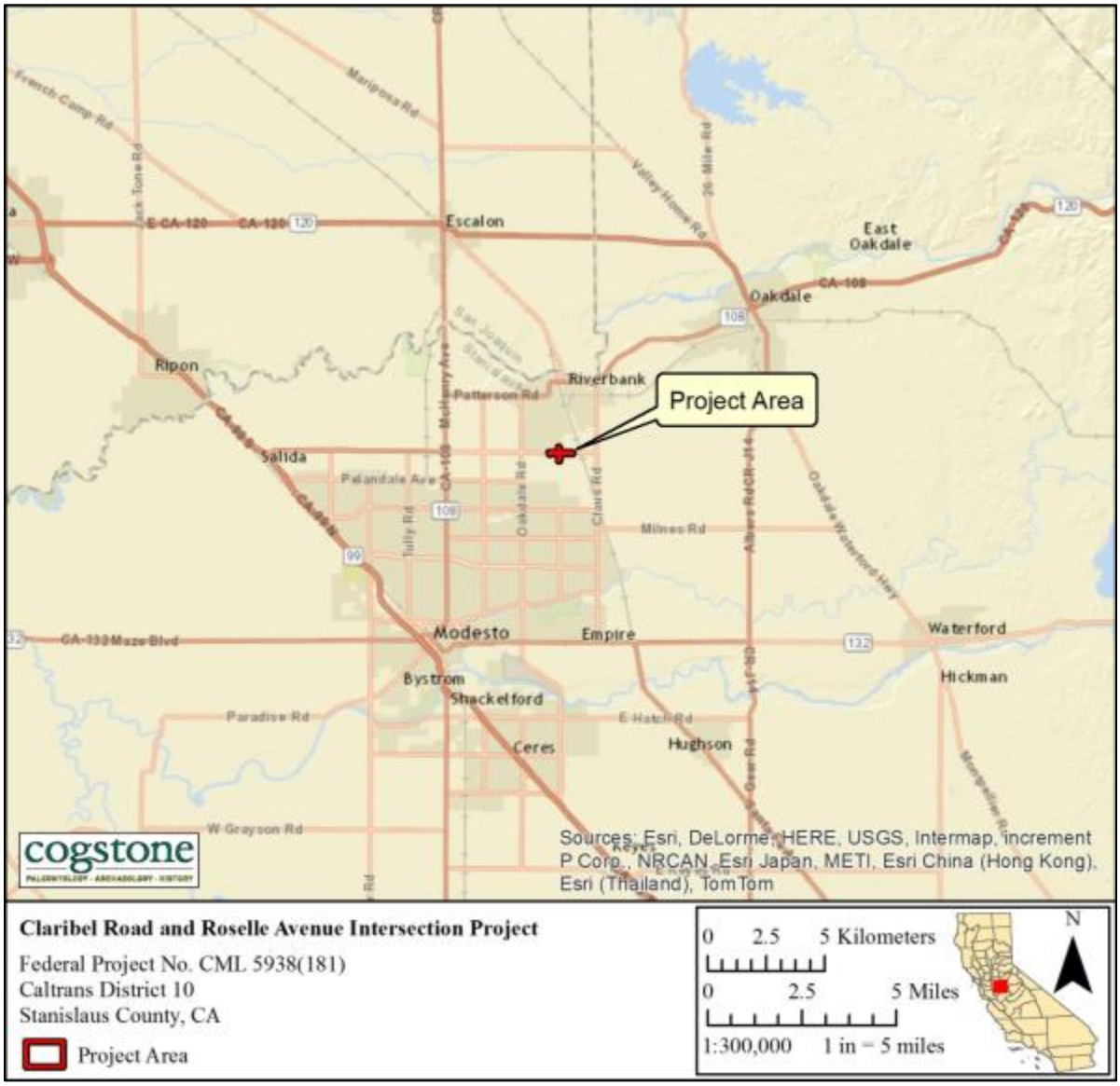

Figure 1. Project Vicinity Map

PROJECT PERSONNEL

All personnel meet the Secretary of the Interior's Standards for Archaeology and Historic Preservation (36 CFR Part 61). Sherri Gust served as Cogstone's Project Manager and performed quality control review. Ms. Gust is a Registered Professional with an M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis and over 30 years of experience in California archaeology and paleontology.

Molly Valasik wrote a majority of this report. Ms. Valasik is a RPA and holds a M.A. in Anthropology from Kent State University in Kent, Ohio. She has more than five years of experience in California archaeology.

Nancy Sikes wrote the Prehistory and History sections of this report. Dr. Sikes is a Registered Professional Archaeologist (RPA) who holds a Ph.D. in Anthropology from the University of Illinois at Urbana-Champaign and a B.A. in Anthropology from the University of Nevada, Reno. Dr. Sikes has more than 20 years of experience with the cultural resources of California and the Great Basin.

Samantha Schell prepared portions of this report. Ms. Schell has 20 years of experience in cultural resource management in California holds a B.A. in Anthropology from the University of California, Berkeley.

Cogstone Archaeologist Dylan Stapleton performed the pedestrian survey of the APE on November 10, 2014. Mr. Stapleton holds a M.A. from California State University, Sacramento, and has more than 14 years of experience in California archaeology. Short resumes of Cogstone staff are provided (Appendix A).

PROJECT LOCATION AND DESCRIPTION

Stanislaus County (County) is proposing the construction of a signalized intersection at Claribel Road and Roselle Avenue, including widening the existing two-lane roadway at the intersection to improve turn lanes to accommodate truck and light vehicle traffic. No additional through lanes would be constructed and proposed improvements would not increase capacity of the road(s).

The APE (Federal Project No. CML 5938 (181)) consists of approximately 4.6 acres along Claribel Road and Roselle Avenue, in the unincorporated area of Stanislaus County, California within a portion of Sections 35 and 36, Township 2 South, Range 6 East; and portions of Sections 1 and 2, Township 3 South, Range 9 East Mount Diablo Baseline and Meridian, Latitude 37˚ 42' 38.83" North, Longitude 120˚ 56' 25.14" West, NAD 83, and can be located on the *Riverbank*, California USGS 7.5-minute topographic quadrangle (Figure 2). The APE is adjacent to the southern boundary of the City of Riverbank.

The northern portion of the Project Site, north of Claribel Road is located within the City of Riverbank, and the southern portion of the Project Site, south of Claribel Road, is located within the unincorporated area of Stanislaus County, California Traffic control at the intersection is an all-way stop, in combination with an overhead flashing red beacon at the center of the intersection. Roll-over curbs are provided at all corners to facilitate truck turning movements. Under existing conditions, intersection traffic is subject to significant delay, which results in substantial air pollution emissions; using the Highway Capacity Manual (HCM) method, the intersection functions at level of service (LOS) F with 93.5 seconds of delay. The intersection conducts traffic generated by ongoing urban development in the nearby cities and traffic operations are expected to worsen over time.

Planned signalization of the intersection will result in significant reductions in traffic delay and associated air pollution. Stanislaus County has calculated the benefit: cost ratio for the project based on air quality improvements alone at over 12:1.

Stanislaus County considered five alternatives in its Project Design Study Report (PDS) for the project including: 1) No Build, 2) Signal Installation, No Widening; 3) Signal Installation, Widening for Specified Turning Movements; 4) Signal Installation, Widening for Left Turning Movements; and 5) Signal Installation, Widening for All Turning Movements. The PDS recommended the selection of Alternative 4, which is the proposed project. Alternative 4 is the least-cost alternative that meets the project purpose and need and provides maximal benefits (Figure 2).

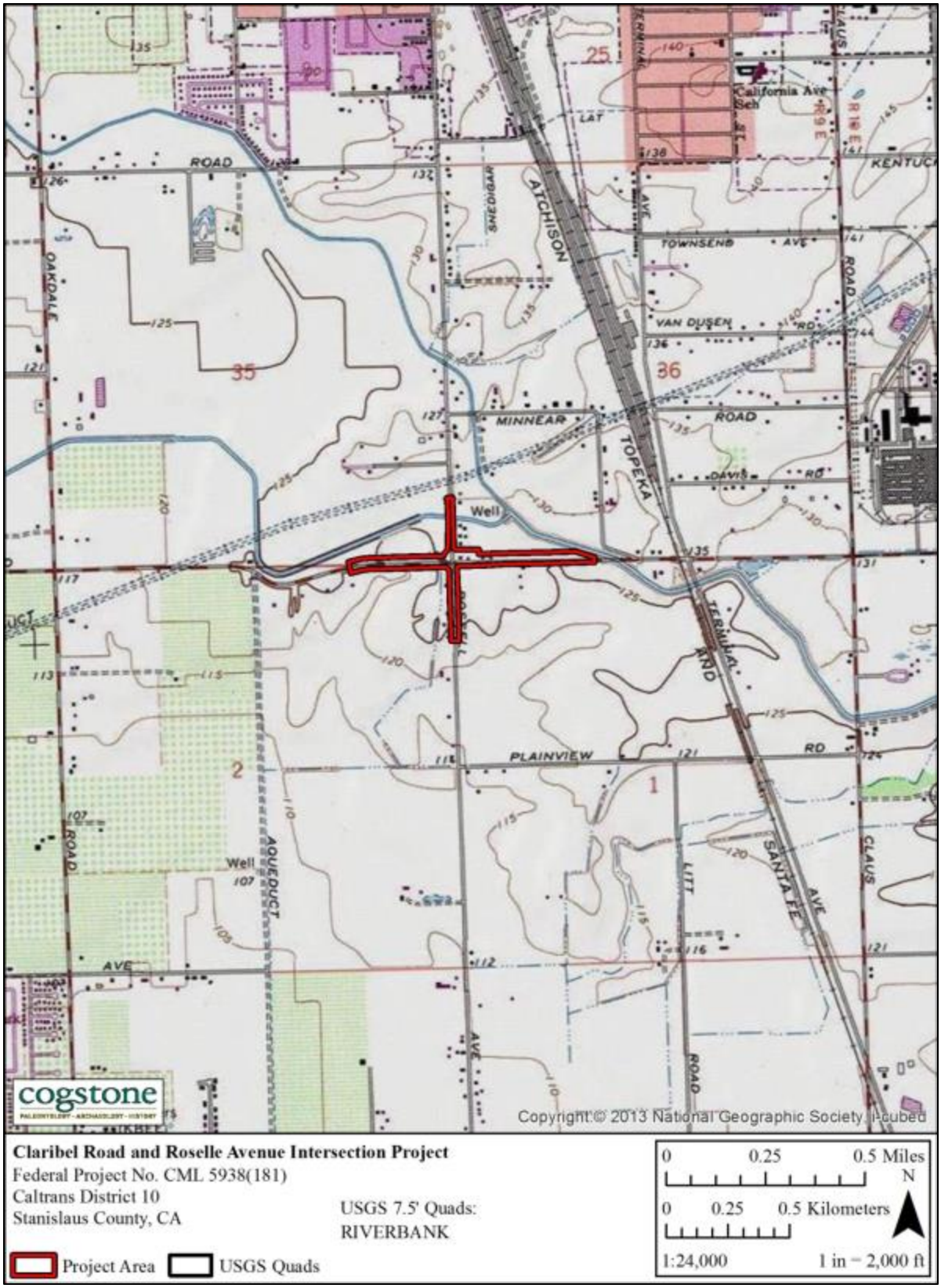

Figure 2. Project Location Map

The Project will require a total of 38,281 square feet of permanent right-of-way acquisition from the property owners in the northwest, northeast, and southwest quadrants of the intersection. Temporary Construction Easements (TCE) and Permits to Enter and Construct (PTE) may be needed from all quadrants on the project. The improvements will also include vegetation and tree removal within the existing undeveloped areas within County right-of-way, as well as within undeveloped areas of the proposed right-of-way acquisition.

Project development will require grading within existing undeveloped areas within the County right-of-way as well as within areas of the proposed right-of-way acquisition. Excavation to a maximum depth of five feet will be required to establish roadway subgrades and foundations for signals and signage. The existing overhead utility poles along the west side of Roselle Avenue and along the north and south sides of Claribel Road will be relocated, as needed, in conjunction with the project. Underground utilities in the project vicinity, if present, will require relocation.

Equipment and materials staging for the project are likely to occur within off-site contractor facilities, along the existing County road right-of-way, and along the new right-of-way to be acquired; however, staging location areas have not been defined.

Existing traffic through the Claribel Road/Roselle Avenue intersection will be accommodated during the construction period pursuant to a Traffic Control Plan to be prepared by the contractor. The project is not expected to require closure of either street. Traffic will be diverted onto the half-road section to allow construction of new facilities on the opposite side.

The intersection at Claribel Road and Roselle Avenue would be signalized and widened to accommodate existing traffic operations, including light vehicle and truck turning movements. This would include widening of the north, west, and east legs of Claribel Road and Roselle Avenue within approximately 600 feet of the intersection and widening of the south leg within approximately 800 feet of the intersection, including taper sections. Widening of the central portion of the intersection and increases in outside intersection corner radii will facilitate turning movements for both trucks and light vehicles.

Proposed signal improvements would involve the installation of foundations, poles, and mast arms to support the proposed signal assemblies, street name signs and luminaries as well as control boxes and other related equipment. Multi-phase control would be provided to accommodate anticipated turning movements on all four approaches.

The project would include a 0.1 foot minimum pavement overlay of the existing paved sections on all the project segments. The improved roadway sections would be restriped and signed in accordance with County and state standards.

AREA OF POTENTIAL EFFECTS

The APE includes all potential direct and indirect effects to cultural resources that may result from the proposed project (HPSR Attachment A). The APE includes the proposed right-of-way acquisitions on the north and south sides of Claribel Road.

The vertical limits of the APE are anticipated to have a maximum depth of five feet (1.5 meters) from the existing ground surface. Ground disturbance for the proposed project includes widening existing roadway, removal of vegetation and trees, grading, and possible utility relocation.

SOURCES CONSULTED

CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM

A search for archaeological and historical records was completed by the Central California Information Center (CCIC) of the California Historical Resources Inventory System (CHRIS) on October 7, 2014 (CCIC File No. 9112N; Appendix B). The record search covered a standard one mile radius around the APE boundaries as recommended by SHPO and this area is entirely on the USGS Riverbank 7.5-minute quadrangle map. The records search indicates a total of 21 cultural resources investigations have been completed previously within a one mile radius of the APE (Table 1). Of these, two studies included a portion of the APE, four were completed within a 0.25 mile radius of the APE, two investigations were completed within a 0.5 mile radius of the APE, and 13 investigations were completed between a 0.5 mile and one mile radius of the APE.

Table 1. Previous Studies within a One mile Radius of APE

Author	Report Number	Report Title	Date	Proximity to APE
Cleland, J. H., A.L. Christenson, and J. C. Smith	ST-00861	An Archaeological Overview and Management Plan for the Riverbank Army Ammunition Plant, Riverbank, CA	1988	Within 1 mile
Derr, E. H.	ST-01952	Section 10, Cultural Resources; Prepared for Riverbank Redevelopment Program EIR.	1993	Within a 1/2 mile
Derr, E. H.	ST-03211	Pacific Bell Mobile Services: 5300 Claus Road, Riverbank; Stanislaus County; Site #SA-223-01	1998	Within 1 mile
Davis-King, Shelly	ST-04146	Department of Transportation Negative Archaeological Survey Report: 10-STA, Claribel Road at Claus Road.	2000	Within 1 mile
Davis-King, Shelly	ST-04147	Department of Transportation Negative Archaeological Survey Report: 10-STA, Claribel Road at Oakdale Road.	2000	Within 1 mile

Author	Report Number	Report Title	Date	Proximity to APE
Jesnsen, P.	ST-051567	Archaeological Inventory Survey: M.I.D.'s Transmission Line and Substation Project, Northeast of Modesto, Stanislaus County, CA.	2003	Within APE
Kumar, S.	ST-06087	Section 106 Review for EBS Buildings 9, 14, & 15, Riverbank Army Ammunition Plant, Stanislaus County, CA	1998	Within 1 mile
Kumar, S.	ST-06088	Section 106 Review for Historic Preservation Law for LMC-West Building 120, Riverbank Ammunition Plant, Stanislaus County, CA	1996	Within 1 mile
Kumar, S.	ST-06089	Section 106 Review for EBS for Railroads, Riverbank Army Ammunition Plant, Stanislaus County, CA	1998	Within 1 mile
Kumar, S.	ST-06090	Section 106 Review for Historic Preservation Law for L.B. Foster Co.	1996	Within 1 mile
Kumar, S.	ST-06091	Section 106 Review for Historic Preservation Law, RST-PAL Pallets, Riverbank Army Ammunition Plant, Riverbank, Stanislaus County, CA	1996	Within 1 mile
Busby, C.I.	ST-06121	Letter Report: Cultural Resources Feasibility Review - Hetch Hetchy Project - Modesto, Stanislaus County, CA.	2005	Within a 1/2 mile
Wycko, B.	ST-06878	San Joaquin Pipeline System Project, Draft EIR, San Francisco Planning Department Case No. 2007.0118E, State Clearinghouse No. 2007032138	2008	Within a 1/4 mile
Waechter, S. and M. Bunse	ST-07244	North County Corridor: Environmental Constraints Analysis: Cultural Resources	2007	Within APE
URS Corporation	ST-07526	San Joaquin Pipeline System Project Archaeological Survey Report and Findings of Effect	2009	Within a 1/4 mile
Carey & Co., Inc.	ST-07527	San Joaquin Pipeline System Project, Historic Resources Inventory and Evaluation Report	2009	Within a 1/4 mile
Koenig, Heidi	ST-07551	San Joaquin Valley Communication System Upgrade Project, Alameda, Contra Costa, San Joaquin, Stanislaus, and Tuolumne Counties, Final Historic Context and Archaeological Survey Report	2012	Within a 1/4 mile
Knapp Architects	ST-07937	Historic Resource Assessment, Riverbank Army Ammunition Plan, Riverbank, CA	2010	Within 1 mile
Roland, C., and C. Moffett	ST-08004	Finding of No Adverse Effect, Claribel Road Widening Project, Stanislaus County, CA, Claribel Road between McHenry Avenue and Oakdale Road, Federal Project No.: CML-5938(1984)	2011	Within 1 mile
Roland, C., and C. Moffett	ST-08005	Historical Resources Evaluation Report, Claribel Road Widening Project, Stanislaus County, CA, Road between McHenry Avenue and Oakdale Road, Federal Project No. CML-5938(1984)	2011	Within 1 mile
Johnson, M.K., and K. Tremaine	ST-08006	Historic Property Survey Report and Final Archaeological Survey Report, Claribel Road Widening Project, Stanislaus County, California PM 5938, Federal Aid Number CML-5938(1984)	2011	Within 1 mile

The results of these studies indicate there is one known historical architectural resource within the APE. A total of 25 cultural resources have been previously documented outside the APE within the one mile search radius (Table 2). All of these resources are historical architectural resources including 21 buildings and four linear resources (a pipeline, two canals, and a railroad). No prehistoric cultural resources have been reported to the CCIC within the APE or a one mile radius.

The sole resource within the APE is the Modesto Irrigation District (MID) Lateral No. 6 (P-50-000075). This portion of the MID was first recorded by JRP in 1993 and was evaluated as not eligible for the NRHP. In 2007 the lateral was re-evaluated by Cary & Co. and determined not eligible for the NRHP or CRHR. In 2011 the record was added to by Mead & Hunt. They did not acknowledge the previous evaluations and made no determinations. In 2014 LSA updated the site record. They acknowledged all previous work and concurred that the lateral is not eligible for listing on the RHP or CRHR individually or as part of a district.

Adjacent to the APE is the Modesto Main Canal, P-50-002002. This historic built resource was evaluated in 2007 by Cary & Co. as not eligible for the NRHP. In 2014 LSA updated the site record and also found that the lateral is not eligible for listing on the NRHP or CRHR individually or as part of a district.

Table 2. Previously Recorded Cultural Resources within one mile Radius of APE

Primary No.	Site Description	Date Recorded	Proximity to APE
P-50-000074	Historic San Joaquin Pipelines #1 and #2	1993	Within a 1/4 mile
P-50-000075	Historic Modesto Irrigation District Lateral No. 6	1993	Within APE
P-50-001725	Historic Blanking Plant/Furnace Building	1983	Within 1 mile
P-50-001726	Historic Press Room Building	1983	Within 1 mile
P-50-001727	Historic Terminal House	1983	Within 1 mile
P-50-001728	Historic Machine Shop	1983	Within 1 mile
P-50-001729	Historic Production Line Building	1983	Within 1 mile
P-50-001730	Historic Water Well No. 3	1983	Within 1 mile
P-50-001731	Historic Boiler & Compressor House	1983	Within 1 mile
P-50-001732	Historic Cafeteria & Office Building	1983	Within 1 mile
P-50-001733	Historic Maintenance Shop Building	1983	Within 1 mile
P-50-001734	Historic Building 120	1996	Within 1 mile
P-50-001741	Historic Autodin Building	1983	Within 1 mile
P-50-001742	Historic Garage	1983	Within 1 mile
P-50-001743	Historic General Purpose Warehouse	1983	Within 1 mile
P-50-001744	Historic Washroom & Dispensary Building	1983	Within 1 mile
P-50-001745	Historic Pain & Oil Storage Building	1983	Within 1 mile
P-50-001746	Historic Production Line No. 7	1983	Within 1 mile
P-50-001747	Historic Riverbank Army Ammunition Plant	1983	Within 1 mile
P-50-001748	Historic Firehouse	1983	Within 1 mile
P-50-001749	Historic Paint Spray Building	1983	Within 1 mile
P-50-002002	Historic Modesto Main Canal	2007	Adjacent to APE
P-50-002006	Historic Burlington Northern & Santa Fe Railroad	2007	Within a 1/2 mile

Primary No.	Site Description	Date Recorded	Proximity to APE
P-50-002058	Historic Riverbank Lateral	2007	Within a 1/4 mile
P-50-002159	Historic Besio Property	2011	Within 1 mile
P-50-002164	Historic Rodin Property	2014	Within 1 mile

OTHER SOURCES

In addition to the records at the CCIC, a variety of sources were consulted by Molly Valasik in December 2014 to obtain information regarding the APE (Table 3). Sources include the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI) and local historical registers. Specific information about the APE, obtained from historic maps, is presented in the Local History section.

Table 3. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP; 1979-2002 & supplements)	Negative.
Historic USGS Topographic Maps	1916 Riverbank 7.5-minute map depicts Claribel Road, Roselle Avenue, Lateral No. 6 in the APE. Adjacent to the APE are three residences. By 1953, there are nine residences in the vicinity. No other development has occurred.
Historic U.S. Department of Agriculture Aerial Photographs	None available.
California Register of Historical Resources (CRHR; 1992-2010)	Negative.
California Historical Resources Inventory (CHRI; 1976-2010)	Negative.
California Historical Landmarks (CHL; 1995 & supplements to 2010)	Negative.
California Points of Historical Interest (CPHI; 1992 to 2010)	Negative.
Caltrans Historic Bridge Inventory (Caltrans 2013)	Five local bridges located between a ¼ mile and 1 mile from the APE.
Bureau of Land Management (BLM) General Land Office (GLO) Records	Multiple land patents granted to individuals and the State of California for portions of the APE.

The Caltrans bridge inventory revealed that five bridges are located within the APE. All bridges provide vehicle crossing over the Modesto Main Canal, P-50-002002. Bridge 38C0114 was built in 1958, bridge 38C0249 was built in 1948 and improved in 1982, bridge 38C0282 was built in 1959, bridge 38C0087 was built in 1954 and improved in 1981, and bridge 38C0329 was built in

2003. All bridges were previously evaluated and determined to be Category 5 - not eligible for the NRHP (HPSR Attachment B).

A search of the BLM General Land Office (GLO) Records available online revealed that four land patents were issued between 1854 and 1880 for portions of the APE (BLM n.d., Table 4).

Table 4. BLM land patents in portions of APE

Name	Year	Aliquots	Acres	Section	Township	Range
John Cavill	1873	S1/2, SE1/4	80	35	2S	9E
State of California	1854	All		36	2S	9E
John Chapman	1880	N1/2, NW1/4	162	1	3S	9E
John H. Howell	1870	N1/2, NE1/4	163	2	3S	9E

NATIVE AMERICAN CONSULTATION

A sacred lands record search was requested by Cogstone from the Native American Heritage Commission (NAHC) on October 3, 2014. The Commission responded on October 14, 2014 that there are no known sacred lands within a one half mile of the APE. The NAHC requested that seven Native American tribes or individuals be contacted for further information regarding the general project vicinity.

Section 106 consultation letters were sent by Cogstone on November 14, 2014, requesting any information related to cultural resources or heritage sites within or adjacent to the project area. Cogstone made additional attempts at contact by phone on November 25, 2014 and December 1, 2014.

Ms. Kerri Vera, Environmental Department of the Tule River Indian Tribe, responded by email on November 24, 2014 stating that the Tribe has no knowledge of cultural sites within or near the APE. Ms. Vera asked that Tribes closer to the APE be consulted. In the event that cultural resources are inadvertently discovered and a closer Tribe is unable to be consulted, then the Tule River Indian Tribe should be contacted. No response has been received from the other individuals or tribes on the contact list. All consultation correspondence and a contact log are provided (HPSR Attachment C).

BACKGROUND

ENVIRONMENT

GEOLOGY, HYDROLOGY, AND SOILS

The project is located in the San Joaquin Valley within the Great Valley Geomorphic Province. The Great Valley Province is a long, narrow northwest-trending alluvial valley that lies between the Sierra Nevada Range to the east and the Coast Ranges to the west (Wagner 2002). San Joaquin Valley extends from the Sacramento-San Joaquin River Delta in the north to the Tehachapi Mountains in the south. It is boarded on the west by the coastal mountain ranges and to the east by the Sierra Nevada Mountains. This valley formed as a trough created by the tectonic forces of the Pacific and North American Plates. Valley sediments are composed of marine sediments overlain by continental sediments which were deposited by streams draining the mountains and lakes that inundated portions of the valley floor (Galloway and Riley, n.d.).

The valley floor is mostly flat with elevations ranging from near sea level to a few hundred feet above sea level. The Project Area is underlain by the Pleistocene age Riverbank Formation (Rogers 1966). The Riverbank Formation has an estimated age between 2.59 mya to 0.0117 mya and consists of nonmarine sand, locally pebbly, minor silt and clay.

Major rivers near the project include the Stanislaus, Tuolumne, and San Joaquin Rivers, which are located approximately two miles to the north, six miles to the south, and 17 miles to the west of the APE, respectively. The Stanislaus River is one of the largest tributaries of the San Joaquin River and is approximately 96 miles long. The APE is located within the Stanislaus River watershed, which encompasses approximately 1,075 square miles of land draining to the Stanislaus River.

Soils in the APE are San Joaquin sandy loam formed in alluvium derived from mixed but dominantly granitic rock sources on undulating low terraces (Soil Survey Staff 2014a, 2014b). The soils are well drained and moderately deep to a duripan of 20 to 40 inches. The soil horizons consist of loam, clay, and then duripan. Such soils are suitable for a wide range of crops, livestock grazing, pasturage, vineyards, or orchards.

CLIMATE, FLORA/ FAUNA, AND CURRENT LAND USE

The Mediterranean climate near the project area is characterized by hot, dry summers and warm, moist winters. The project area falls within a climate region where the winter precipitation falls as rain, with rare snowfalls. Average annual rainfall is about 20 inches, with the rainy season

generally from November through March. The temperature ranges from 20 to 115 degrees Fahrenheit during the year. Summer highs are usually in the 90s, while winter lows only occasionally are below freezing. When California initially was occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current land use in the project vicinity is mainly rural in character with scattered residences on large parcels, some cattle grazing, and agriculture but is mainly open fields. Historically the region was used for livestock, row crops, field crops, orchards, and small vineyards (Tinkham 1921). The project vicinity is characterized by natural vegetation communities that included grasslands. Other plant species included wildflowers, tarweeds, and thistles. Trees were limited to sycamores, cottonwoods, and willows along stream courses and to groves of oaks in well-watered localities. A large variety of animals were present in abundance in the water and land. With this mosaic of ecological communities, and in view of the ethnographic descriptions of the Northern Valley Yokuts (Kroeber 1925; Wallace 1978) who historically occupied the project area, it would appear the project vicinity would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting-gathering economy with a variety of fish, water birds, small and large mammals, and edible plant species.

POTENTIAL FOR BURIED ARCHAEOLOGICAL DEPOSITS

Located south of the lower Stanislaus River within the Stanislaus River Watershed, soils in the APE formed in alluvium, and overlie older deposits of the Pleistocene Riverbank Formation. The surface deposits are mapped as soils of the Pleistocene and Holocene (10,000 years to present). A model prepared by Rosenthal and Meyer (2004: Map 1) which includes the Project Area, categorizes landforms by age and ranks its buried archaeological deposit sensitivity. Landforms dating from the Pre-Quaternary, Early to Middle Pleistocene, Late Pleistocene, and latest Pleistocene to Early Holocene were determined to have very low sensitivity for buried archaeological deposits. Early to Middle Holocene, Middle to Late Holocene, and Latest Holocene to Historic deposits range from moderate to very high sensitivity. Based on this research, the APE is located within an area of very low sensitivity for buried archaeological deposits.

As noted by Meyer and Rosenthal (2008:162), however, the discovery of buried cultural features or deposits depends on site-specific variables, such as distance to watercourses, micro-topographic variation (e.g., the presence of buried stream channels, former sloughs, springs, or natural levees), and the geomorphic context of known buried archaeological deposits. Prehistoric occupation sites, for example, are mainly found in association with level or nearly level landforms and near stream confluences where at least one stream is perennial (Meyer et al. 2010:140-141).

Prehistoric and ethnographic habitation sites in this part of the Central Valley are primarily found on low mounds and near the banks of large watercourses (see Wallace 1978; Moratto 1984:206; Rosenthal et al. 2007:147, 149). Since the APE is not located near a stable, dependable water source, it seems likely that during the prehistoric and ethnohistoric periods, the area would not have been a favorable locale for temporary or permanent habitation.

Considering the APE is approximately two miles south of a major watercourse, that the APE is situated within previously disturbed areas for roadway construction and agricultural use, and that the anticipated depth of ground-disturbing activities is approximately five feet (1.5 meters) the potential for discovery of archaeological deposits, including buried archaeological deposits, materials, or features, by implementation of this project is considered low.

ETHNOGRAPHY

The Northern Valley Yokuts historically occupied the Project Area (Kroeber 1925; Wallace 1978). They are the northernmost tribe of the Yokuts Indians. Prior to Euro-American contact, Northern Valley Yokuts territory extended from both sides of the San Joaquin River near Mendota north to midway between the Calaveras and Mokelumne Rivers and extended from the Diablo Mountains to the west and the Sierra foothills to the east (Wallace 1978). Neighboring groups included the Plains Miwok, the Costanoan, and the Southern Valley Yokuts.

The San Joaquin and surrounding areas provided the Northern Valley Yokuts with an abundance of natural resources. Sedentary hunter-gathers, their settlements were located on low mounds or near the banks of large watercourses to protect against spring flooding. Subsistence was focused on the resources available such as fish, particularly salmon, waterfowl and harvesting of wild plant food, such as acorns, tule root, and seeds (Wallace 1978).

The Northern Valley Yokuts were organized by tribes averaging approximately 300 individuals and were led by a headman. Most members of the tribe lived in one settlement but smaller communities containing two or three houses also existed. Settlements were occupied for generations with flooding being the main threat to a fully stationary existence. Within each village, two community structures existed, a community lodge used for dances and community functions and a sweathouse (Wallace 1978). Their dwellings were aboveground conical houses made with tule matting.

The Northern Valley Yokuts made both twined and coiled basketry manufacturing a range of intricate woven baskets for a variety of purposes including storing, cooking, eating, winnowing, grinding, and transporting food materials. A wide array of tools and implements used by the Northern Valley Yokuts were created from stone. (Wallace 1978)

The Native American population in the San Joaquin Valley came into contact with Spanish explorers in the late 1700s as the Franciscan missions sought to convert interior peoples with the dwindling of coastal indigenous populations (Wallace 1978). Northern Valley Yokuts were transported to San José, Santa Clara, Soledad, San Juan Bautista, and San Antonio missions in the early 1800s, although many resisted and tried to return to their villages.

During an epidemic in 1833, foreign disease decimated the indigenous populations in the San Joaquin Valley (Cook 1955; Wallace 1978). Soon after the discovery in 1848 of gold in the Sierran foothills and the ensuing Gold Rush, the number of non-indigenous peoples into the California interior and Northern Valley Yokuts territory increased exponentially. While northern San Joaquin was not gold country, thousands of prospectors crossed through it and took note of the rich soils attracting many to farm. As the population of non-indigenous people increased the Yokuts were driven off their hunting and food-gathering lands. With the resulting loss of the majority of their traditional lands, population numbers, and experiencing drastic alterations of their traditional lifeways, surviving Northern Valley Yokuts labored for the ranches or were settled on land set aside for them on the Fresno and the Tule River Reserve (Wallace 1978).

PREHISTORY

The archaeology of California's Central Valley is divided into five temporal periods (Fredrickson 1973, 1974, 1994; Rosenthal et al. 2007) (Table 5). Variation in climate and environment generally coincide with these broad chronological divisions. The transition from the Paleoindian to Lower Archaic periods, for example, corresponds to the drying of Pleistocene pluvial lakes. Within the greater project region, the cultural framework is also divided into three regionally based "patterns" that mark changes in distinct artifact types, subsistence orientation, and settlement patterns.

The Windmiller, Berkeley, and Augustine patterns generally conform to the Middle Archaic, Upper Archaic, and Emergent temporal divisions, and were defined four decades ago by Fredrickson (1973, 1974). Fredrickson initially identified each pattern at specific archaeological sites in the region; namely, the Windmiller site (CA-SAC-107) near the Cosumnes River in Sacramento County, the West Berkeley site (CA-ALA-307) in Alameda County on the east side of the Bay, and the Augustine site (CA-SAC-127) in the Sacramento-San Joaquin Delta. Each pattern or cultural tradition represents a general expression of resource exploitation that began circa 5,550 cal B.C. during the Middle Archaic Period and lasted until historic contact in the early 1800s.

Table 5. Cultural Periods for the Central Valley

Period	Regional Pattern	Dates *
Paleoindian	-	11,500–8,550 cal B.C.
Lower Archaic	-	8,550–5,550 cal B.C.
Middle Archaic	Windmiller	5,550–550 cal B.C.
Upper Archaic	Berkeley	550 cal B.C.–cal A.D. 1100
Emergent Period	Augustine	cal A.D. 1100–Historic Contact

* Timeframes are adjusted for modern calibration curves for radiocarbon dates (cal=calibrated).

PALEOINDIAN AND LOWER ARCHAIC PERIODS (11,500–5,550 CAL B.C.)

Few archaeological sites that predate 5,000 years ago have been discovered in the region. Near the end of the Pleistocene (approximately 9,050 cal B.C.) and during the early Middle Holocene (approximately 5,550 cal B.C.), there were periods of climate change and associated alluvial deposition throughout the central California lowlands (Rosenthal et al. 2007:151). The change in climate and rising sea levels at the start of the Middle Holocene also led to the development of the extensive marshland known as the Sacramento-San Joaquin Delta (Atwater and Belknap 1980). Recent geoarchaeological studies (e.g., Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b; White 2003) have verified that large segments of the Late Pleistocene landscape were removed or buried by periodic episodes of deposition or erosion during the Middle Holocene. These studies confirm estimates advanced by Moratto (1984:214) that Paleoindian and Lower Archaic sites were buried during the last 5,000 to 6,000 years by deposits of Holocene alluvium up to 10 meters thick along the lower stretches of the Sacramento River and San Joaquin River drainage systems.

One of the few Early Holocene sites in the region was discovered buried approximately two meters below the surface within an alluvial fan (Meyer and Rosenthal 1998). Located just above the valley floor in the foothills of eastern Contra Costa County, CA-CCO-637 has a record of human occupation dating to 8,500 years ago during the Lower Archaic Period. Other Lower Archaic Period sites have been excavated in the foothills of Calaveras County, notably at the Skyrocket site (CA-CAL-629/630) (LaJeunesse and Pryor 1996).

MIDDLE ARCHAIC PERIOD/WINDMILLER PATTERN (5550–550 CAL B.C.)

Middle Archaic Period archaeological sites are more common in the foothills, particularly in buried contexts between circa 4,050 and 2,050 cal B.C., and are relatively scarce on the valley floor (Rosenthal et al. 2007:153). The archaeological record indicates Windmiller Pattern populations followed a seasonal foraging strategy and exploited a wide range of natural resources, including a variety of large and small mammals, fish, waterfowl, and plant resources

(Fredrickson 1973; Heizer 1949; Ragir 1972; Moratto 1984). It is also likely that populations occupied higher elevations in the summer and shifted to lower elevations during the winters (Moratto1984:206), and that residential stability along river corridors within the Central Valley increased during this period (Rosenthal et al. 2007:153).

Faunal remains recovered from Windmiller Pattern sites include tule elk, deer, pronghorn, and rabbits, while fish remains include salmon, sturgeon, and smaller fishes. Seeds or acorns apparently formed an important part of the diet during this period (Moratto 1984:201; Rosenthal et al. 2007:153, 155). The remains of acorns and pine nuts have been recovered from foothill sites in Calaveras (CA-CAL-629/630 and CA-CAL-789) and Fresno (CAL-FRE-61) counties, and milling implements found at Windmiller Pattern sites include grinding slabs (metates) and handstones (manos), as well as mortar fragments.

Projectile points common at Windmiller Pattern sites are classified within the Sierra Contracting Stem and Houx Contracting Stem series (Justice 2002:266, 276). Spears, angling hooks, composite bone hooks, and baked clay artifacts that may have been used as net or line sinkers represent the variety of fishing implements found at sites dating to this period. Other baked clay items include pipes and discoids, as well as cooking "stones." Impressions of twined basketry, bone tools, shell beads, and ground and polished charmstones have also been recovered. A variety of grave goods accompanied burials in cemetery areas, which were separate from habitation areas.

The presence during the Middle Archaic of an established trade network is indicated by a variety of exotic cultural materials, including obsidian tools, quartz crystals, and *Olivella* shell beads. Obsidian sources during this period included quarries in the eastern Sierra, Cascades, and North Coast Ranges (Rosenthal et al. 2007:153, 155).

UPPER ARCHAIC PERIOD/BERKELEY PATTERN (550 CAL B.C.–CAL A.D. 1100)

The Windmiller Pattern shifted to a more specialized, adaptive pattern over a 1,000 year period during the Upper Archaic. An increase in mortars and pestles, accompanied by a decrease in slab milling stones and handstones, indicates a shift to a greater reliance on acorns as a dietary staple during the Berkeley Pattern (Fredrickson 1974:125; Moratto 1984:209; Wohlgemuth 2004; Rosenthal et al. 2007:156). Archaeologists generally agree that milling slabs and handstones may have been used primarily for grinding wild grass grains and seeds, while mortars and pestles are better suited to crushing and grinding acorns (Moratto 1984:209–210).

Berkeley Pattern populations continued to exploit a variety of natural resources. Subsistence strategies varied regionally, focusing on seasonally available resources suited for harvesting in bulk, such as salmon, shellfish, deer, rabbits, and acorns (Rosenthal et al. 2007:156). Numerous large shell mounds dating to this period are located near fresh or salt water and indicate

exploitation of a variety of aquatic resources was relatively intensive. The artifact assemblage also demonstrates hunting persisted as an important aspect of food procurement (Fredrickson 1973:125-126). Specialized technologies proliferated, producing numerous types of bone tools, *Olivella* shell beads, *Haliotis* ornaments, and ceremonial blades, among other cultural items.

The accumulations of cultural debris and habitation features, such as rock-lined ovens, house floors, burials, hearths and fire-cracked rock, reflect long-term residential occupation (Bouey 1995:348-349). Mortuary practices continued to be dominated by interment, although a few cremations have been discovered from Berkeley Pattern sites. The stratigraphic record at CA-SAC-107 in the eastern delta shows replacement of the Windmiller Pattern by the Berkeley tradition.

The subsistence pattern characteristic of the Berkeley tradition may have developed initially in the San Francisco Bay region, and then spread to the surrounding coastal areas and central California. As suggested by Moratto (1984:207-211), the Berkeley Pattern is likely related to Eastern Miwok population expansion, spreading from the San Francisco Bay area to the Sacramento Valley and Sierran foothills.

EMERGENT PERIOD/AUGUSTINE PATTERN (CAL A.D. 1100–HISTORIC CONTACT)

A growth in population accompanies a substantial increase in the intensity of subsistence exploitation associated with the Augustine Pattern during the Emergent Period (Moratto 1984:211-214; Rosenthal et al. 2007:157-159). Fishing, hunting, and gathering plant foods continue as the foci of subsistence practices, including intensive harvesting of acorns. The Emergent Period is marked by the introduction of the bow and arrow. Small Gunther barbed series projectile points are present early in the period, with Desert-side notched points occurring later in the period (Rosenthal et al. 2007:158). A unique arrow point style (Stockton serrated) also developed during this period.

The Augustine Pattern toolkit also included bone fish hooks, harpoons, and gorge hooks for fishing. Hopper mortars and shaped mortars and pestles, as well as bone awls used for producing coiled baskets, are also common components of the artifact assemblages. Cosumnes Brownware has been recovered from sites in some parts of the lower Sacramento Valley. The appearance of ceramics is likely an outgrowth and direct improvement on the prior baked clay industry, although baked clay balls, which were probably used for cooking in the absence of stone, remain common.

Accompanying the increase in sedentism and population growth during this period is the development of social stratification, including an elaborate ceremonial and social organization. Cultural items associated with ceremonials and rituals include flanged tubular pipes and baked clay effigies representing humans and animals, among others. Clamshell disk beads were used

as a form of currency and accompanied the development of extensive exchange networks. Mortuary practices included flexed burials, the cremation of high-status individuals, and pre-interment burning of offerings in grave pits (Fredrickson 1973:127-129; Moratto 1984:211). House floors or other structural remains have been discovered at Augustine Pattern sites in the valley and foothills, including ones in Calaveras and Sacramento counties (CA-CAL-1180/H, CA-SAC-29, CA-SAC-267) (Rosenthal et al. 2007:158).

The cultural patterns known from historic period Native American groups in the region are reflected in the subsistence and land use patterns practiced during the Emergent Period, as well as in the increase in sedentism and the development of social stratification typical of the Augustine Pattern (Rosenthal et al. 2007:157-158). According to Moratto (1984:211-214), the Augustine Pattern may represent the southward expansion of Wintu populations. In addition, many of the large villages with house pits that developed along the rivers, major tributaries, and the Delta have been attributed to known ethnographic settlements.

HISTORY

The following sections describe California's post-contact history, which is divided into three periods, followed by the local history for the project area.

SPANISH PERIOD (1769-1822)

Exploration between 1529 and 1769 of Alta (upper) California by Spanish expeditions was limited. The spring of 1769 marks the true beginning of Spanish settlement with the establishment by Gaspar de Portolá at San Diego of the first of 21 missions to be built along the California coast by the Spanish and Franciscan Order between 1769 and 1823. In the fall of 1769, Portolá reached San Francisco Bay. Later expeditions by Pedro Fages in 1772 and Juan Bautista De Anza in 1776 explored the land east of San Francisco Bay (Gunsky 1989:2-3).

The first expedition into the Sacramento Valley was led by Spanish Lieutenant Gabriel Moraga in 1808. Scouting for new mission locations and also searching for runaway Native American neophytes from the coastal missions, they traveled south as far as the Merced River and explored parts of the American, Calaveras, Cosumnes, Feather, Mokelumne, Sacramento, and Stanislaus Rivers to the north. Luis Arguello led the final Spanish expedition into the interior of Alta California in 1817. They traveled up the Sacramento River, past today's City of Sacramento to the mouth of the Feather River, before returning to the coast (Beck and Haase 1974:18, 20; Gunsky 1989:3-4).

MEXICAN PERIOD (1822-1848)

After Mexico gained independence from Spain in 1822, the Mission lands were secularized under the Secularization Act of 1833, but much of the land was transferred to political appointees. A series of large land grants (ranchos) that transferred Mission properties to private ownership were awarded by the various governors of California. Land grants were also awarded in the interior to increase the population away from the coastal areas that were settled during the Spanish Period. Captain John Sutter received the two largest land grants in the Sacramento Valley. In 1839, Sutter founded a trading and agricultural empire called *New Helvetia*, which was headquartered at Sutter's Fort near the divergence of the Sacramento and American rivers, in Valley Nisenan territory.

The Mexican Period also marks the exploration by American fur trappers west of the Sierra Nevada Mountains. Jedediah Smith was the first trapper to enter California; his small party trapped and explored along the Sierra Nevadas in 1826 and then entered the Sacramento Valley in 1827. They traveled along the American and Cosumnes rivers, and camped near the Rosemont section of modern-day Sacramento and Wilton. The explorations by Smith and other trappers resulted in the creation and then circulation of maps of the Sacramento Valley in the 1830s (Gunsky 1989:9-11).

AMERICAN PERIOD (1848-PRESENT)

The Mexican-American War followed on the heels of the Bear Flag Revolt of June 1846 (Ohles 1997). General Andrés Pico and John C. Frémont signed the Articles of Capitulation in December 1847, and with the signing of Treaty of Guadalupe Hidalgo in February 1848, hostilities ended and Mexico relinquished California to the United States. Under the treaty, Mexico ceded the lands of present-day California, New Mexico and Texas to the U.S. for $15 million (Fogelson 1993:10). Within two years following the treaty, California applied for admission as a state.

Gold was discovered in 1848 on the American River at Sutter's Mill near Coloma. One year later, nearly 90,000 people had journeyed to the gold fields of California. California became the 31st state in 1850, and three years later the population of the state exceeded 300,000. In 1854, Sacramento became the state capital. Thousands of new settlers and immigrants poured into the state after the transcontinental railroad was completed in 1869, spurring California's economic growth. The fertile soils in the vast Central Valley combined with the rise in the number of irrigation canals promoted the state's role as a national leader in agricultural production. Products included fruits, vegetables, and nuts, field crops, such as barley, cotton, hay, and rice, and livestock (cattle and sheep).

LOCAL HISTORY

The Project Area is located 2.5 miles from the City of Riverbank which originated as a ferry site along the Stanislaus River. It was established as a town with the arrival of the Santa Fe Railroad in 1895. Historical land use in the project vicinity was mainly agricultural. From the 1850s to the 1870s farmers had no guaranteed water supply and were subject to springtime flooding and summer droughts. The possibility of a drought to ruin a crop was substantial. The development of irrigation systems would help establish Stanislaus County as an agricultural leader. The first irrigation canal was built by Miller and Lux, a livestock and meat plant in the 1870s to help control the water. Chris Tullock developed an irrigation system that delivered a steady stream of water. His canal went from a dam on the Stanislaus River north to Knights Ferry and eventually connected to Oakdale (Waechter and Bunse 2007). The Wright Act passed in 1887 allowed for the creation of the Modesto Irrigation District (MID). MID operated under an elected board with powers to assess, levy, and collect taxes in order to construct canals, dams, and reservoirs that converted water from the Tuolumne River (Waechter and Bunse 2007).

MID Lateral No. 6 located within the APE was built in 1903 as a horse-scraped, trapezoidal shaped, open, earthen canal. The earliest available map, 1916 Riverbank USGS 7.5-minute topographic map, depicts the earthen canal (Figure 3). In 1945 the canal was concrete lined during a 20 year canal improvement program by the MID. The 1953 Riverbank topographic map depicts three structures in the vicinity of the Project Area but the general area remains largely undeveloped (Figure 4).

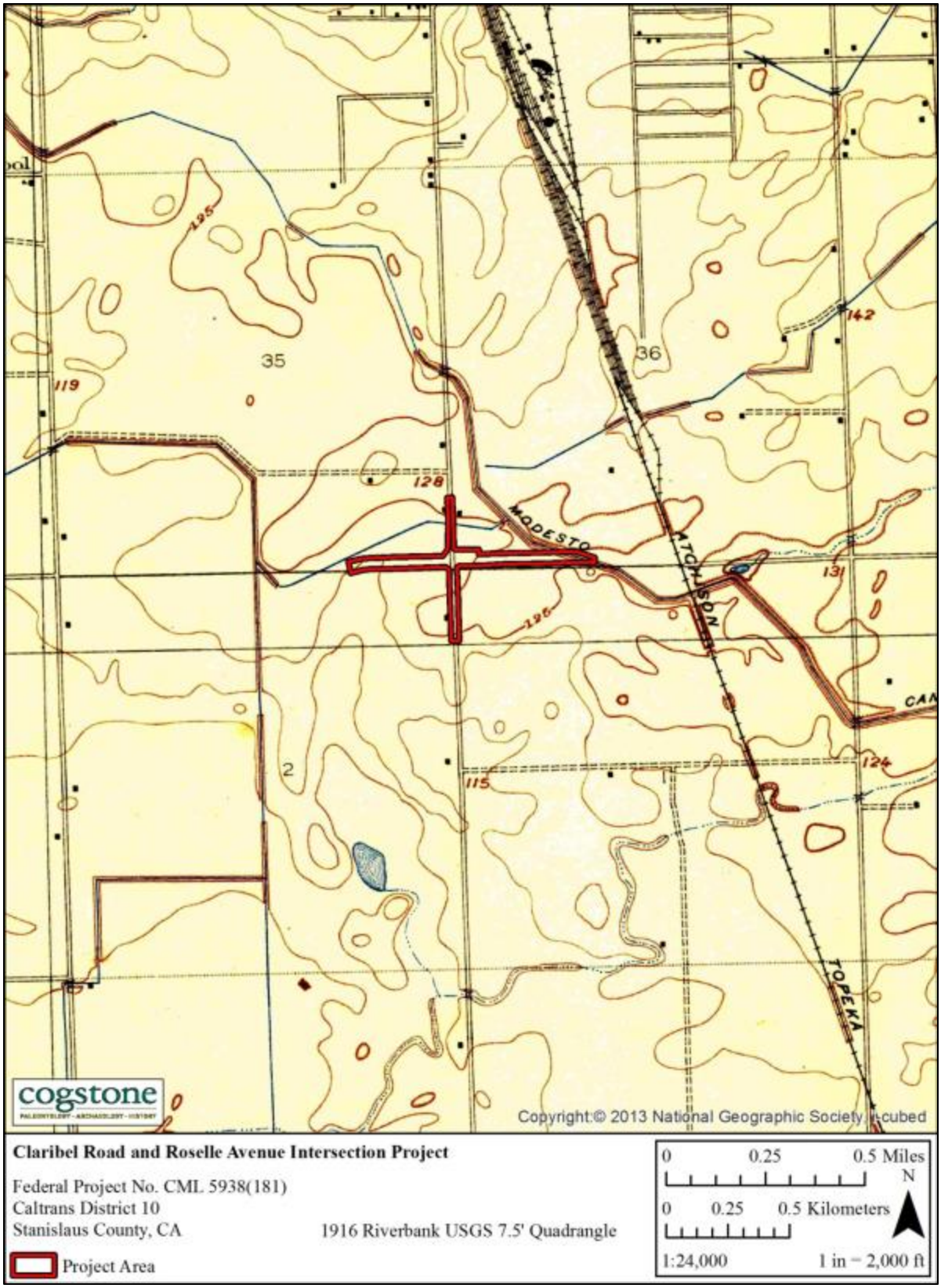

Figure 3. 1916 Riverbank Topographic Map

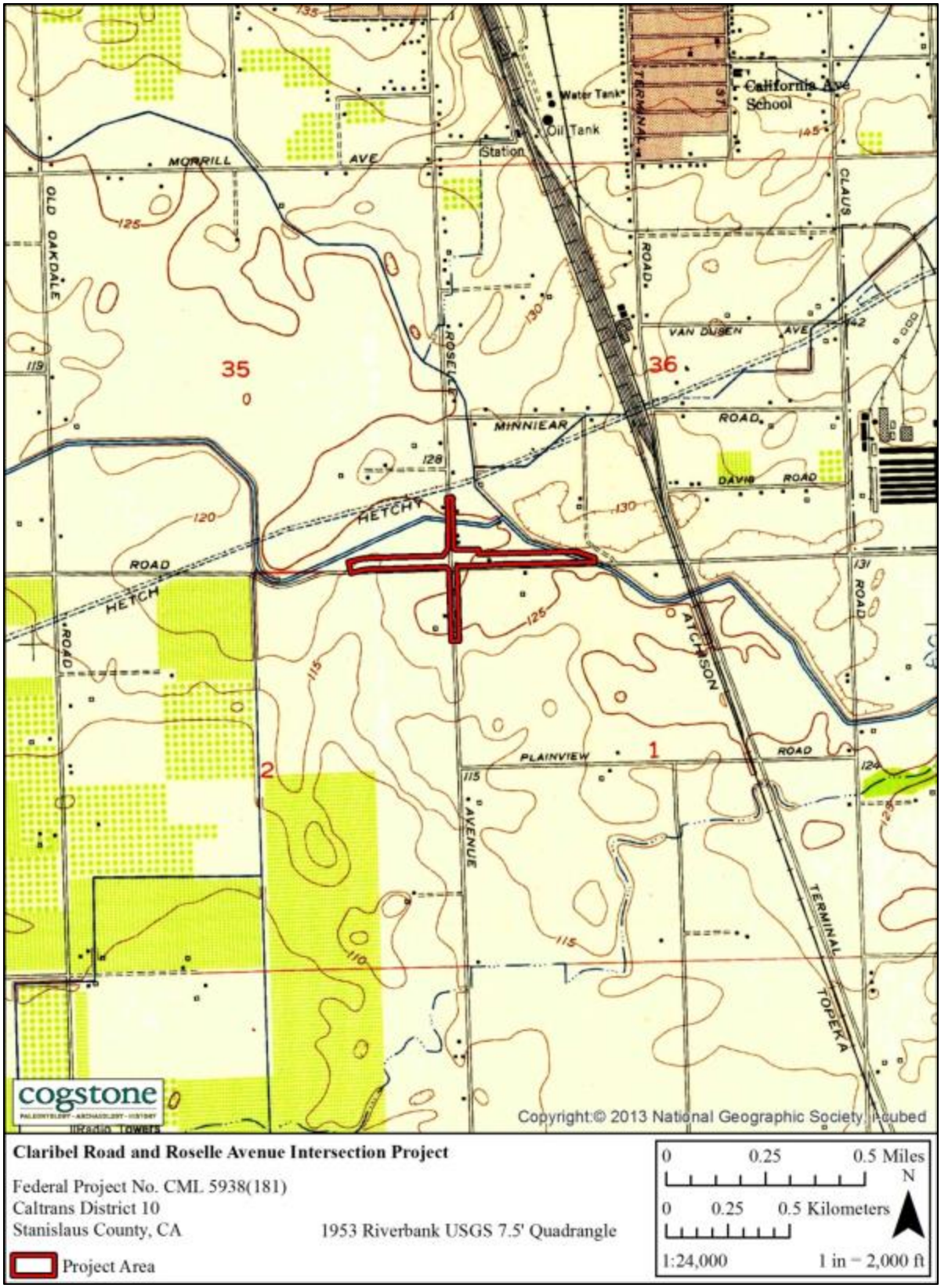

Figure 4. 1953 Riverbank Topographic Map

FIELD SURVEY METHODS AND RESULTS

The cultural resources survey consisted of walking parallel transects, spaced at five meter intervals within the APE while closely inspecting the ground surface. Existing disturbances (e.g., rodent burrows, ditches) were examined for artifacts or buried cultural deposits.

Portions of the APE extend into either fenced off open fields, fallow fields, yards of private residences, or active pastures. Three parcels (APNs 075-014-026, 075-025-011 and 084-001-023) are active agricultural fields that have been recently plowed or were currently being plowed at the time of the survey. Only APN 075-014-026 was surveyed within the field. The other two APNs, 084-001-023 and 075-025-011, were surveyed from the shoulder of the County's existing right-of-way using a single transect due to lack of permission to enter by the landowners (Figure 5). The remaining parcels were surveyed using two five meter transects utilizing east-west transects along Claribel Road and north-south transects along Roselle Avenue. Along the southwestern half of Roselle Avenue, there were portions of the right-of-way that extended off the shoulder of the road approximately 10 feet into the adjacent parcels. These portions were surveyed in a single transect off-set approximately one meter from the road.

The existing segments of Claribel Road and Roselle Avenue within the APE are completely hardscaped, including the shoulders; thus visibility within the paved roadways was negligible (Figure 6). Visibility was excellent (100 percent) with the exception of APN 083-002-023 and APN 083-002-024. Ground surface visibility within APN 083-002-023was poor (0 percent) due to tall, thick knee-high grass (Figure 7). APN 083-002-024 has short, grazed grass pasture measuring approximately nine meters from the western edge of the parcel, after which the vegetation becomes tall, thick knee-high grass with poor (0 percent) ground visibility.

The soil throughout the APE is sandy loam with light reddish-brown coloration. It belongs to the San Joaquin soil series, which consist of well and moderately-well drained soils that formed in alluvium, derived from mixed but dominantly granitic rock sources.

The remains of a small watercourse were identified along the eastern edge of APN 083-002-023 (Figure 8). This is likely an abandoned irrigation ditch due to the presence of a sluice gate at the northern edge of the parcel at Claribel Road. Large dirt moving activities by the land owners are also present on this parcel.

Historic-era architectural resource P-50-000075 was identified within the northern end of the APE (Figure 9). This resource is MID Lateral No 6, a historic-era irrigation canal that is currently empty of water. No other cultural resources were identified within or immediately adjacent to the APE.

Figure 5. Survey Coverage Map

Figure 6. View of paved shoulder at Roselle Avenue, view toward south.

Figure 7. Example of poor visibility within APN 083-002-023 , view toward south.

Figure 8. Dry creek bed within APN 083-002-023, view toward south.

Figure 9. P-50-000075 MID Lateral No 6, view toward west.

STUDY FINDINGS AND CONCLUSIONS

No prehistoric resources were previously recorded and none were observed during survey. Geomorphological factors indicate potential for buried prehistoric deposits is low. One historical architectural resource, P-50-000075, the Modesto Irrigation District Lateral No. 6 is located within the APE. P-50-000075 was recently evaluated in May 2014 and found ineligible for the NRHP though survey evaluation by LSA for the *Historical Resources Evaluation Report for the North County Corridor New State Route 108, Stanislaus County,* which includes the APE. No additional historic-era resources and no historic-era archaeological resources were observed during survey.

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if the site [s] cannot be avoided by the project. If buried cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

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APPENDIX A. QUALIFICATIONS

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

SHERRI GUST, RPA
Principal Investigator for Paleontology/Archaeology

EDUCATION

1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles
1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS

Ms. Gust is a Qualified Principal Paleontologist and Registered Professional Archaeologist (RPA) with 35 years of experience in paleontological and cultural resources management. She is a certified/qualified principal paleontologist in all California cities and counties that maintain lists. She holds California and Nevada BLM paleontology and cultural permits. At Cogstone, she has managed numerous transportation-related projects and task orders for transit authorities, municipalities and Caltrans. She has experience with interchange, roadway, bridge, and grade separation projects involving assessments and monitoring. Ms. Gust has expertise in conducting technical studies in support of PA/ED documents. She prepares project-related Paleontological Identification Report (PIR), Paleontological Evaluation Report (PER), Paleontological Mitigation Plan (PMP), Archaeological Survey Report (ASR), and Historic Property Survey Report (HPSR) documents. She has managed multiple projects with Caltrans/FHWA/FTA as the lead agency and is knowledgeable of the processes and procedures required to obtain NEPA, NHPA Section 106 and CEQA environmental approvals. Ms. Gust meets national standards in archaeology set by the Secretary of Interior and the standards outlined in Attachment 1 to Caltrans Section 106 Programmatic Agreement with the FHWA; and Chapter 1, Volume 8, on paleontology and Chapter 2 on cultural resources, of Caltrans' Standard Environmental Reverence (SER). She is accepted as a principal investigator for both prehistoric and historical archaeology by the State Office of Historic Preservation's Information Centers. She has special expertise in the identification and analysis of fossil bone. Ms. Gust's expertise in the paleontology of the western United States includes research, survey, assessment of impacts/effects, significance criteria and determinations, management plans, mitigation implementation, fossil identification and analysis.

SELECTED PROJECTS

Sheldon Road/Bradshaw Road Intersection Improvements, Caltrans District 3, Elk Grove, Sacramento County, CA. Provided an appended Archaeological Survey Report (ASR) to document the cultural resources identification efforts and a Historic Properties Survey Report (HPSR). Sub to PMC. Principal Archaeologist. 2013

US 101 at Walnut Avenue Interchange Improvement, Caltrans District 5, Greenfield, Monterey County, CA. The project involved replacing the overcrossing, providing turn lanes to the ramps, and widening the off-ramps. Prepared Paleontological Identification Report. Sub to PMC. Principal Paleontologist. 2011

SR 178 at Morning Drive Widening and Interchange Improvement Project, Caltrans District 6, Bakersfield, Kern County, CA. Six mile road widening and interchange development project east of Bakersfield. Performed archaeological and paleontological record searches, background research, and survey; also Native American consultation. Prepared Historic Property Survey Report (HPSR) with appended Archaeological Survey Report (ASR) and a combined Paleontological Identification and Evaluation Report (PIR/PER) with Paleontological Mitigation Plan (PMP). Lead Agency TRIP. Sub to PMC. Project Manager and Principal Paleontologist and Archaeologist. 2007-2009

I-15/La Mesa/Nisqualli Road Interchange Improvement Project, Caltrans District 8, Victorville, San Bernardino County, CA. Oversaw Phase I archaeological survey, record search, and Native American consultation; prepared supplemental Archaeological Survey Report (ASR), and Historic Property Survey Report (HPSR). Sub to Parsons Brinckerhoff. Project Manager and Principal Archaeologist. 2009-2010

US 101/Palo Comado Canyon Road Interchange and Bridge Improvement, Caltrans District 7/FHWA, Agoura Hills, Los Angeles County, CA. Completed Archaeological Survey Report (ASR), Historic Property Survey Report (HPSR), Paleontological Identification and Evaluation Report (PIR/PER), and Paleontological Mitigation Plan (PMP). Sub to Galvin Preservation Associates. Project Manager and Principal Paleontologist and Archaeologist. 2011

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

MOLLY VALASIK
Registered Professional Archaeologist

EDUCATION

2009 M.A., Anthropology, Kent State University, Kent, Ohio

2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

SUMMARY QUALIFICATIONS

Valasik is a Registered Professional Archaeologist with six years of professional field and academic research experience. Valasik is GIS proficient and currently supervises digitizing and mapping at Cogstone with the use of advanced Trimble software in addition to serving as Principal Archaeologist.

SELECTED PROJECTS

Kings River Bridge, Tulare, CA. Caltrans District 6. Performed paleontological record searches and background research. Cogstone prepared a Paleontological Mitigation Plan to Caltrans requirements, conducted sensitivity training for personnel, provided on-call monitoring and submitted a Paleontological Mitigation Report to the Tulare County Resource Management Agency. Prepared GIS maps for the Paleontological Mitigation Plan for this 2.8 acre bridge construction project. GIS Specialist. 2012

Interstate-15, Cenda Ditch Bridge and Wheaton Wash Bridge Replacement. FHWA/BLM/Caltrans District 8. Prepared GIS maps for the combined Paleontological Evaluation Report and Paleontological Identification Report for the Project Study Area located on 15.5 acres along westbound Interstate-15 in eastern San Bernardino County. GIS Specialist. 2011

Caltrans District 6 On-Call. Conducted field work, construction monitoring and associated GIS mapping for the SR 99 widening project at Arboleda Drive in Merced. Paleontology Field Technician/GIS Specialist. 2012

Caltrans District 7 On-Call. Participated in two task orders under subcontract to Galvin Preservation Associates for the LOSSAN North Rail Improvements Project, Ventura County Segment (Caltrans Division of Rail and the Federal Railroad Administration). Conducted archaeological record search, digitized cultural site locations in GIS, georeferenced 8 geologic maps, and created paleontology sensitivity maps based on the Potential Fossil Yield Classification (PFYC) scale. Archaeology/Paleontology Field Technician/GIS Specialist. 2011

State Route 178 Widening, Kern County. Caltrans District 6. Performed four-day intensive archaeological and paleontological survey of the 8 mile project area and associated GIS mapping. Relocated previously recorded lithic scatter and determined the site to be destroyed by construction activities. Archaeology/Paleontology Field Technician/GIS Specialist. 2008-2012

U.S. Highway 101 Express Lanes Project. FHWA/Caltrans District 4/Santa Clara Valley Transportation Authority, Santa Clara, CA. The 38 mile linear project entails freeway widening and HOV lane conversion along US 101 and SR 85. Cogstone surveyed the 1,911 acre APE, prepared an Archaeological Survey Report (ASR) under CEQA and NHPA Section 106 and prepared a Paleontological Evaluation Report and Mitigation Plan (PERMP). A for PERMP.2012-2013.

Date Palm Drive/Whitewater River Bridge Widening. Caltrans District 8, Cathedral City, Riverside County, CA. The project involved literature and Sacred Lands searches, survey, and technical report sor widening of Whitewater River bridge (Historic Property Survey Report [HPSR] and Archaeological Survey Report [ASR]). Portion of APE on Agua Caliente Indian Reservation land; Narrative HPSR, Section 106 compliance, and consultation with Tribal Historic Preservation Officer (THPO) in lieu of SHPO. As GIS Specialist, prepared GIS maps for approximately 20 acres. 2012-2013

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

NANCY SIKES, PH.D., RPA
Principal Investigator for Archaeology

EDUCATION

1995	Ph.D., Anthropology, University of Illinois, Urbana-Champaign
1990	M.A., Anthropology, University of Illinois, Urbana-Champaign
1985	B.A. with distinction, Anthropology/Museology, University of Nevada, Reno

SUMMARY QUALIFICATIONS

Dr. Sikes has over 20 years of cultural resources experience and has completed hundreds of projects, technical reports, and chapters for environmental documents (EIS, EIR, EA, IS) in compliance with federal, state, and local regulations and agencies. She also has specialized training in preparing agreement documents under Section 106 of the NHPA and federal project and historic preservation law, and exceeds the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Dr. Sikes has prepared numerous reports in support of transportation projects throughout California, and understands the complexity of the approval process by regulatory agencies, such as FWHA/Caltrans, FTA and FRA. She also provides expertise and overall quality control on complex cultural resources projects.

SELECTED PROJECTS

Douglas Blvd/Grant Line Rd Intersection Improvements, Caltrans District 3/FWHA, City of Rancho Cordova, Sacramento County, CA. Literature and Sacred Lands searches, survey, and technical reports (HPSR and ASR) for intersection widening project. Section 106 compliance. Sub to PMC. Principal Archaeologist. 2013-2014

Kentucky Avenue Widening and Complete Streets Project, Caltrans District 3 / FWHA, City of Woodland, Yolo County, CA. Literature and Sacred Lands search, survey of 20-acre APE, and technical reports [Historic Property Survey Report (HPSR), Archaeological Survey Report (ASR) and Historical Resources Evaluation Report (HRER)] for a 2- to 4- lane widening and improvement project. Section 106 compliance. Sub to PMC. Principal Archaeologist. 2013-2014

McBean Parkway Bridge, Caltrans District 3, City of Lincoln, Placer County, CA. The City of Lincoln is replacing the existing bridge on McBean Parkway (formerly SR 193) over the Auburn Ravine utilizing. Federal Highway Bridge Program (HBP) funding, processed through Caltrans Local Assistance, District 3. Cogstone prepared APE map, constraints memo, HPSR/ASR/HRER and PIR/PER in compliance with NEPA and Section 106 of NHPA. Sub to Quad Knopf. Project Manager. 2014

U.S. Highway 101 Express Lanes Project, FHWA/Caltrans District 4, Santa Clara Valley Transportation Authority, Santa Clara, CA. Archaeological Survey Report (ASR) for 38-mile project and Phase III Data Recovery Plan for seven National Register-eligible archaeological sites within area of direct impact. Section 106 compliance. Sub to URS. Principal Investigator. 2012-2014

US 101/Palo Comado Canyon Road Bridge Project, FHWA/Caltrans District 7, Agoura Hills, Los Angeles County, CA. Completed literature and Sacred Lands searches, survey, and technical reports for Caltrans District 7 for U.S. Highway 101 improvements (Historic Property Survey Report [HPSR] and Archaeological Survey Report [ASR]); Section 106 compliance. Cogstone also addressed the paleontological resources for this project. Sub to Galvin Preservation Associates. Principal Investigator. 2010-2011

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

DYLAN STAPLETON, M.A.
Archaeologist

EDUCATION

2004 M.A., Anthropology, California State University, Sacramento

2000 B.A., Anthropology (minor in Geology), California State University, Sacramento

SUMMARY QUALIFICATIONS

Mr. Stapleton is an experienced cultural resources field and laboratory technician. He has fourteen years of professional experience conducting surveys, mitigation monitoring, site recordation, data recovery, and acting as crew chief. He is knowledgeable of the compliance requirements under CEQA, NEPA, and NHPA Section 106. He is a contributor to technical reports and environmental documents (EIS, EA, EIR, IS, ND). His experience includes record searches, identification, research and laboratory analysis of prehistoric and historic artifacts as well as conducting Section 106 architectural evaluations. He utilizes Garmin handheld GPS unit and the Trimble Geo XT GPS unit to conduct mapping and site recordation.

SELECTED PROJECTS

Three Bridge Replacement Projects, Caltrans District 6 / Madera County Road Department, Madera County, CA. Conducted field survey to support technical reports (HPSR/ASR set) for three bridge replacement projects, including built-environment studies (HRER) for two of the projects. Section 106 compliance. Sub to Quad Knopf. Archaeological Field Technician. 2013-2014

Surveys for PG&E Wood Pole Replacement Project. Santa Clara and Mountain View, CA. Parus Consulting, Inc. Field Surveys. Archaeological Field Technician. 2012-2013

Alviso Adobe, Milpitas, Santa Clara County, CA. While working with designated Native American monitor, responsible for monitoring daily construction activities and writing up corresponding monitoring logs and photo records. Archaeological Monitor.

U.S. Coast Guard CAMPSPAC Transmitter Station, Bolinas, Marin County, CA. While working with designated Native American monitor, responsible for monitoring daily construction activities and writing up corresponding monitoring logs and photo records. Archaeological Monitor.

Timber Hills Forest Energy Project, Shasta County, CA. Conducted an intensive pedestrian survey of varying sized parcels within the project corridor and recorded previously unknown archaeological sites using California DPR site recordation forms. Archaeological Field Technician.

Central California Clean Energy Transmission Project, Kings, Kern, Madera, Fresno and Tulare Counties. Conducted an intensive pedestrian survey, conducted multiple record searches at the Information Center, created a database of record search results, helped draft an updated cost estimate report and was responsible for recordation of new cultural resources. Archaeological Field Technician.

Freeport Regional Water Project, Freeport Regional Water Authority, Sacramento and San Joaquin Counties, CA. Responsible for monitoring daily construction efforts, conducting additional surveys and writing up the addendum reports for additional APE modification requests as they occurred during the course of the project, maintaining and submitting daily logs and ensuring contractors were in compliance with NEPA and the MOU and prepared the memorandums and cultural resources annual technical reports pertaining to the project. Archaeological Monitor.

Highway 395 Fiber Optic Transmission Line, Carson City, Douglas County, Nevada; Alpine, Mono, Inyo, San Bernardino County, CA. Conducted an intensive pedestrian survey of the project corridor and recorded previously unknown archaeological sites using California and Nevada. Archaeological Field Technician.

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

SAMANTHA SCHELL
Archaeologist/Osteologist

EDUCATION

1994 B.A., Anthropology (Physical), University of California, Berkeley

SUMMARY QUALIFICATIONS

Ms. Schell has 20 years of experience in cultural resource management in California. Ms. Schell has exper in the identification and analysis of human and faunal remains. She has wide ranging experience in both prehistoric and historic period archaeology. Ms. Schell meets national standards in archaeology set by the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. She conducts surveys, monitoring, excavation at the testing and data recovery levels, prehistoric and historical site recording, prehistoric and historical artifact identification and preparation for curation. Ms. Schell has participated in numerous studies, prepared compliance reports and is particularly skilled in quality control.

SELECTED PROJECTS

Cool Cave Quarry Environmental Assessment, Tracts 1 & 2, U.S. Bureau of Reclamation/Teichert Aggregates, near Auburn, El Dorado County, CA. Records search, intensive-level pedestrian survey of the 16-acre site on federal lands within the Auburn State Recreation Area, and preparation of an archaeological survey investigation report. Sub to Burleson Consulting. Archaeologist. 2015

Mather Rails to Trails, Rancho Cordova Public Works Department, Caltrans District 3, Sacramento County, CA. The project involves constructing a bike path next to an existing railroad track between Folsom Boulevard and Lemay Street. Services include a records search, NAHC consultation, intensive-level pedestrian survey of the APE, cultural resources inventory, and preparation of an Archaeological Survey Report (ASR) and Historic Properties Survey Report. Sub to PMC. Principal Investigator. 2015

Rancho Cordova Elementary School Bicycle and Pedestrian Improvements, City of Rancho Cordova Department of Public Works, Caltrans District 3, Rancho Cordova, Sacramento County, CA. The project involves constructing sidewalks, crosswalks, and Class III bike routes connecting to Zinfandel Dr. and the Cordova Lane neighborhood within the City's existing right-of-way. Services include a records search, NAHC consultation, intensive-level pedestrian survey of the 1.2-acre APE, cultural resources inventory, and preparation of an Archaeological Survey Report (ASR). Sub to PMC. Principal Investor. 2015

Hidden Oaks Country Club Specific Plan and TT 18869, Chino Hills, San Bernardino County, CA. Managed cultural and paleontological resources assessments, assisted the City with SB 18 compliance, and responded to the cultural section of the project EIR comment for this proposed 537-acre residential project with minimum 5-acre per lot constraints. Services included records search, Sacred Lands search, NAHC consultation, field survey, and mitigation recommendations. Archaeologist. 2015-2016

Hat Creek Curves Correction, Caltrans District #2, CA-SHA-128, Hat Creek, Shasta County, CA. Conducted monitoring during tree removal and excavation for curve correction of HWY 299 between Burney and Fall River Mills. Archaeological Monitor. 2015

APPENDIX B. CONFIDENTIAL CHRIS RECORD SEARCH RESULTS

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324
Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

10/7/2014

Records Search File No.: 9112N
Access Agreement: #33
Project: Claribel Road/Roselle Avenue Intersection

Molly Valasik
Cogstone Resource Management
1518 West Taft Ave.
Orange, CA 92865

mvalasik@cogstone.com

Dear Ms. Valasik:

The Central California Information Center received your record search request for the project area referenced above, located on the Riverbank USGS 7.5' quadrangle in County. The following reflects the results of the records search for the project area and a one-mile radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps

Summary Data:

Resources within project area:	1 (see list attached)
Resources within one mi radius:	25 (see list attached)
Reports within project area:	2 (see list attached)
Reports within mi radius:	19 (see list attached)

Resource Database Printout (list):	☒ enclosed ☐ not requested ☐ nothing listed
Resource Database Printout (details):	☒ enclosed ☐ not requested ☐ nothing listed
Resource Digital Database Records:	☒ 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 Records:	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory (HPDF)	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☐ not requested	☒ nothing listed
GLO and/or Rancho Plat Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Shipwreck Inventory:	☒ not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp		
Soil Survey Maps:	☒ not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx		

The following details the results of the records search:

Prehistoric or historic resources within the project area:

(1) P-50-000075, Modesto Irrigation District Lateral No. 6. Record copy attached (on CD); see also Resource Database List and Detail printouts.

(2) Portions of the following historic maps attached for your use:

GLO Plats	Township/Range	Sheet No.	Dates
	2S/9E	44-114	1853-1854
	2S/10E	44-117	1857-1873
	3S/9E	44-186	1853-1854
	3S/10E	44-187	1853-1854

Official Map of the County of Stanislaus, California (1906)

Riverbank 7.5' (1953) (1969)

Prehistoric or historic resources within a mile radius of the project area: Twenty-five resources. Please refer to the attached Resource Database List and Resource Database Detail printouts, and the Excel Spreadsheet (on CD). Please also refer to the HPDF (03-20-2014:35-36)—many of the resources in the radius are referenced.

Resources known to have value to local cultural groups: None have been formally reported to the CCIC.

Previous investigations within the project area: Two investigations: ST-051567 and 07244. Please refer to the attached Report Database List and Report Database Detail printouts, and the Excel Spreadsheet (on CD).

Previous investigations within a one-mile radius of the project area: Nineteen reports on file. Please refer to the attached Report Database List and Report Database Detail printouts, and the Excel Spreadsheet (on CD).

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.

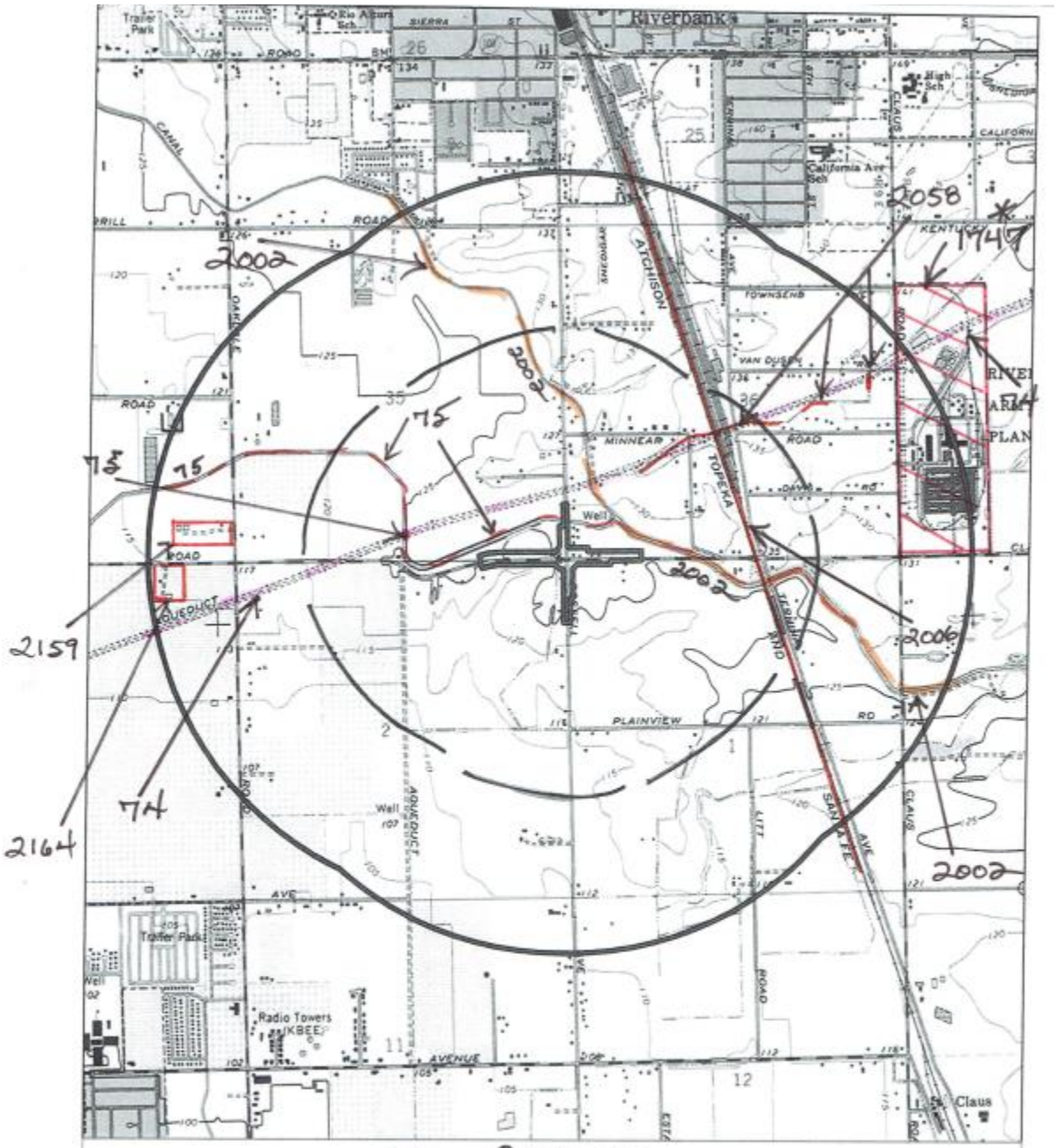
Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

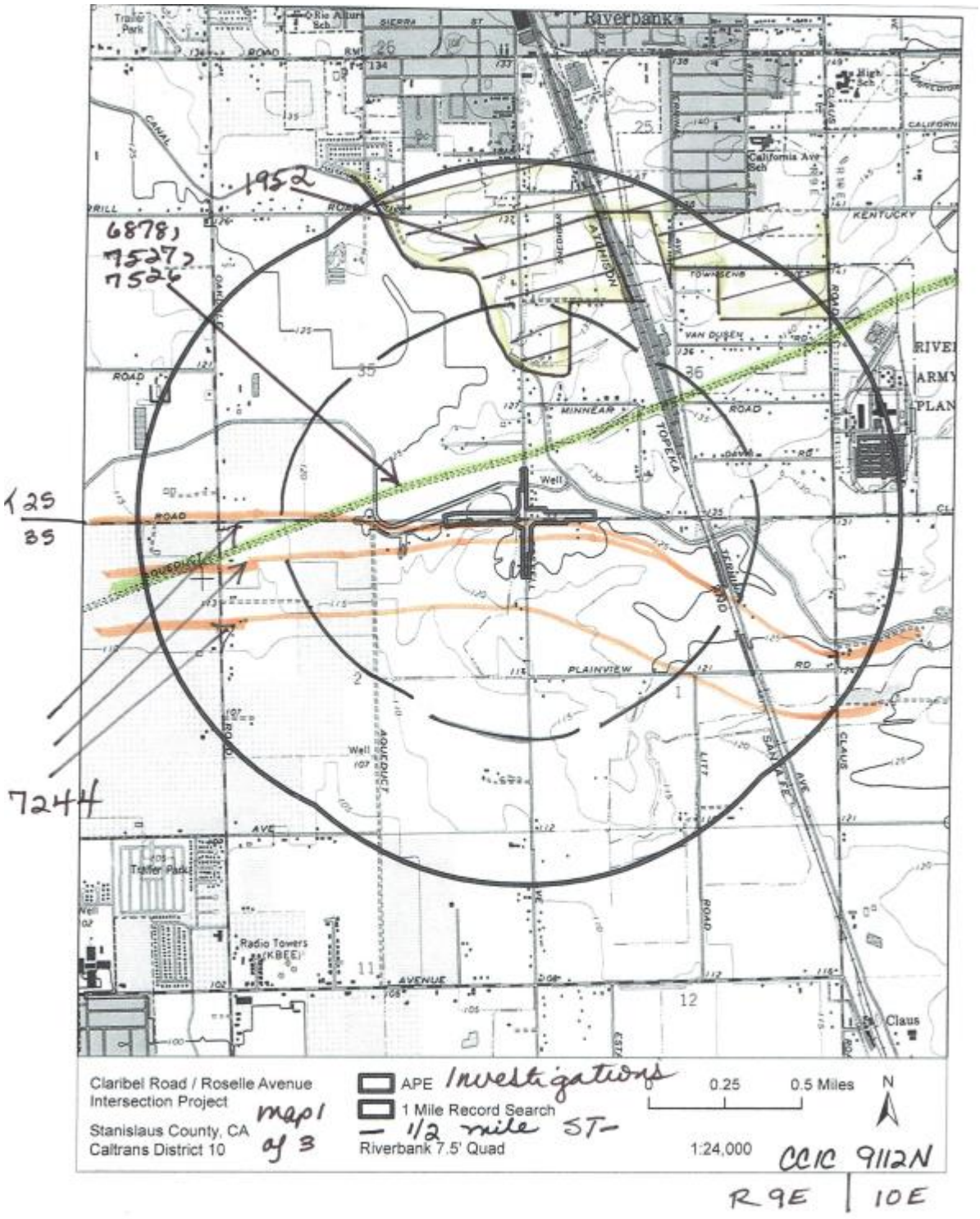
Note: Billing will be transmitted separately by our Financial Services office ($664.90), payable within 60 days of receipt of the invoice.

Sincerely,

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System



* see also P-50-1725-1734, 1741-1746, 1748-1749 (re P-50-1747)


Riverbank
1952
6878)
7527?
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125
35
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Well
Well
Radio Towers
(KBEE)
Claus
Claribel Road / Roselle Avenue
Intersection Project
Stanislaus County, CA
Caltrans District 10
map 1 of 3
APE Investigations
1 Mile Record Search
— 1/2 mile ST—
Riverbank 7.5' Quad
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CCIC 9112N
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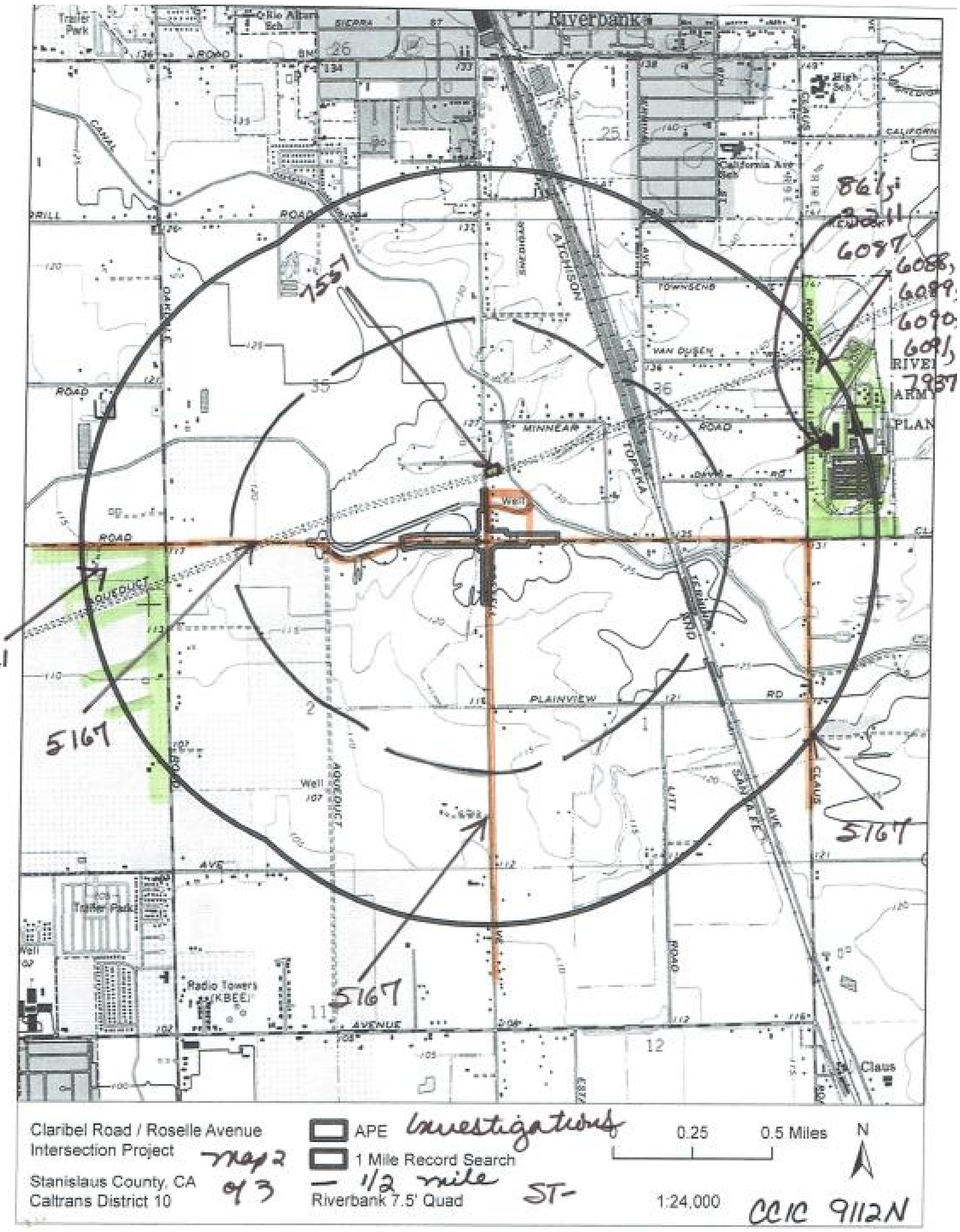
Claribel Road / Roselle Avenue
Intersection Project
Stanislaus County, CA
Caltrans District 10
APE
1 Mile Record Search
Riverbank 7.5' Quad
0 0.25 0.5 Miles
1:24,000
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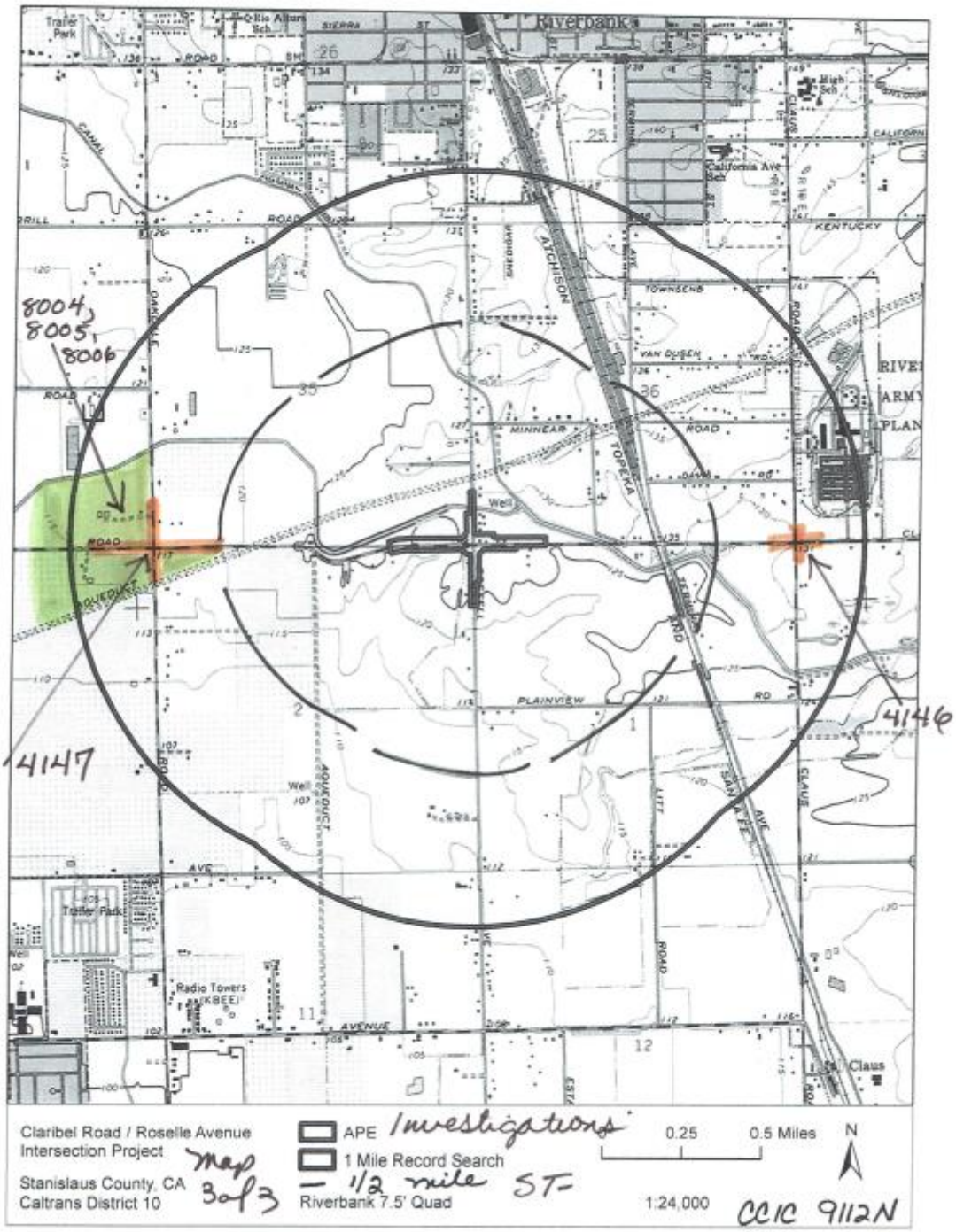
Investigations
map 2 of 3
1/2 mile
ST-
CCIC 9112N
Riverbank
6121
5167
1551
861
6087
Well
PLAINVIEW
MINNEAR
TOWNSEND
VAN DUSEN
Trailer Park
Radio Towers (KBEE)
Claus


Riverbank
8004
8005
8006
4147
4146
Claribel Road / Roselle Avenue
Intersection Project
Stanislaus County, CA
Caltrans District 10
APE
1 Mile Record Search
Riverbank 7.5' Quad
Investigations
Map 3 of 3
1/2 mile
ST-
0.25
0.5 Miles
1:24,000
N
CCIC 9112N

APPENDIX C. CONFIDENTIAL SITE RECORDS

P-50-000075

4/96

SITE NAME: Lateral 6, Modesto Irrigation District, Stanislaus County
SITE NUMBER: LG-34
QUAD SHEET: "Salida Quadrangle," USGS: 1969, photorevised 1987
PIPELINE LOCATION: Milepost 209.8, Mainline

Description of Feature

Site LG-34 is located at the point where Modesto Irrigation District Lateral 6 crosses the proposed Mojave Pipeline APE. Lateral 6 is one of Modesto Irrigation District's main distribution facilities. (For a brief history of the Modesto Irrigation District, see Section 2.2 above.) It runs essentially east to west, connecting irrigated farm lands in and around Salida to the district's main canal. JRP recorded two comparison points on this lateral in order to better understand the nature and context of the resource. These points are located on about one mile to the east and to the west of LG-34 and are numbered LG-34(n) and LG-34(s). The lateral is either concrete lined or concrete line and gunited throughout this portion, and gradually diminishes in width from 31 feet at the eastern and central sites to 28 feet at the west. It passes around the southern edge of the small town of Salida; within the APE the lateral flows under the SPRR, old Highway 99, and modern freeway 99, all of which are carried over it on bridges or culverts (**Photograph 1**). At the comparison sites the lateral is crossed by county roads carried on short span bridges (**Photographs 2 and 3**). Within the APE Lateral 6 is adjacent to farmland on the southwest, a residential area to the northwest, and a light industrial and commercial area on the northeastern and southeastern side of Old Highway 99. The eastern comparison point, LG-34(n) runs through an area of orchards that is being encroached upon on the south by residential areas of northern Modesto (**Photograph 3**). The western comparison point, LG-34(s) serves an area still in orchard and field crop production (**Photograph 2**).

History of Feature

Lateral 6 was one of the original laterals that formed the second level of the irrigation water distribution system within the Modesto Irrigation District. The district constructed its main canal and laterals after resolution of a period of internal conflict and confusion in the 1890s, when district residents opposed to the system challenged the district's legal right to sell bonds and impose assessments necessary for financing construction. The problems led to delays that lasted into the early 1900s. By April 1903 the district's system was far enough constructed to begin irrigation, if on a limited scale. Little water was used that year, but in the years that followed the acreage watered gradually increased.

The lateral was originally a dirt-lined canal, constructed using hand tools and horse-drawn equipment. The district installed concrete or gunite linings to its laterals in the 1920s and 1930s. The APE site and its comparison points are lined at the present time. The lining and gunited surfaces do not appear to date to the district's earliest efforts at lateral lining. At site LG-34, Old Highway 99 is carried on a bridge built in 1927; the lateral lining at this point appears younger than the bridge, and was installed around the existing span (Adams 1929, 181-184; USGS: **Salida Quadrangle**, Edition of 1915; 1969, photorevised 1987).

P-50-000075

Evaluation of Feature

Lateral 6 is part of the original irrigation system of one of California's first Wright Act irrigation districts. It has played a significant role in the agricultural development of the area it serves, and is sufficiently old to be considered for the National Register on the basis of its age and local importance under Criterion A, because of its association with California's earliest efforts at irrigation district formation. Its period of significance, therefore, dates to the time of its original construction, ca. 1900-1908. At that time the lateral was dirt lined and ran through an area of farms and orchards. In the following years, however, the lateral has lost integrity of construction, workmanship, materials, setting and feeling owing to the district's lining projects, the installation of more modern bridges and culverts after the period of significance, and the encroachment of urban development into what had been agricultural lands. Furthermore, lined irrigation laterals are common features in the San Joaquin Valley, so Lateral 6 is not a unique example of a segment of an early irrigation system and thus it does meet the requirements of Criterion C. It is not eligible for the National Register.

P-30-000075

CANAL FEATURE INVENTORY FORM

Developed by JRP Historical Consulting Services

PROJECT: Mojave Natural Gas Pipeline, Northern Extension Project
MILEPOST: 209.8

LOCATION NO: LG-34
PHOTO DATE: May 28, 1993

1. **Name of Feature:** Lateral No. 6

2. **Location of recordation:** At the intersection of Lateral No. 6 and the Southern Pacific railroad tracks near old Highway 99.

3. **Other locations for recording this feature:** LG-34(n) and LG-34(s)

4. **Structures at or near this location:** A concrete culvert conveys Lateral No. 6 under the railroad tracks.

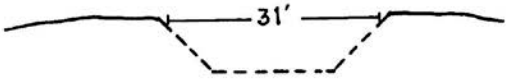
5. **Setting at this location:** Lateral No. 6 passes underneath the railroad tracks in a concrete culvert. To the east a 1927 concrete bridge carries Old Highway 99 over the lateral. The concrete lining appears younger than the bridge because of the way it formed around the bridge abutments. To the east of the railroad tracks and Old Highway 99 are commercial buildings. Northwest of the APE is a neighborhood of older houses (ca. 1920s). Open fields are located to the southwest of the APE, with a new subdivision being built further to the southwest.

6. **Integrity considerations for this feature:** The concrete-lined lateral passes under the railroad in what appears to be a modern culvert.

7. **Attributes at this location (measurements in feet):**

   Top width: 31
   Bottom width: Unable to observe due to high flows
   Height or Depth: Unable to observe due to high flows
   Material: Concrete

8. **Sketch, in cross section:** Looking west



P-50-000075

CANAL FEATURE INVENTORY FORM

Developed by JRP Historical Consulting Services

PROJECT: Mojave Natural Gas Pipeline, Northern Extension Project
MILEPOST: N/A

LOCATION NO: LG-34(s)
PHOTO DATE: May 28, 1993

1. **Name of Feature:** Lateral No. 6

2. **Location of recordation:** At the intersection of Dale Road and Lateral No. 6, roughly 1.6 miles east of the APE.

3. **Other locations for recording this feature:** LG-34 and LG-34(n)

4. **Structures at or near this location:** A concrete bridge carries Dale Road traffic over Lateral No. 6.

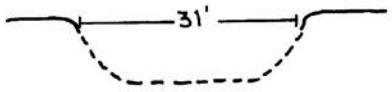
5. **Setting at this location:** This recordation point is in an area in transition on the northern edge of Modesto. Suburban developments are underway to the south of the site. An orchard is located northwest of this site, and Dale Nursery is situated to the northeast. On the southeast side of this site is a Knights of Columbus Clubhouse and a Mormon church.

6. **Integrity considerations for this feature:** The lateral is gunited over its original concrete lining.

7. **Attributes at this location (measurements in feet):**

   Top width: 31
   Bottom width: Unable to observe due to high flows
   Height or Depth: Unable to observe due to high flows
   Material: Gunite

8. **Sketch, in cross section:** Looking west



P-50-000075

CANAL FEATURE INVENTORY FORM

Developed by JRP Historical Consulting Services

PROJECT: Mojave Natural Gas Pipeline, Northern Extension Project
MILEPOST: N/A

LOCATION NO: LG-34(n)
PHOTO DATE: May 28, 1993

1. **Name of Feature:** Lateral No. 6

2. **Location of recordation:** At the intersection of Lateral No. 6 and Covert Road, about 1.3 miles west of the APE.

3. **Other locations for recording this feature:** LG-34 and LG-34(s)

4. **Structures at or near this location:** A concrete bridge carries Covert Road traffic over the lateral. A gate is located immediately north of bridge and serves the orchard located there.

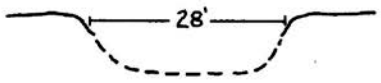
5. **Setting at this location:** This recordation site is surrounded by open fields or orchards. A large farm complex is located to the southwest of the site. Open fields border the site to the south, and orchards border the lateral on the north. Housing developments are located about a mile to the east.

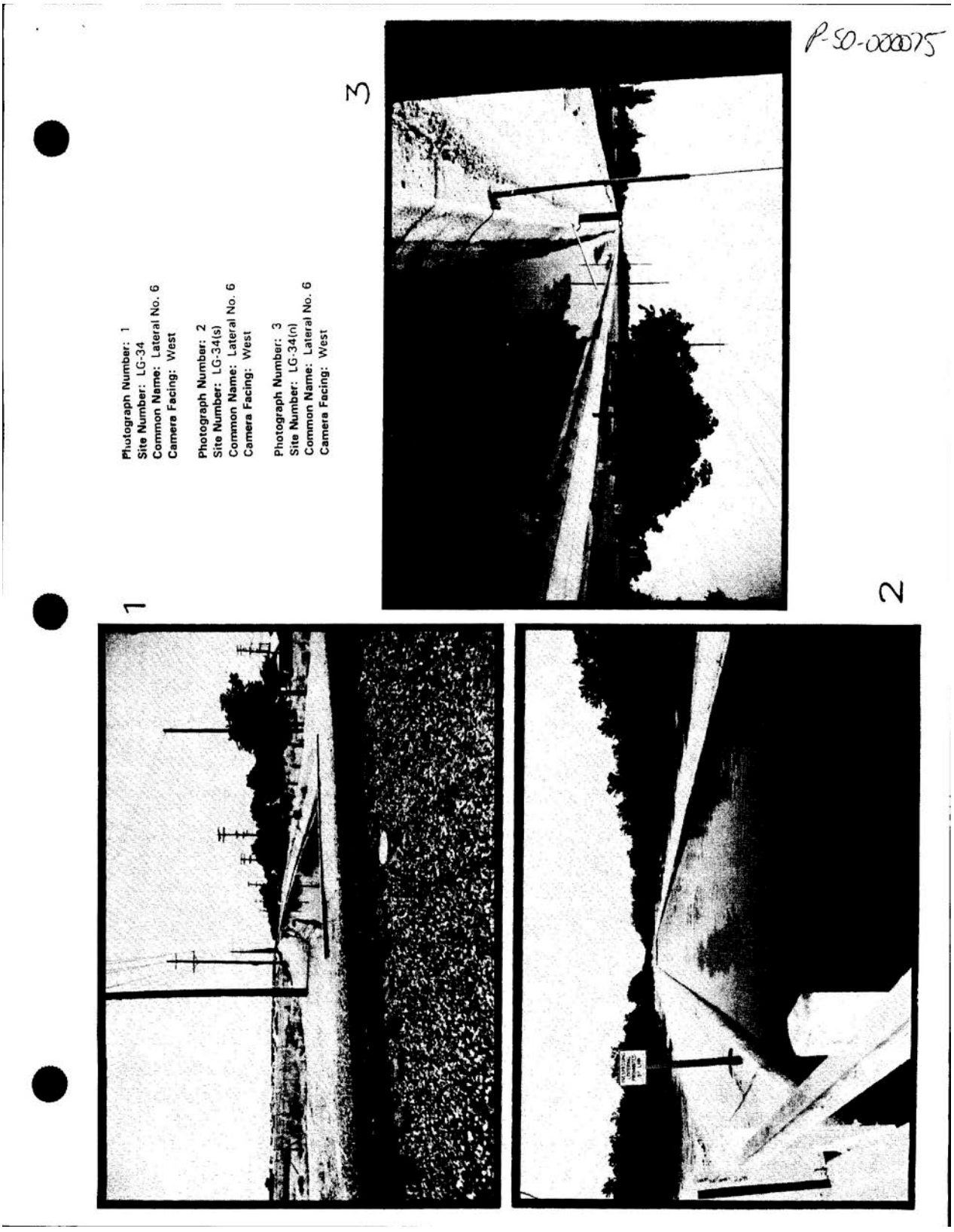
6. **Integrity considerations for this feature:** Concrete lining and modern maintenance have altered the original canal.

7. **Attributes at this location (measurements in feet):**

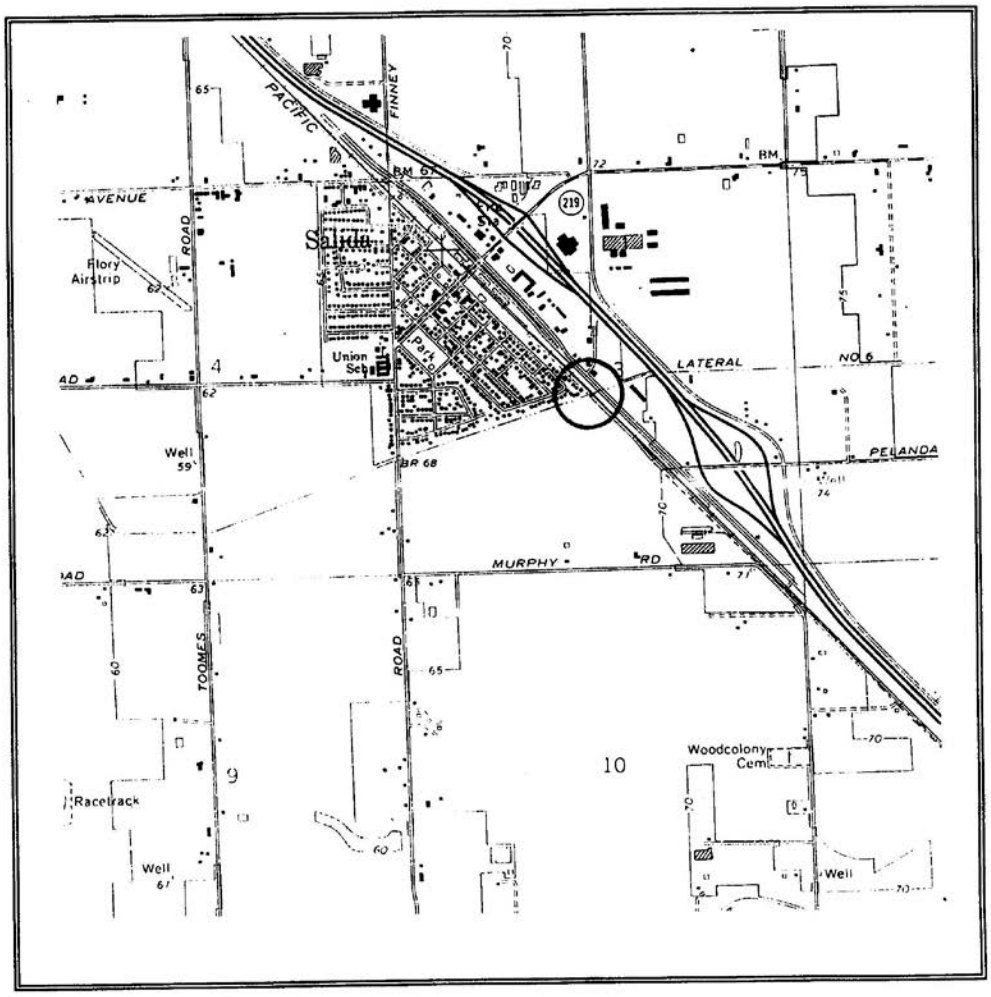
   Top width: 28
   Bottom width: Unable to observe due to high flows
   Height or Depth: Unable to observe due to high flows
   Material: Concrete

8. **Sketch, in cross section:** Looking west




P-50-000075
Photograph Number: 1
Site Number: LG-34
Common Name: Lateral No. 6
Camera Facing: West
Photograph Number: 2
Site Number: LG-34(s)
Common Name: Lateral No. 6
Camera Facing: West
Photograph Number: 3
Site Number: LG-34(n)
Common Name: Lateral No. 6
Camera Facing: West
1
2
3

P-50-000075



SITE NAME: Lateral 6, Modesto Irrigation District, Stanislaus County
SITE NUMBER: LG-34
QUAD SHEET: "Salida Quadrangle," USGS: 1969, photorevised 1987
PIPELINE LOCATION: Milepost 209.8, Mainline

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-50-000075 (new seq)
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 of 2 + map *Resource Name or #: (Assigned by recorder) Lateral No. 6 (MID)
P1. Other Identifier:
*P2. Location: __ Not for Publication ✓ Unrestricted
*a. County Stanislaus and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Riverbank Date T 2S; R9E; __ ¼ of S½ of Sec 35; MD B.M.
c. Address City Zip
d. UTM: (Give more than one for large and/or linear resources) Zone 10, 680778 mE/ 4177387 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) 4175700 ? 2/2012
Crosses the San Joaquin Pipelines around MP 72.00.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Lateral No. 6 branches from the Modesto Main Canal and runs west toward Salida. It crosses underneath the San Joaquin Pipeline around MP 72.00. The lateral conveys water from the Modesto Main Canal to the area around Salida. It is 31 feet wide at the Modesto Main Canal and tapers to 28 feet at its western end. may not be reflected on USGS maps?

Lateral No. 6 was completed in 1903 by the Modesto Irrigation District, which was organized in 1887 as the California's second irrigation district (Hatoff et al., 1995). It plays a secondary role within the district as a branch of the main irrigation canal. It was originally dirt-lined and constructed with hand tools and horse-drawn equipment (Hatoff et al., 1995). As part of a district-wide project, Lateral No. 6 was lined with either concrete or gunite during the 1920s or 1930s.

*P3b. Resource Attributes: (List attributes and codes) HP20 – canal/aqueduct
*P4. Resources Present: __ Building ✓ Structure __ Object __ Site __ District __ Element of District __ Other (Isolates, etc.)

P5b. Description of Photo: (view, date accession #) Lateral No. 6, looking south from MP 70.26, 10/30/07

*P6. Date Constructed/Age and Source: ✓ Historic __ Prehistoric __ Both
1903 (Hatoff, 1995)

*P7. Owner and Address:
Modesto Irrigation District
P.O. Box 4060
Modesto, CA 95352-4060

*P8. Recorded by: (Name, affiliation, and address)
Carey & Co.
460 Bush Street
San Francisco, CA 94108

*P9. Date Recorded:
8/13/2007

*P10. Survey Type: (Describe)
Intensive Survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") See [7527]
San Francisco Public Utilities Commission, San Joaquin Pipeline Existing Conditions Report, 2007.

*Attachments: __ NONE __ Location Map __ Continuation Sheet ✓ Building, Structure, and Object Record
__ Archaeological Record __ District Record __ Linear Feature Record __ Milling Station Record __ Rock Art Record
__ Artifact Record __ Photograph Record __ Other (List):

DPR 523A (1/95) *Required Information

State of California The Resources Agency Primary # P-50-000075
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

Page 2 of 2 *Resource Name or # (Assigned by recorder) Lateral No. 6

B1. Historic Name: Lateral No. 6
B2. Common Name: Lateral No. 6
B3. Original Use: Water Conveyance B4. Present Use: Water Conveyance
*B5. Architectural Style: N/A
*B6. Construction History: (Construction date, alterations, and date of alterations)
Constructed 1903.

*B7. Moved? ✓No Yes Unknown Date: Original Location:
*B8. Related Features:

B9a. Architect: Unknown b. Builder: Modesto Irrigation District
*B10. Significance: Theme Central Valley Irrigation Systems Area Northern California
Period of Significance 1903 Property Type Canal Applicable Criteria n/a

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Lateral No. 6 does not appear to be eligible for the National Register or the CRHR. Lateral No. 6's inferred period of significance dates to 1903 when it was constructed. It does not appear to be significant enough for listing in the NRHP under Criteria A, B, C and/or D or the CRHR under Criteria 1, 2, 3 and/or 4. Although it belongs to the Modesto Irrigation District, the second such district in California, it functions on a secondary level to the Modesto Main Canal. Furthermore, research has not found Lateral No. 6 to have any significant associations with any specific person or events of historic significance. The lateral does not have significance for its engineering or workmanship, since it does not represent a significant engineering design. It did not introduce a design innovation into the overall irrigation district. Finally, it does not appear that the lateral has the potential to yield information important to the prehistory or history of the local area, state, or the nation. Although Lateral No. 6 retains some integrity related to its inferred period of significance, the resource lacks historic significance, and therefore, does not appear to be eligible for the NRHP or the CRHR.

B11. Additional Resource Attributes: (List attributes and codes) HP20 – canal/aqueduct
*B12. References:

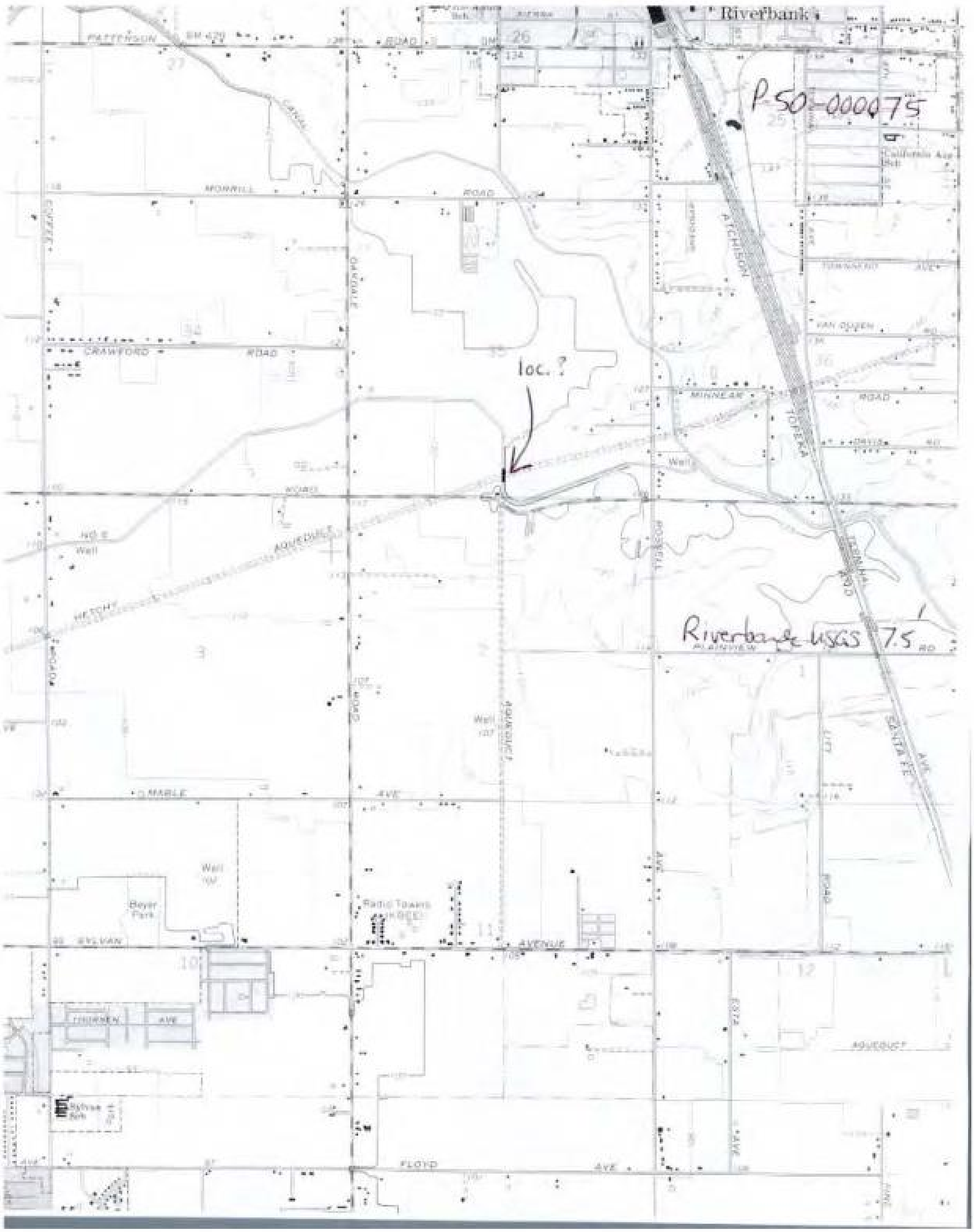
Hatoff, Brian, Barbara Voss, Sharon Waechter and Steven Wee. Cultural Resources Inventory Report for the Proposed Majave Northward Expansion Project. Prepared for the Mojave Pipeline Company. On file at the CCIC, File # 2759, 1995.

B13. Remarks:

*B14. Evaluator: E. Schultz & A. Vanderslice, Carey & Co.
*Date of Evaluation: 8/13/2007

(This space reserved for official comments.)

DPR 523B (1/95) *Required information



P-50-000075
loc. ?
Riverbank USGS 7.5'
Riverbank
PATTERSON
ROAD
MORRILL
ROAD
CANAL
CRAWFORD
ROAD
OAKDALE
ATCHISON
TOPEKA
SANTA FE
AVE
MINNEAR
ROAD
VAN DUSEN
AQUEDUCT
HETCHY
Well
MABLE
AVE
SYLVAN
AVENUE
Beyer Park
Radio Towers
THORSEN
AVE
FLOYD
AVE
ROSELLE
PLAINVIEW

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-50-000075
HRI #
Trinomial
NRHP Status Code:
Other Listings
Review Code Reviewer Date

***Resource Name or #:** Modesto Irrigation District (MID) Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9 10/14

P1. Other Identifier: None

***P2. Location: *a. County** Stanislaus **County/Route/Postmile:** Stanislaus/Claribel Road

b. Address Claribel Road, between Coffee Road and Oakdale Road

City North of Modesto in unincorporated area of the county **Zip** 95357

***c. UTM: USGS Quad:** Riverbank Quadrangle 7.5, 1969, photo revised 1987 **d. UTM:**

***e. Other Locational Data (APN #)** N/A

***P3a. Description:** (Briefly describe resource below)
This segment of the Modesto Irrigation District (MID) Lateral No.6 canal is located in Section 3 of Township 3S Range 9E, MDM and Section 34 of Township 2S Range 9E, MDM. The segment is an approximately 50-foot-wide linear section that bisects Claribel Road 0.4 miles east of Coffee Road and extends approximately 1,100 feet in length. This canal segment is a part of the larger MID Lateral No. 6 canal, which extends approximately 20 miles from the MID Main Canal (Section 36, Township 2S Range 9E, MDM) to east of McHenry Avenue. (see Continuation Sheet, page 3)

***P3b. Resource Attibutes:** HP20

****P4. Resources Present:** ___Building X Structure ___Object ___Site ___District X Elements of District ___Other

P5b. Description of Photo: Lateral No.6 segment from Claribel Road; view NW

***P6. Date Constructed/Age:** 1904/c.1933-1965

X Historic ___Prehistoric ___Both

***P7. Owner and Address:**
Modesto Irrigation District
1231 11th Street
Modesto, CA 95352

***P8. Recorded by:**
Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle Suite 240
Sacramento, CA. 95834

***P9. Date Recorded:** May 10, 2011

***P10. Type of Survey:** X Intensive ___Reconnaissance ___Other

Describe: Lateral No. 6 was surveyed between Claribel Road and Oakdale Road

***P11. Report Citation:** *Historic Resrouces Evaluation Report, ClaribelRoad Widening Project, Stanislaus County* prepared for Stanislaus County Department of Transportation and Caltrans Distirct 10.

***Attachments:** ___NONE ___Map Sheet ___Continuation Sheet ___Building, Structure and Object Record
X Linear Resource Record ___Archaeological Record ___District Record ___Milling Station Record ___Rock Art Record
___Artifact Record ___Photograph Record ___Other (List):

Caltrans DPR 523B (11/94) Page 1 of 7
*Required Information.

State of California — The Resources Agency: Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#:

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference No.: 9

***Resource Identifier:** MID Lateral No. 6 canal segment ***NRHP Status Code:** 2D2

B1. Historic Name: Same

B2. Common Name: None **County/Route/Postmile:** Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

B3. Original Use: Irrigation Canal **B4. Present Use:** Irrigation Canal

***B5. Architectural Style:** N/A

***B6. Construction History:** Constructed in 1904 as an earthen lined canal; lined with concrete 1955; lined with gunite c.2000

***B7. Moved?** X No ___ Yes ___ Unknown **Date:** N/A **Original Location:** N/A

***B8. Related Features** (describe below):
Stanislaus County Bridge 38C0113 spans MID Lateral No. 6 carrying Claribel Road over the canal approximately 0.4 miles east of Coffee Road. A concrete and metal weir is located to the northeast of the bridge. A dirt two-track access road in the ownership of the MID is located on the east side of the canal between Claribel and Oakdale Roads.

B9a. Architect: Engineer – Modesto Irrigation District **B9b. Builder:** Modest Irrigation District

***B10. Significance: Theme:** Agriculture: Irrigation and Fruit Farming **Area:** Stanislaus County

Period of Significance: 1904-1955 **Property Type:** Canal (HP20) **Applicable Criteria:** Criteria A

The MID canal system appears to have not been previously surveyed or evaluated for listing in the National Register or California Register. In 2007 LSA Associates completed a study of a segment of the Dr. Moore Lateral canal, also a component of the larger MID canal system, near State Route 108 north of Modesto. The study concluded that although the MID canal system has been modified over time the canal segment was eligible for listing on the California Register and was considred a part of a historic resource for purposes of CEQA.

(see Continuation Sheet, page 3)

B11. Additional Resource Attributes: None

B12. References:
(see Continuation Sheet, page 3)

(Sketch Map with north arrow required.)

See Sketch map attached.

B13. Remarks:
None

B14. Evaluator: Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle, Suite 240
Sacramento, CA 95834

Date of Evaluation: May 29, 2011

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #:
HRI #/Trinomial

CONTINUATION SHEET

X Continuation ____Update

Caltrans Map Reference No.: 9

Resource Identifier: MID Lateral No. 6 canal segment

County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

P3a. Description: (Continued)
MID Lateral No.6 is part of the larger MID canal system that extends approximately 208 miles. MID Lateral No. 6 is one of eight laterals within the MID system constructed in 1904 to provide field irrigation to small farms and orchards north of the city of Modesto in the area known locally as Paradise Valley.

MID Lateral No.6 was constructed in 1904 as an earthen canal. Between 1933 and 1965 the entire 208 mile MID canal system was either concrete lined or replaced with metal pipe. The MID Lateral No. 6 segment at Claribel Road was concrete lined in 1955. The concrete lined portions of MID Lateral No. 6 were covered in gunite c. 2000. The MID lateral No. 6 canal segment consists of an open concrete lined canal that crosses Claribel Road at Bridge 38C0113, which spans the canal and carries Claribel Road over the canal structure

B10. Significance: (Continued)
The MID Lateral No. 6 canal segment at Claribel Road was evaluated following the guidance provided in the Caltrans Standard Environmental Reference (SER), Volume 2, Chapter 7, Section 7-8.5. Evaluation of the Lateral No.6 canal segment was carried out in the context of the property as a whole (i.e. the MID canal system). Under the historic context "Irrigation and Fruit Farming" in Stanislaus County, (see Mead & Hunt, Inc. *Historic Resources Evaluation Report, Claribel Road Widening Project*, Stanislaus County, 2011) the MID canal system was found to be the earliest irrigation system in the county and one of the earliest in the San Joaquin Valley of California. It played a pivotal role in the shift of the local agrarian economy from wheat and grain production, carried out on large ranch holdings, to a fruit and ground vegetable agrarian economy, carried out on small holdings and dependent on irrigation. This shift is an important local trend under the theme of agriculture. The MID canal system is assumed to be significant under *Criterion A* of the National Register and *Criterion 1* of the California Register for its contribution to important trends in agricultural development in Stanislaus County. Under *Criterion C/3* the MID research does not suggest that the canal system is representative of important engineering or design of irrigation canal systems in the Stanislaus County area or the larger San Joaquin Valley. It was originally an earthen ditch structure and is now a combination of concrete lined open channel and manufactured pipe. It is not considered significant or assumed eligible under *Criterion C* of the National Register or *Criterion 3* of the California Register.

The character-defining features of the MID Lateral No. 6 canal segment include: the trough shape of the canal; expanses of an open linear channel separated by a crossing that has historically covered a portion of the canal (Stanislaus County Bridge No. 38C0113); the conveyance of water for irrigation purposes; the original alignment within the MID canal system; and a weir.. Other features of irrigation canal systems (e.g. diversion structures, conduits, flow control devices, cleansing devices, etc.) are not present within this segment of MID Lateral No. 6.

The MID Lateral No. 6 canal segment has been modified over time as part of MID upgrade and maintenance activities. The cement lining of the canal occurred within the period of significance. The gunite applied to the canal falls outside the period of significance and impairs its integrity of materials and workmanship. However, under *Criterion A/1* it retains the other aspects of integrity and retains its ability to convey its association with important trends in agricultural development in Stanislaus County. The MID Lateral No. 6 canal segment retains sufficient integrity and is recommended as a contributing element of the MID canal system should the MID canal system ever be determined eligible for inclusion in the National or California Register. For purposes of this project it is treated as eligible for purposes of the National and California Registers.

B12. References:

Barnes, Dwight. *The Greening of Paradise Valley, Modesto: Modesto Irrigation District, 1887-1987.* Modesto, Calif.: Modesto Irrigation District 1987.

Elliot and Moore. *History of Stanislaus County, California with Illustrations.* San Francisco: Elliot and Moore, 1881.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #:
HRI #/Trinomial

CONTINUATION SHEET

X Continuation ____Update

Caltrans Map Reference No.: 9

Resource Identifier: MID Lateral No. 6 canal segment **County/Route/Postmile:** Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

LSA, Associates. "A Cultural and Paleontological Resource Study for the Ladd Road/McHenry Avenue Intersection Operational Improvement Project." Unpublished study for Stanislaus County Department of Public Works, 2007.

Ray, Herndon Carroll. *Stanislaus County 1854-1954: A Century of Growth*. Modesto, Calif.: Stanislaus County School District, 1955.

Santos, Robert. "Chronology of Stanislaus County through 1912." http://library.csustan.edu/bsantos/chronology.html.

Telephone conversation with David Covey, Modesto Irrigation District. 27 May 2011.

Vaught, David. *After the Gold Rush: Tarnished Dreams in the Sacramento Valley*. Baltimore: Johns Hopkins University Press, 2007.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary #
HRI#
Trinomial

Resource Identifier: MID Lateral No.6 canal segment **Caltrans Map Reference No.:** 9
County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road
L1. Historic and/or Common Name: Same
L2a. Portion Described: Entire Resource X Segment Point Observation **Designation:** N/A
b. Location of point or segment: (Provide below UTM coordinates, legal description, other useful locational data. Show the field-inspected area on Location Map)
The canal segment is located on Claribel Road, 0.4 miles east of the intersection of Claribel Road and Coffee Road, northeast of Modesto, Stanislaus County, California. It is located on the section line between Section 3 of Township 3S Range 9 E, MDM and Section 34 of Township 2S Range 9E, MDM. The canal segment UTM Coordinates are Zone 10 N679037 E4175689 N
L3. Description:
The MID Lateral No. 6 canal segment consists of a 50-foot-wide and 1,100-foot-long segment of the larger (approx. 20 mile) MID Lateral No. 6, one of eight lateral canals that extend off of the MID Main Canal to form an irrigation system that is 208 miles in extent. The canal segment at Claribel Road is an open concrete-lined canal, which is spanned by Stanislaus County Bridge 38C0113. The bridge has been previously evaluated by Caltrans as not eligible for listing in the National Register. The bridge was not constructed as a part of the MID irrigation system.
L4. Dimensions:
- **a. Top Width:** 50 feet
- **b. Bottom Width:** 30 feet
- **c. Height or Depth:** 6 feet
- **d. Length of Segment:** 1,100 feet

L4e. Sketch of Cross-Section (include scale) **Facing:**
See Sketch Map attached

L5. Associated Resources: (list below)
Metal and concrete weir located to the northeast
L6. Setting: (briefly describe below)
The MID Lateral No. 6 canal segment crosses under Claribel Road, a rural road that follows the section lines between Township 2S and Township 3S Range 9E, USGS Riverbank Quadrangle. The setting in the vicinity of the canal segment is agricultural with fruit orchards and open cultivated fields.
L7. Integrity Considerations: (briefly describe below)
The MID Lateral No.6 canal segment was originally an earthen canal. It was concrete lined in 1955 as part of a larger MID program of lining canals within the system with concrete. The concrete lining was accomplished within the period of significance of the canal system and is a reflection of MID upgrade and maintenance of the irrigation system. The concrete lining was sprayed with gunite c. 2000.

L8a. Photograph, Map or Drawing
See Sketch Map

L8b. Description of Photo/Map/Drawing (View, scale, etc.)
View of Lateral No. 6 at Calirbel Road bridge; view southwest.

L9. Remarks:
None

L10. Form Prepared by: (Name, affiliation, and address)
Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle
Sacramento, CA 95834

L11. Date: June 1, 2011

Caltrans DPR 523E (1/95)
*Required information

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State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

Resource Identifier: MID Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9

County/Route/Postmile: Stanislaus County/Coffee Road

Map Name: USGS Riverbank Quadrangle ***Scale:** 1:24000 ***Date of Map:** 1969; Photo Revised 1987

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

*Resource Identifier: MID Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9
County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road
*Drawn by: Aerial View *Date: June 5, 2011

Caltrans DPR 523K (1/95)
*Required information

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State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-50-000075 (update)
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code
Reviewer
Date

Page 1 **of** 14 ***Resource Name or #:** Lateral No. 6
P1. Other Identifier: P-50-000075

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
- ***a. County** Stanislaus
- ***b. USGS 7.5' Quad:** *Riverbank, Calif.* Date: 1968 **T, R of Sec** (See L2)
  Address City Zip
- c. UTM: See Continuation Sheet
- d. Other Locational Data: N/A

***P3a. Description:**
On May 27, 2014, LSA visited the Modesto Irrigation District (MID) Lateral No. 6 to update and expand upon previous evaluations by Mead & Hunt 2011 and Carey & Co. 2007. The canal segments recorded in the original evaluations appeared as described with no apparent alterations.

The MID Lateral No. 6 begins at the Don Pedro Reservoir and heads west, terminating at the Stanislaus River. The history of two discontinuous segments, totaling 1.93 miles, and their associated features is presented in this record (see Continuation Sheet, Linear Feature Record and Location Map).

***P3b. Resource Attributes:** HP20. Canal
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:
Photograph 1: View southeast of Features A and B. Taken 05/27/14.

***P6. Date Constructed/Age and Source:**
☒ Historic ☐ Prehistoric ☐ Both
1903 – 1903 Modesto Irrigation District Map

***P7. Owner and Address:**
Modesto Irrigation District
1231 11th Street
Modesto, CA 95352

***P8. Recorded by:**
Nicole Jordan and Mario Scalzo
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677
p. 916-630-4600 / f. 916-630-4603

***P9. Date Recorded:** 5/27/2014

***P10. Survey Type:** Intensive Survey

***P11. Report Citation:**
Vallaire, Katie and Nichole Jordan
2014 *Historical Resources Evaluation Report for the North County Corridor New State Route 108, Stanislaus County, California.* LSA Associates, Inc., Rocklin, California.

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☒Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☒ Other (List): Sketch Map

DPR 523A (9/2013) ***Required information**

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary # P-50-000075 (update)
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

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*NRHP Status Code 6Z
*Resource Name or # Lateral No. 6

B1. Historic Name: MID Lateral No. 6
B2. Common Name: Same
B3. Original Use: Irrigation Canal
B4. Present Use: Same
*B5. **Architectural Style:** N/A
*B6. **Construction History:** MID Lateral No. 6 was constructed in 1903 as a horse scraped, trapezoidal shaped, open, earthen canal. The alignment of the canal investigated here has not changed since 1903. MID launched a 20-year canal improvement program in c. 1945, during which Lateral No. 6 was concrete lined. The canal lining is constantly maintained and re-sheathed. Segments 1 and 2 switch between gunite and concrete lining.

Analysis of the 1937, 1957, 1963 and 1993 aerials of the MID Lateral No. 6 suggests:
1.) The canal was slightly widened between Features A and B, between 1963 and 1993.
2.) Feature C, the culvert carrying Roselle Road, was dramatically widened with gravel shoulders after 1993. It was built by MID.
3.) Feature D, the culvert carrying Oakdale Road, was dramatically widened after 1993. It was built by MID.
4.) Feature I, Bridge 38C0228 carrying Coffee Road, was built in 1923 and widened in 1959. It was built by Stanislaus County.
5.) Feature G, Bridge 38C0113 carrying Claribel Road, replaced the original crossing in 1939, and was widened in 1959. It was built by Stanislaus County.
6.) Features E, F, H, and J (drop structures) were built between 1957 and 1963; they are replacements to the original flow structures.
7.) Feature B, a weir, was built between 1963 and 1993.
9.) Feature A, the gate between MID Main Canal and Lateral No. 6 was built at an unknown date. A head gate is noted in the 1903 MID District Map, and is visible in the 1937 aerial photographs, but the original head gate was likely replaced. Architectural features of the gate and building suggest that it may have been built in c. 1945.

*B7. **Moved?** ☒No ☐Yes ☐Unknown **Date:** N/A **Original Location** N/A
*B8. **Related Features:** Feature A is the head gate between the MID Main Canal and Lateral No. 6. Feature B is a weir. Features E, F, H, and J are drops. Features C and D are culverts. Features I and G are bridges built by Stanislaus County.

B9a. Architect: Engineer - Modesto Irrigation District b. Builder: Modesto Irrigation District
*B10. **Significance:** **Theme** Settlement & Agricultural Development **Area** Modesto
Period of Significance 1903-1945 **Property Type** Irrigation Canal **Applicable Criteria** N/A

See Continuation Sheet.

B11. Additional Resource Attributes: N/A
*B12. **References:** See Continuation Sheet.

B13. Remarks: None

*B14. **Evaluator:** Margo Nayyar, LSA Associates, Inc., Rocklin, California.
***Date of Evaluation:** 06/12/2014

See Sketch Map, page 5

(This space reserved for official comments.)

DPR 523B (9/2013) *Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # P-50-000075 (update)
HRI #
Trinomial

Page 3 **of** 14 **Resource Name or #:** Lateral No. 6

L1. Historic and/or Common Name: MID Lateral No. 6

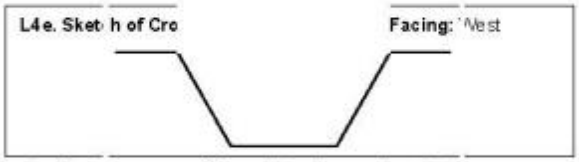
L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:** Segments 1 – 2

b. Location of point or segment: Two segments of the MID Lateral No. 6 are documented in this form.
Segment 1: Portions of Sections 35 and 36 of Township 2S Range 9E, M.D.B.M.
Segment 2: Portions of Section 34 of Township 2S Range 9E, M.D.B.M and
Sections 3 and 4 of Township 3S Range 9E, M.D.B.M.
(see Continuation Sheet and Location Map for UTMs).

L3. Description: The MID Lateral No. 6 canal segments are part of the larger (approx. 20 mile) MID Lateral No. 6, one of eight lateral canals that extend off of the MID Main Canal to form an irrigation system that is 208 miles in extent. The canal was built in 1903 by MID as a horse scraped, trapezoidal shaped, open, earthen canal. The canal was lined in c. 1955. Today, lining along the canal segments switch between concrete and gunite lining. The original construction and appearance of flow control features along the lateral are unknown, but have been replaced throughout the years. The ca[illegible]oot wide access roads on either side (see Continuation Sheet).

L4. Dimensions:
- **a. Top Width** 41
- **b. Bottom Width** 30
- **c. Height or Depth** 6
- **d. Length of Segment** Segments 1 and 2 total approximately 1.93 miles

L4e. Sketch of Cro[illegible] **Facing:** West



L5. Associated Resources: Bridge 38C0113 at Claribel Road and Bridge 38C0228 at Coffee Road have been evaluated and determined not eligible for listing in the National Register of Historic Places (NRHP) by the California Department of Transportation. These bridges were not built by MID, and are not associated resources. In 2011, a segment within Segment 2 was assumed eligible for listing on the NRHP. This segment included Feature F, a concrete drop structure, as well as the canal. There is no Primary or HRI number for the previously evaluated segment or drop. Additional features of this resource are presented on the Continuation Sheet and Location Map.

L6. Setting: The canal segments flow through fruit orchards and open farm land.

L7. Integrity Considerations: The canal was originally a horse scrapped, trapezoidal, earthen canal with various weir, drop and gate structures, and narrow culverts or bridge crossings. The concrete and gunite lining, replacement of the weirs and gate, and the widening of culverts and bridges undermine the integrity of design, materials, workmanship, feeling and association of the canal. The evidence of the original materials and technology used to build and keep the canal functioning are no longer extant, and the canal does not retain the feeling of an early-to-mid-20th century canal that would have enticed new settlers and brought much desired water to farms in the area. It has the feeling of a modern canal with modern flow control devices.

L8a. Photograph, Map, or Drawing.

L8b. Description of Photo, Map, or Drawing Photograph 2. View northeast of Segment 2 west of Coffee Road. Taken 05/27/14.

L9. Remarks: None.

L10. Form Prepared by:
Margo Nayyar
LSA Associates, Inc.
Rocklin, California

L11. Date: 06/12/2014

DPR 523E (9/2013)

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # P-50-000075 (update)
HRI#
Trinomial

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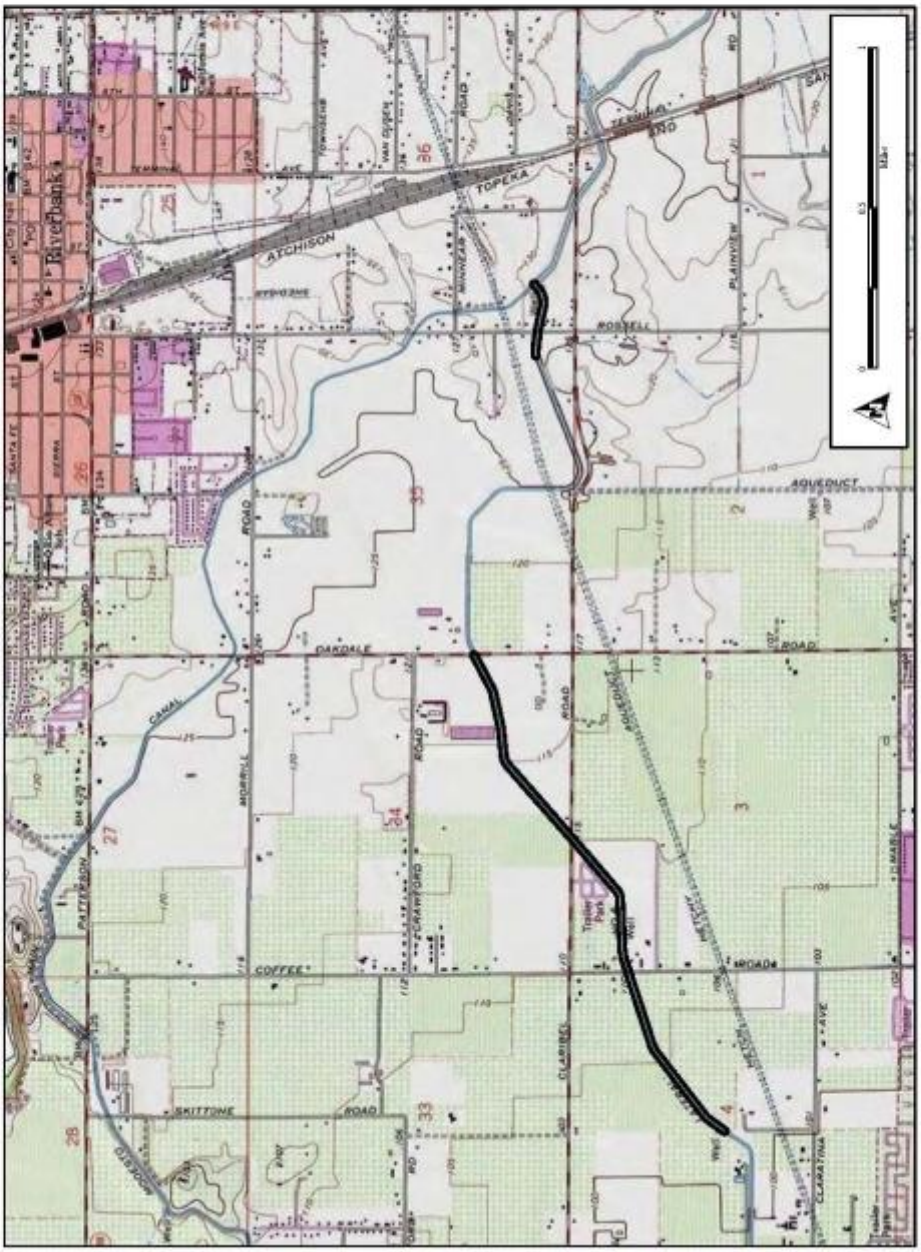
*Resource Name or # Lateral No. 6

*Map Name: *Riverbank, Calif.*

*Scale: 1:24K

*Date of map: 1968



DPR 523J (9/2013)

* Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
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Trinomial

Page 6 of 14 *Resource Name or # Lateral No. 6

*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

***P2d. UTMs** (continued):

UTM point	X	Y
1	681805	4175945
2	681452	4175928
3	679939	4176199
4	677584	4174877
1	681678	4176091

L3. Description (continued):

Segment 1 MID Lateral No. 6 extends west from the MID Main Canal slightly west of Roselle Avenue. Segment 2 extends southwest from Oakdale Road, bisecting Claribel and Coffee Roads. The canal segments were built in 1903 by MID as a horse scraped, trapezoidal shapped, open, earthen canal. The segments were lined in c. 1955. Today, lining along the canal segments switch between concrete and gunite lining, and the canal measures 41 feet wide with 15-foot wide access roads on either side.

Features along Segment 1 include a gate (Feature A), and a weir (Feature B). Feature A, a concrete headgate between the MID Main Canal and Lateral No. 6, was built at an unknown date. A gate is noted on the 1903 district map, and is visible in the earliest 1937 aerial photographs, but the current gate appears to have been built in c. 1945. It is likely a replacement. The gate features a concrete foundation and gate system, and concrete brick gate house. Concrete stairs lead to the entry doors on the north and south ends of the gate house. The roof is flat and appears to be concrete. Metal vents run along the eaves. Feature B, a concrete weir with a metal railing, was built between 1963 and 1993 according to aerial views of the canal. It has a metal gauge control on the south end of the weir. Aerial views of the canal suggest that the canal portion between Features A and B was widened between 1963 and 1993. Located west of Features A and B is a culvert carrying Roselle Road (Feature C). Feature C was constructed by MID as early as 1903. The original crossing was dramatically widened with gravel shoulders after 1993. The culvert displays a metal trash grate, and simple concrete railing.

Segment 2 of MID Lateral No. 6 features four drop structures, Features E, F, H and J. These features are identical concrete drops with metal railings built between 1957 and 1963. Drops are located in the same locations in the 1937 aerials, but appear to be a different drop structure type. The current drops have a distinctive V-pattern visible in aerial photographs that are not visible in the 1937 or 1957 aerials, but are visible in the 1963 aerials.The original narrow culvert carrying Oakdale Road (Feature D) was dramatically widened after 1993, and now features a simple concrete railing and metal gauge control. Feature I, Bridge 38C0228 carrying Coffee Road, was built in 1923 and widened in 1959. Feature G, Bridge 38C0113 carrying Claribel Road, replaced the original crossing in 1939, and was widened in 1959. These bridges have been evaluated by the California Department of Transportation and are not eligible for listing on the National Register of Historic Places. They are also not associated with the canal segment, however alterations to the culvert and bridges inevitably affect the integrity of the canal.

L7. Integrity Considerations (continued):

The canal was originally a horse scrapped, trapezoidal, earthen canal with various weir, drop and gate structures, and narrow culverts or bridge crossings. The concrete and gunite lining, replacement of the weirs and gate, and the widening of culverts and bridges undermine the integrity of design, materials, workmanship and feeling of the canal. Evidence of the original materials and technology used to build and keep the canal functioning are no longer extant, and the canal does not retain the feeling of an early-to-mid-20th century canal that would have enticed new settlers and brought much desired water to farms in the area. It has the feeling of a modern canal with modern flow control devices.

MID Lateral No. 6 is not in its original condition. The canal was built in 1903 by MID, who designed and built the entire canal system between 1901-1903. The entire MID canal system has an inferred period of significance of 1903-1945, encompassing the canal construction and the settlement and agricultural developments of Oakdale. The beginning of the 20-year canal improvement program marks the end of the period of significance. MID Lateral No. 6 does not have integrity of this period. The canal has been altered over time to improve its daily operations. Alterations include concrete and gunite lining; a new headgate, multiple replacement flow control structures, as well as, adding and widening of crossings over the canal. As a result, the canal does not promote a sense of time and place relating to the period of significance. Therefore, MID Lateral No. 6 does not retain integrity of design, materials, workmanship, feeling or association. MID Lateral No. 6 does retain a large degree of its original setting amongst agricultural land, as well as its original location. The canal has maintained the same alignment since 1903. However, integrity of setting and location alone are not sufficient to render the canal eligible to the National Register of Historic Places (NRHP) nor the California Register of Historical Resources (NRHP).

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*Recorded by: Nicole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

***L7. Integrity Considerations** (continued):

Carey & Co. 2007 recommended MID Lateral No. 6 not eligible for listing on the NRHP under Criteria A, B, C, or D, nor for listing on the CRHR under Criteria 1, 2, 3, or 4. Nayyar 2014 agrees with this determination. In conclusion, MID Lateral No. 6 does not retain integrity of location, design, materials, workmanship, association, or feeling, and does not appear eligible for listing on the NRHP or CRHR individually, or as part of a district.

***B10. Significance** (continued):

Development of Irrigated Agriculture
California's population greatly increased due to the gold rush. In response to the population increase, farms and ranches spread along waterways to address the growing agricultural needs of the state. Due to a lack of irrigation and California's natural weather patterns, cattle raising and wheat farming were the Central Valley's predominant agricultural pursuits in the first few decades following the gold rush. However, after devastating droughts and soil exhaustion from wheat monoculture in the 1860s, many people began championing for the advancement of irrigation and crop diversification (Caltrans 2000: 12).

The organization under of the Modesto Irrigation District (MID) "was crucial to the successful development of large-scale irrigated agriculture in California," (Caltrans 2000: 13) and would not have been possible without the passage of the 1887 Wright Act.

Formation of Irrigation Districts
Power struggles over water and land rights, as well as the expensive start-up costs of irrigation districts were the prime reasons behind the strong opposition of landowners. Early efforts in the 1860s to legalize irrigation districts were unsuccessful, but in 1887, Assemblyman C. C. Wright championed the passage of the Wright Act, which allowed the formation of irrigation districts and the legal authority to take land and water from powerful riparian landowners. The land would be used to form irrigation districts and systems (Caltrans 2000: 14).

Because of the backlash against the Wright Act and the formation of irrigation districts, no new irrigation districts were formed between 1897 and 1909. However, a consistent population increase in the Central Valley beginning in the early 20th century revived the need for irrigation districts. The population increase also increased the financial viability of forming and sustaining a district. The first districts to form after the twelve-year break were the South San Joaquin Irrigation District (SSJID) in May 1909, and the Oakdale Irrigation District in October 1909. Another dramatic increase in formation took place during World War I during an increased demand for agricultural production. By 1930, there were 94 irrigation districts throughout California (Caltrans 2000:14-15; Adams 1916: 71; Pisani 1984: 354).

Within the context for California's irrigation district development, the Modesto Irrigation District was one of the first formed. The early and long success of the Modesto Irrigation District was due to the construction of storage reservoirs with hydroelectric generation facilities, something OID later replicated.

Hydroelectric Power
Hydroelectric Power proved to be a secondary benefit of irrigation, but was one of the main reasons for the success of many irrigation districts. Irrigation canals and dams were first and foremost meant to transport water to farmland; however, the cost of constructing the canals and dams were often offset by selling power to private energy companies, as OID did. The Modesto and Turlock Irrigation Districts, however, used their hydroelectric plants on the Don Pedro Reservoir and Power House (built in 1923) to generate and distribute energy via power lines to properties within their districts, effectively centralizing their water and power management and distribution. These publicly owned hydroelectric plants were one of the reasons for the enduring success of those districts. They had a reliable and continuous water and power source, early in California and the Central Valley's irrigation history (Caltrans 2000: 68; Hutchins 1931: 64; OID 2009).

DPR 523L (1/95) *Required information

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CONTINUATION SHEET

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*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

***B10. Significance** (continued):

Modesto Irrigation District History

As previously stated, heavy wheat production depleted the soil of nutrients. In response to the shrinking wheat crops and profits, Modesto farmers recognized the need for crop diversification, and in turn, the need for irrigation. After the passage of the 1887 Wright Act, Modesto's residents readily voted to implement an irrigation district. However, the first few years were plagued by financial insecurity and legal opposition, which hampered the ability to construct dams and a canal system.

In 1888, MID levied its first tax to raise $13,000 to fund district operations and planning of the canal system. In 1890, the Tuolumne River was decided as MID's water source, and the District purchased the Wheaton Dam and water rights from Milton A. Wheaton for $10,000 and $21,000 in bonds (Barnes 1987: 31-45). Wheaton was a prominent patent lawyer who, in the 1870s, began buying water rights and property for the purpose of starting a private water company to supply water to the farmlands of Modesto (Gray 1973: 11). Wheaton was unsuccessful in his attempts despite investing a substantial amount of money and time constructing a small canal system and dam. He employed 1500 men, including 600 Chinese, and a mix of French, Italians, Portuguese, Irish and Native Americans, but was only able to bring water a couple miles south of La Grange. His ultimate goal was to irrigate Modesto's farmlands, but his proposal was rejected by local farmers (Daily Alta California 1871; Gray 1973: 12-17). The Wheaton Dam served as a starting point for MID's proposed storage reservoir and canal system.

The site of Wheaton Dam was desirable because of the steep-walled canyon measuring 80 feet wide at the base. The dam, built in 1855 to divert water for a flourmill, was insufficient due to its minimal height; it did not have the capacity to deliver water all the way to Modesto. In August 1890, the MID and Turlock Irrigation Districts agreed to jointly build the La Grange Dam just upstream from Wheaton Dam (Barnes 1987: 45-46).

The agreement between the districts included equally splitting construction costs, with each district constructing its own canal system. MID awarded J. R. McDougald of Stockton the contract to build the 9,640-foot section of the main canal from La Grange to Gasburg Creek. Construction on the main canal began in April 1891, the same week as La Grange Dam (Daily Alta California 1891; Barnes 1987: 46). The La Grange Dam was completed on December 13, 1893, three years before the main canal.

By 1896, the first 9,600 feet of the canal system was completed, taking approximately five years to finish. The canal system was difficult or took lengthy periods to build because tools and earth-moving equipment were inefficient. Early Caterpillar tractors were bulky, underpowered, hard to maneuver, and slow. Most canal work was accomplished using the Fresno scraper, a machine pulled by horses or mules through sandy soil and operated manually by a man on foot. It was innovative for its time, but with today's technology the same work would take a fraction of the time. The Fresno scraper is also the reason why earthen canals have a trapezoidal shape (Adams 1916: 18; Barnes 1987: 46-50; Fresno Historical Society; Caltrans 2000: 86).

Construction delays were more commonly due to costly litigation from irrigation opponents, and furthermore, from 1896-1900, construction completely halted after anti-irrigationists were elected to the board. After four years of inaction the anti-irrigationists were recalled from the board in February 1901, and canal revival plans drafted. The main canal was completed and delivering water in June 1903, and some laterals were completed in September 1903. The full system was functioning by 1904 and consisted of 208 miles of a main canal and laterals (Adams 1916: 18; Barnes 1987: 50-54).

Old Don Pedro Dam was built in 1921 to increase water storage capabilities, and the La Grange Dam was raised 18 inches in 1923 to gain better water flow into the canals. However, the earthen canal system in place was known to be inefficient. Earthen canals were subject to erosion, seepage, and evaporation. Starting in 1921, MID's began a canal improvement project, and began concrete lining or converting canals, laterals and ditches into underground pipelines (Barnes 1987: 63-65, 158).

Canal improvements were far and few between during the early years of the improvement program. In November 1921, a mile of the main canal was concrete lined, and 400 feet of Curtis Drain was concrete piped. By 1933, "less than 25 miles of canals had been lined or piped" (Barnes 1987: 159). World War II further delayed improvements, but after the war, MID launched a 20-year improvement program designed to line or pipe all of its main canals and laterals. By 1955, 58 percent, or "93.7 miles of the total network had been piped or lined," and by 1960, 81 percent had been completed. By the mid-1960s, the program was finished (Barnes 1987: 159).

DPR 523L (1/95) *Required information

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **CONTINUATION SHEET**	Primary # P-50-000075 (update) HRI# Trinomial

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*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

***B10. Significance** (continued):

MID and Hydroelectric Power and Transmission Lines

After building Don Pedro Dam in 1921 and the power plant in 1923, MID began generating and distributing hydroelectric power to the Modesto area. Retailing their services instead of wholesaling power to other private companies made MID's power program one of the largest undertakings in California and the United States in connection with irrigation water. On November 11, 1923, MID delivered electricity to residential, business and public buildings for the first time, as well as, irrigation pumps along parts the canal system. Farmers were expected to be the largest clients for energy because of their use of irrigation pumps and large farming equipment. By the end of 1928, MID maintained approximately 7,500 customers (Barnes 1987: 127; Hutchins 1931: 64).

Today, there is a substation and transmission line that runs along the MID Main and MID Lateral No. 6 canals in the APE; however, they were constructed from 2005-2007 and are not related to the original transmission system. The majority of the original metal lattice poles have been replaced with wood poles over the years; however, a few still stand within the APE between Terminal Avenue and Langworth Road.

Benefits of Irrigation

As the amount of irrigable land in the Modesto area increased, in 1905, acreage served by MID jumped 52 percent to 10,500 acres. Irrigated land increased another 21 percent in 1906, and another 19 percent between 1908 and 1909. The increase of irrigable land allowed for a diversification of crops. Farmers switched from wheat and alfalfa to various types of fruit and nut trees. There was also a marked increase in dairy production (Tinkham 1921: 212; Barnes 1987: 64).

MID's irrigation system had another expected benefit – a rise in land value. In the 1880s, land sold for $1.25 an acre, but between "1900 and 1920 land values increased by 549 per cent in Stanislaus County" (Barnes 1987: 62). A reliable water source allowed land developers to easily promote the sales of family farms in the area (Barnes 1987: 65). See the Settlement section of this HRER for more information related to settlement patterns within the APE.

Potential Period of Significance

MID Lateral No. 6 has a potential period of significance from 1903 – 1945. The time frame encompasses the 1903 built date of the canal, the increased settlement patterns around the canal system, and the diversification and agricultural enrichment of the Modesto area. The start of the 20-year canal improvement program in c. 1945 is the end of the period of significance.

Eligibility Discussion

A segment of MID Lateral No. 6 was previously evaluated by Mead & Hunt in 2011. The segment is within the project APE, and is evaluated in this update as part of Segment 2. Mead & Hunt's evaluation assumed eligibility for listing on the National Register of Historic Places under Criterion A and the California Register of Historic Paces under Criterion 1 for agriculture, with a period of significance of 1904-1955. It is agreed that MID Lateral No. 6 is associated with agricultural, as well as and settlement trends in Modesto and Stanislaus County; however, the 1904-1955 period of significance suggested by Mead and Hunt was not clearly argued or defined. Upon a more intensive level of research of MID Lateral No. 6 the period of significance appears to be 1903-1945, the built date of the canal segment and the beginning of the 20-year improvement program. By 1955, over half of the entire MID canal system had been concrete lined. The 20-year improvement program implies the decline in canal integrity, not the historic significance of the system, and therefore, the program dates should not be included in the period of significance.

Mead & Hunt also concluded, "The MID Lateral No. 6 canal segment has been modified over time as part of MID upgrade and maintenance activities. The cement lining of the canal occurred within the period of significance. The gunite applied to the canal falls outside the period of significance and impares its integrity of materials and workmanship. However, under Criterion A/1 it retains the other aspects of integrity and retains its ability to convey its association with important trends in agricultural development in Stanislaus County." This conclusion is now outdated due to the updated period of significance. The concrete lining in 1955 took place outside the period of significance. Furthermore, research indicates that many more alterations to the canal have taken place over the years other than the concrete lining. Canal widening, a weir addition, replacement drops and head gate, and widening of bridges and culverts has undermined the integrity of design, materials, workmanship and feeling of the canal. There is not enough integrity to convey its association with important agricultural or settlement trends.

Carey & Co. evaluated MID lateral No. 6 and recommended the canal not eligible for listing on the NRHP under Criteria A, B, C, or D, nor for listing on the CRHR under Criteria 1, 2, 3, or 4. Nayyar 2014 agrees with this determination because MID Lateral No. 6 does not retain integrity oflocation, design, materials, workmanship, association, or feeling. MID Lateral No. 6 does not appear eligible for listing on the NRHP or CRHR individually, or as part of a district.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
HRI#
Trinomial

Page 10 **of** 14 ***Resource Name or #** Lateral No. 6

***Recorded by:** Nichole Jordan & Mario Scalzo, LSA Associates, Inc. ***Date:** 05/27/2014 ☐ Continuation ☒ Update

***B10. Significance** (continued):

Significance Statement

The MID Lateral No. 6 canal segments are associated with the settlement and agricultural history of Modesto. However, the canal segments do not retain enough integrity of design, materials, workmanship and feeling, to maintain eligibility for the National Register of Historic Places. The canal segments are not associated with a significant person in national or local history, and they do not represent the work of a master engineer, nor are they a superior example of an engineering feat. Furthermore, they are unlikely to yield valuable information to future researchers. Therefore, the MID Lateral No. 6 canal segments in the project APE do not appear eligible for listing on the National Register of Historic Places under Criteria A, B, C, or D; nor do they appear eligible for listing on the California Register of Historical Resources under Criterion 1, 2, 3, or 4.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
HRI#
Trinomial

Page 11 of 14 *Resource Name or # Lateral No. 6

*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

***B12. References** (continued):

Adams, Frank. California Department of Engineering.
1916 *Irrigation District in California: 1887-1915. Bulletin No. 2.* State Printing Office, California.

Barnes, Dwight H.
1987 *The Greening of Paradise Valley: The First 100 Years of the Modesto Irrigation District.* Modesto Irrigation District.

Carey & Co.
2007 "Lateral No. 6" DPR form within *San Francisco Public Utilities Commission, San Joaquin Pipeline Existing Conditions Report.*

Gray, Thorne.
1973 *Quest for Deep Gold, The Story of La Grange California.* Southern Mines Press, La Grange.

Hutchins, Wells A. United States Department of Agriculture
June 1931 *Irrigation Districts: Their Organization, Operation and Financing. Technical Bulletin No. 254.* Washington DC.

JRP Historical Consulting Services and California Deparmtent of Transportation.
2000 *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures.* Sacramento, CA.

Pisani, Donald J.
1984 *From the Family Farm to the Agribusiness: The Irrigation Crusade in California and the West, 1850-1931.* University of California Press, Berkeley.

Roland, Carol.
2011 "MID Lateral No. 6 canal segments" DPR form within Mead & Hunt, *Historic Resources Evaluation Report, Claribel Road Widening Project, Stanislaus County* prepared for Stanislaus Founty Department of Transportation and Caltrans District 10.

Tinkham, George Henry.
1921 *The History of Stanislaus County California with Biographical Sketches.* Historic Record Company, Los Angeles, California.

Daily Alta California
October 30, 1871 "A Letter from La Grange."

Daily Alta California
January 1, 1891 "Modesto's Irrigation Canal."

Fresno Historical Society
No Date. "Fresno Scraper." http://www.valleyhistory.org/index.php?c=103 (accessed May 30, 2014).

Oakdale Irrigation District
2009 "A Century of Service" (Pamphlet). On file at Oakdale Irrigation District. 205 East F Street, Oakdale, California.

California Department of Transportation
2014 Structure Maintenance & Investigation: Historical Significance – Local Agency Bridges. http://www.dot.ca.gov/hq/structur/strmaint/hs_local.pdf (accessed June 12, 2014)

Aerial Photographs
1937, 1957, 1963 On file at Modesto Irrigation District Headquarters. 1231 11th Street, Modesto, CA 95352.

Map of the Modesto Irrigation District
1903 On file at Modesto Irrigation District Headquarters. 1231 11th Street, Modesto, CA 95352.

Aerial Photographs
1993 Google Earth.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
HRI#
Trinomial

Page 12 of 14 *Resource Name or # Lateral No. 6

*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

P5b. Photographs (continued):

Photograph 3. View east of culvert under Oakdale Road (Feature D). Taken 5/27/14.

Photograph 4. View north of Feature G, Bridge 38C0113 on Claribel Road. Taken 5/27/14.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
HRI#
Trinomial

Page 13 of 14 *Resource Name or # Lateral No. 6

*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

P5b. Photographs (continued):

Photograph 5. View west of culvert carrying Roselle Road (Feature C).

Photograph 6. View East of Feature F.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-50-000075 (update)
HRI#
Trinomial

Page 14 of 14 *Resource Name or # Lateral No. 6

*Recorded by: Nichole Jordan & Mario Scalzo, LSA Associates, Inc. *Date: 05/27/2014 ☐ Continuation ☒ Update

P5a. Photographs (continued):

Photograph 7. View south of Lateral No. 6 Segment 2 with new gunite. Taken 5/27/14.

Photograph 8. View south of Feature I, Bridge 38C0228 carrying Coffee Road. Taken 5/27/14.

DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code:
Other Listings
Review Code Reviewer Date

***Resource Name or #:** Modesto Irrigation District (MID) Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9

P1. Other Identifier: None

***P2. Location: *a. County** Stanislaus **County/Route/Postmile:** Stanislaus/Claribel Road

b. Address Claribel Road, between Coffee Road and Oakdale Road

City North of Modesto in unincorporated area of the county **Zip** 95357

***c. UTM: USGS Quad:** Riverbank Quadrangle 7.5, 1969, photo revised 1987 **d. UTM:**

***e. Other Locational Data (APN #)** N/A

***P3a. Description:** (Briefly describe resource below)

This segment of the Modesto Irrigation District (MID) Lateral No.6 canal is located in Section 3 of Township 3S Range 9E, MDM and Section 34 of Township 2S Range 9E, MDM. The segment is an approximately 50-foot-wide linear section that bisects Claribel Road 0.4 miles east of Coffee Road and extends approximately 1,100 feet in length. This canal segment is a part of the larger MID Lateral No. 6 canal, which extends approximately 20 miles from the MID Main Canal (Section 36, Township 2S Range 9E, MDM) to east of McHenry Avenue. (see Continuation Sheet, page 3)

***P3b. Resource Attibutes:** HP20

****P4. Resources Present:** ___Building X Structure ___Object ___Site ___District X Elements of District ___Other

P5b. Description of Photo: Lateral No.6 segment from Claribel Road; view NW

***P6. Date Constructed/Age:** 1904/c.1933-1965

X Historic ___Prehistoric ___Both

***P7. Owner and Address:**
Modesto Irrigation District
1231 11th Street
Modesto, CA 95352

***P8. Recorded by:**
Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle Suite 240
Sacramento, CA. 95834

***P9. Date Recorded:** May 10, 2011

***P10. Type of Survey:** X Intensive ___Reconnaissance ___Other

Describe: Lateral No. 6 was surveyed between Claribel Road and Oakdale Road

***P11. Report Citation:** *Historic Resrouces Evaluation Report, ClaribelRoad Widening Project, Stanislaus County* prepared for Stanislaus County Department of Transportation and Caltrans Distirct 10.

***Attachments:** ___NONE ___Map Sheet ___Continuation Sheet ___Building, Structure and Object Record
X Linear Resource Record ___Archaeological Record ___District Record ___Milling Station Record ___Rock Art Record
___Artifact Record ___Photograph Record ___Other (List):

Caltrans DPR 523B (11/94) Page 1 of 7
*Required Information.

State of California — The Resources Agency: Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#:

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference No.: 9

***Resource Identifier:** MID Lateral No. 6 canal segment ***NRHP Status Code:** 2D2

B1. Historic Name: Same

B2. Common Name: None **County/Route/Postmile:** Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

B3. Original Use: Irrigation Canal **B4. Present Use:** Irrigation Canal

***B5. Architectural Style:** N/A

***B6. Construction History:** Constructed in 1904 as an earthen lined canal; lined with concrete 1955; lined with gunite c.2000

***B7. Moved?** X No ___ Yes ___ Unknown **Date:** N/A **Original Location:** N/A

***B8. Related Features** (describe below):
Stanislaus County Bridge 38C0113 spans MID Lateral No. 6 carrying Claribel Road over the canal approximately 0.4 miles east of Coffee Road. A concrete and metal weir is located to the northeast of the bridge. A dirt two-track access road in the ownership of the MID is located on the east side of the canal between Claribel and Oakdale Roads.

B9a. Architect: Engineer – Modesto Irrigation District **B9b. Builder:** Modest Irrigation District

***B10. Significance: Theme:** Agriculture: Irrigation and Fruit Farming **Area:** Stanislaus County

Period of Significance: 1904-1955 **Property Type:** Canal (HP20) **Applicable Criteria:** Criteria A

The MID canal system appears to have not been previously surveyed or evaluated for listing in the National Register or California Register. In 2007 LSA Associates completed a study of a segment of the Dr. Moore Lateral canal, also a component of the larger MID canal system, near State Route 108 north of Modesto. The study concluded that although the MID canal system has been modified over time the canal segment was eligible for listing on the California Register and was considred a part of a historic resource for purposes of CEQA.

(see Continuation Sheet, page 3)

B11. Additional Resource Attributes: None

B12. References:
(see Continuation Sheet, page 3)

(Sketch Map with north arrow required.)

See Sketch map attached.

B13. Remarks:
None

B14. Evaluator: Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle, Suite 240
Sacramento, CA 95834

Date of Evaluation: May 29, 2011

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #:
HRI #/Trinomial

CONTINUATION SHEET

X Continuation ____Update

Caltrans Map Reference No.: 9

Resource Identifier: MID Lateral No. 6 canal segment

County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

P3a. Description: (Continued)
MID Lateral No.6 is part of the larger MID canal system that extends approximately 208 miles. MID Lateral No. 6 is one of eight laterals within the MID system constructed in 1904 to provide field irrigation to small farms and orchards north of the city of Modesto in the area known locally as Paradise Valley.

MID Lateral No.6 was constructed in 1904 as an earthen canal. Between 1933 and 1965 the entire 208 mile MID canal system was either concrete lined or replaced with metal pipe. The MID Lateral No. 6 segment at Claribel Road was concrete lined in 1955. The concrete lined portions of MID Lateral No. 6 were covered in gunite c. 2000. The MID lateral No. 6 canal segment consists of an open concrete lined canal that crosses Claribel Road at Bridge 38C0113, which spans the canal and carries Claribel Road over the canal structure

B10. Significance: (Continued)
The MID Lateral No. 6 canal segment at Claribel Road was evaluated following the guidance provided in the Caltrans Standard Environmental Reference (SER), Volume 2, Chapter 7, Section 7-8.5. Evaluation of the Lateral No.6 canal segment was carried out in the context of the property as a whole (i.e. the MID canal system). Under the historic context "Irrigation and Fruit Farming" in Stanislaus County, (see Mead & Hunt, Inc. *Historic Resources Evaluation Report, Claribel Road Widening Project*, Stanislaus County, 2011) the MID canal system was found to be the earliest irrigation system in the county and one of the earliest in the San Joaquin Valley of California. It played a pivotal role in the shift of the local agrarian economy from wheat and grain production, carried out on large ranch holdings, to a fruit and ground vegetable agrarian economy, carried out on small holdings and dependent on irrigation. This shift is an important local trend under the theme of agriculture. The MID canal system is assumed to be significant under *Criterion A* of the National Register and *Criterion 1* of the California Register for its contribution to important trends in agricultural development in Stanislaus County. Under *Criterion C/3* the MID research does not suggest that the canal system is representative of important engineering or design of irrigation canal systems in the Stanislaus County area or the larger San Joaquin Valley. It was originally an earthen ditch structure and is now a combination of concrete lined open channel and manufactured pipe. It is not considered significant or assumed eligible under *Criterion C* of the National Register or *Criterion 3* of the California Register.

The character-defining features of the MID Lateral No. 6 canal segment include: the trough shape of the canal; expanses of an open linear channel separated by a crossing that has historically covered a portion of the canal (Stanislaus County Bridge No. 38C0113); the conveyance of water for irrigation purposes; the original alignment within the MID canal system; and a weir.. Other features of irrigation canal systems (e.g. diversion structures, conduits, flow control devices, cleansing devices, etc.) are not present within this segment of MID Lateral No. 6.

The MID Lateral No. 6 canal segment has been modified over time as part of MID upgrade and maintenance activities. The cement lining of the canal occurred within the period of significance. The gunite applied to the canal falls outside the period of significance and impairs its integrity of materials and workmanship. However, under *Criterion A/1* it retains the other aspects of integrity and retains its ability to convey its association with important trends in agricultural development in Stanislaus County. The MID Lateral No. 6 canal segment retains sufficient integrity and is recommended as a contributing element of the MID canal system should the MID canal system ever be determined eligible for inclusion in the National or California Register. For purposes of this project it is treated as eligible for purposes of the National and California Registers.

B12. References:

Barnes, Dwight. *The Greening of Paradise Valley, Modesto: Modesto Irrigation District, 1887-1987.* Modesto, Calif.: Modesto Irrigation District 1987.

Elliot and Moore. *History of Stanislaus County, California with Illustrations.* San Francisco: Elliot and Moore, 1881.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #:
HRI #/Trinomial

CONTINUATION SHEET

X Continuation ____Update

Caltrans Map Reference No.: 9

Resource Identifier: MID Lateral No. 6 canal segment **County/Route/Postmile:** Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road

LSA, Associates. "A Cultural and Paleontological Resource Study for the Ladd Road/McHenry Avenue Intersection Operational Improvement Project." Unpublished study for Stanislaus County Department of Public Works, 2007.

Ray, Herndon Carroll. *Stanislaus County 1854-1954: A Century of Growth*. Modesto, Calif.: Stanislaus County School District, 1955.

Santos, Robert. "Chronology of Stanislaus County through 1912." http://library.csustan.edu/bsantos/chronology.html.

Telephone conversation with David Covey, Modesto Irrigation District. 27 May 2011.

Vaught, David. *After the Gold Rush: Tarnished Dreams in the Sacramento Valley*. Baltimore: Johns Hopkins University Press, 2007.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary #
HRI#
Trinomial

Resource Identifier: MID Lateral No.6 canal segment **Caltrans Map Reference No.:** 9
County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road
L1. Historic and/or Common Name: Same
L2a. Portion Described: Entire Resource X Segment Point Observation **Designation:** N/A
b. Location of point or segment: (Provide below UTM coordinates, legal description, other useful locational data. Show the field-inspected area on Location Map)
The canal segment is located on Claribel Road, 0.4 miles east of the intersection of Claribel Road and Coffee Road, northeast of Modesto, Stanislaus County, California. It is located on the section line between Section 3 of Township 3S Range 9 E, MDM and Section 34 of Township 2S Range 9E, MDM. The canal segment UTM Coordinates are Zone 10 N679037 E4175689 N
L3. Description:
The MID Lateral No. 6 canal segment consists of a 50-foot-wide and 1,100-foot-long segment of the larger (approx. 20 mile) MID Lateral No. 6, one of eight lateral canals that extend off of the MID Main Canal to form an irrigation system that is 208 miles in extent. The canal segment at Claribel Road is an open concrete-lined canal, which is spanned by Stanislaus County Bridge 38C0113. The bridge has been previously evaluated by Caltrans as not eligible for listing in the National Register. The bridge was not constructed as a part of the MID irrigation system.
L4. Dimensions:
- **a. Top Width:** 50 feet
- **b. Bottom Width:** 30 feet
- **c. Height or Depth:** 6 feet
- **d. Length of Segment:** 1,100 feet

L4e. Sketch of Cross-Section (include scale) **Facing:**
See Sketch Map attached

L5. Associated Resources: (list below)
Metal and concrete weir located to the northeast
L6. Setting: (briefly describe below)
The MID Lateral No. 6 canal segment crosses under Claribel Road, a rural road that follows the section lines between Township 2S and Township 3S Range 9E, USGS Riverbank Quadrangle. The setting in the vicinity of the canal segment is agricultural with fruit orchards and open cultivated fields.
L7. Integrity Considerations: (briefly describe below)
The MID Lateral No.6 canal segment was originally an earthen canal. It was concrete lined in 1955 as part of a larger MID program of lining canals within the system with concrete. The concrete lining was accomplished within the period of significance of the canal system and is a reflection of MID upgrade and maintenance of the irrigation system. The concrete lining was sprayed with gunite c. 2000.

L8a. Photograph, Map or Drawing
See Sketch Map

L8b. Description of Photo/Map/Drawing (View, scale, etc.)
View of Lateral No. 6 at Calirbel Road bridge; view southwest.

L9. Remarks:
None

L10. Form Prepared by: (Name, affiliation, and address)
Carol Roland, Ph.D.
Mead & Hunt, Inc.
180 Promenade Circle
Sacramento, CA 95834

L11. Date: June 1, 2011

Caltrans DPR 523E (1/95)
*Required information

Page 5 of 7

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

Resource Identifier: MID Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9

County/Route/Postmile: Stanislaus County/Coffee Road

Map Name: USGS Riverbank Quadrangle ***Scale:** 1:24000 ***Date of Map:** 1969; Photo Revised 1987

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

*Resource Identifier: MID Lateral No. 6 canal segment **Caltrans Map Reference No.:** 9
County/Route/Postmile: Stanislaus County/ Claribel Road, 0.4 miles East of Coffee Road
*Drawn by: Aerial View *Date: June 5, 2011

Caltrans DPR 523K (1/95)
*Required information

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State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 2 *Resource Name or #: (Assigned by recorder) Lateral No. 6
P1. Other Identifier: _____
*P2. Location: __ Not for Publication ✓ Unrestricted
*a. County Stanislaus and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Riverbank Date _____ T __; R ___; __ ☐ of __ ☐ of Sec __; _____B.M.
c. Address _____ City _____ Zip _____
d. UTM: (Give more than one for large and/or linear resources) Zone 10 , 680778 mE/ 4177382 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Crosses the San Joaquin Pipelines around milepost 72.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Lateral No. 6 branches from the Modesto Main Canal and runs west toward Salida. It crosses underneath the San Joaquin Pipeline around MP 72. The lateral conveys water from the Modesto Main Canal to the area around Salida. It is 31 feet wide at the Modesto Main Canal and tapers to 28 feet at its western end.

Lateral No. 6 was completed in 1903 by the Modesto Irrigation District, which was organized in 1887 as the California's second irrigation district (Hatoff at al., 1995). It plays a secondary role within the district as a branch of the main irrigation canal. It was originally dirt-lined and constructed with hand tools and horse–drawn equipment (Hatoff et al., 1995). As part of a district-wide project, Lateral No. 6 was lined with either concrete or gunite during the 1920s or 1930s.

*P3b. Resource Attributes: (List attributes and codes) HP20 -- canal/aqueduct
*P4. Resources Present: __ Building ✓ Structure __ Object __ Site __ District __ Element of District __ Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) Lateral No. 6, looking south from MP 70.26, 10/30/07

*P6. Date Constructed/Age and Source: ✓ Historic __ Prehistoric __ Both
1903 (Hatoff, 1995)

*P7. Owner and Address:
Modesto Irrigation District
P.O. Box 4060
Modesto, CA 95352-4060

*P8. Recorded by: (Name, affiliation, and address)
Carey & Co.
460 Bush Street
San Francisco, CA. 94108

*P9. Date Recorded: 8/13/2007

*P10. Survey Type: (Describe) Intensive Survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.")
San Francisco Public Utilities Commission, San Joaquin Pipeline Existing Conditions Report, 2007.

*Attachments: __NONE __Location Map __Continuation Sheet ✓ Building, Structure, and Object Record
__Archaeological Record __District Record __Linear Feature Record __Milling Station Record __Rock Art Record
__Artifact Record __Photograph Record __Other (List): _____

DPR 523A (1/95) *Required information

State of California The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

Page 2 of 2 *Resource Name or # (Assigned by recorder) Lateral No. 6

B1. Historic Name: Lateral No. 6
B2. Common Name: Lateral No. 6
B3. Original Use: Water Conveyance B4. Present Use: Water Conveyance
*B5. Architectural Style: N/A
*B6. Construction History: (Construction date, alterations, and date of alterations)
Constructed 1903.

*B7. Moved? ✓No _Yes _Unknown Date: _____ Original Location: _____
*B8. Related Features:

B9a. Architect: Unknown b. Builder: Modesto Irrigation District
*B10. Significance: Theme Central Valley Irrigation Systems Area Northern California
Period of Significance 1903 Property Type Canal Applicable Criteria n/a

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Lateral No. 6 does not appear to be eligible for the National Register or the CRHR. Lateral No. 6's inferred period of significance dates to 1903 when it was constructed. It does not appear to be significant enough for listing in the NRHP under Criteria A, B, C and/or D and the CRHR under Criteria 1, 2, 3 and/or 4. Although it belongs to the Modesto Irrigation District, the second such district in California, it functions on a secondary level to the Modesto Main Canal. Furthermore, research has not found Lateral No. 6 to have any significant associations with any specific person or events of historic significance. The lateral does not have significance for its engineering or workmanship, since it does not represent a significant engineering design. It did not introduce a design innovation into the overall irrigation district. Finally, it does not appear that the lateral has the potential to yield information important to the prehistory or history of the local area, state, or the nation. Although Lateral No. 6 retains some integrity related to its inferred period of significance, the resource lacks historic significance, and therefore, does not appear to be eligible for the NRHP or the CRHR.

B11. Additional Resource Attributes: (List attributes and codes) HP20 -- canal/aqueduct
*B12. References:
Hatoff, Brian, Barbara Voss, Sharon Waechter and Steven Wee. Cultural Resources Inventory Report for the Proposed Majove Northward Expansion Project. Prepared for the Mojave Pipeline Company. On file at the CCIC, File # 2759, 1995.

B13. Remarks:

*B14. Evaluator: E. Schultz & A. Vanderslice, Carey & Co.
*Date of Evaluation: 8/13/2007

(This space reserved for official comments.)

DPR 523B (1/95) *Required information

Appendix F — *Signalized Claribel Road/Roselle Avenue Intersection Project – Global Climate Change*

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February 3 2016

Ms. Kyrsten Shields
Senior Regulatory Specialist
Foothill Associates
590 Menlo Dr., Suite 5
Rocklin, CA 95765

Subject: ***Signalized Claribel Road/Roselle Avenue Intersection Project – Global Climate Change***

Dear Ms. Shields:

On behalf of KD Anderson & Associates, I am pleased to submit this report on the effects of the Signalized Claribel Road/Roselle Avenue Intersection project on global climate change. The purpose of this report is to present an assessment of the proposed project for use by Caltrans and the County of Stanislaus in complying with the California Environmental Quality Act (CEQA).

To assist Caltrans and the County in complying with CEQA, the format and content of this report draws from the Caltrans Initial Study/Environmental Assessment (IS/EA) annotated outline, which is presented on the Caltrans Standard Environmental Reference Forms and Templates internet webpage (http://www.dot.ca.gov/ser/downloads/templates/ao/is_ea_ao.docx); and from recent County of Stanislaus CEQA environmental documents, which are presented on the Stanislaus County Department of Public Works Projects internet webpage (http://www.stancounty.com/publicworks/projects.shtm).

The following is:

- a description of the proposed project,
- background information on global climate change,
- a description of the relevant regulatory setting,
- information on project-level analysis in the context of global climate change, and
- a description of the impacts of the proposed project on global climate change.

PROJECT DESCRIPTION

The County of Stanislaus proposes to improve the intersection of Claribel Road and Roselle Avenue. The following is a description of the Signalized Claribel Road/Roselle Avenue Intersection project.

The project site consists of approximately 15.2 acres along Claribel Road and Roselle Avenue. The northern portion of the project site, north of Claribel Road is located within the City of

Riverbank, and the southern portion of the project site, south of Claribel Road, is located within the unincorporated area of Stanislaus County. The location of the site is shown in the enclosed **Figure 1**. The project site is south of the City of Riverbank and north of the City of Modesto.

Existing Facilities

Traffic control at the existing intersection of Claribel Road and Roselle Avenue is an all-way stop in combination with an overhead flashing red beacon at the center of the intersection. Single-lane approaches are present on all four approaches to the intersection. Roll-over curbs are provided at all corners to facilitate truck turning movements.

Under existing conditions, intersection traffic is subject to substantial delay. Using the Highway Capacity Manual (HCM) method, the intersection functions at level of service (LOS) F with 93.5 seconds of delay. Ongoing urban development in the nearby cities is expected to degrade traffic operations in the future.

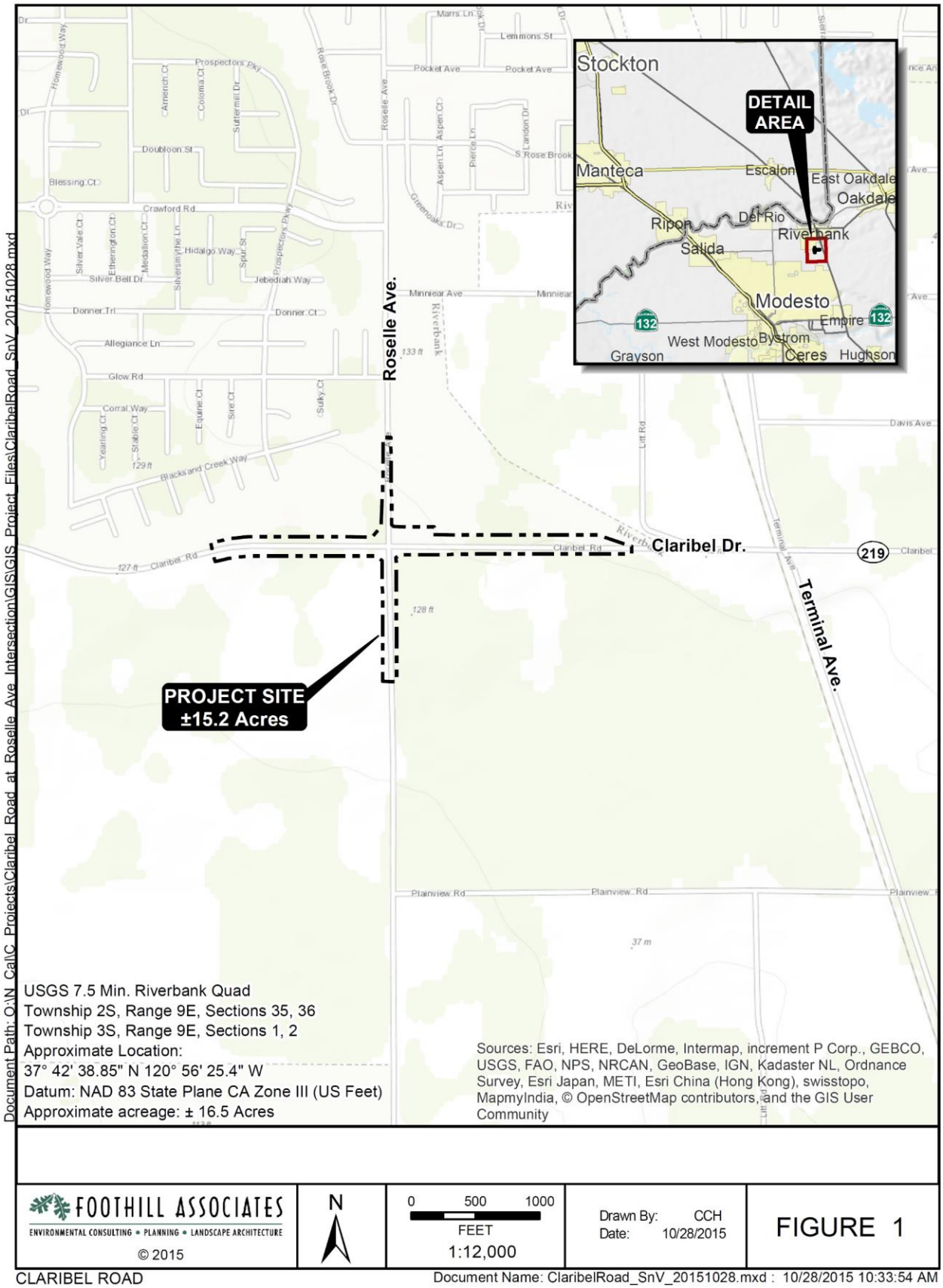
Proposed Facilities

The County proposes signalization of the intersection of Claribel Road and Roselle Avenue, as well as accommodating the existing two-lane roadways at the intersection with turn lanes. No additional through lanes would be constructed, and proposed improvements would not increase capacity of the approach roads. The proposed improvements are shown in **Figure 2**.

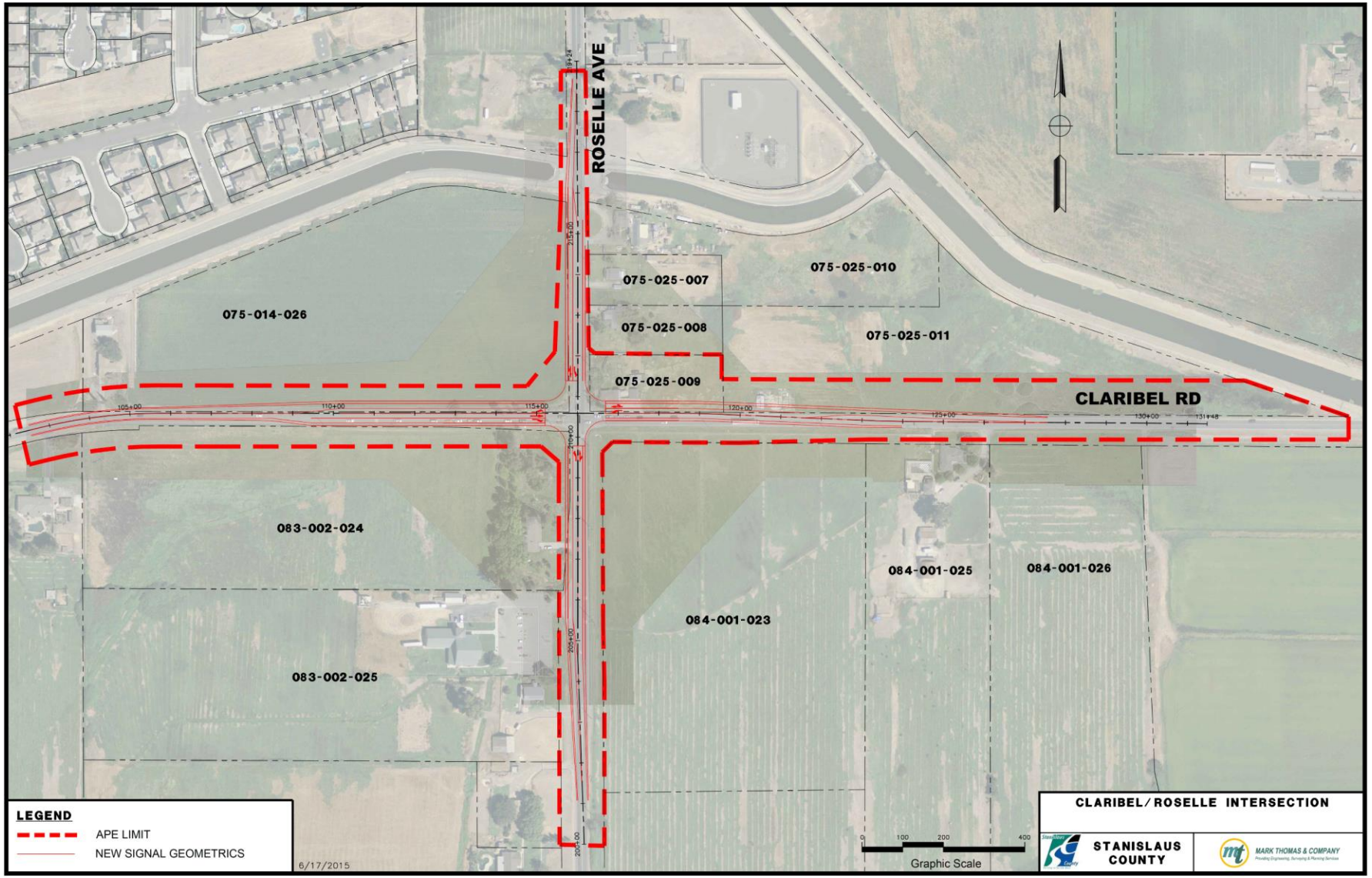
The proposed improvements would include widening the east and west legs of Claribel Road, and the north and south legs of Roselle Avenue. From the intersection, the lengths of improvement for each leg are as follows: 1,300 feet to the west, 1,200 feet to the east, 800 feet to the north, and 900 feet to the south. The central portion of the intersection would be widened to accommodate the new turn lanes. The corner radii would also be increased to facilitate right turn movements.

Proposed signal improvements would involve the installation of foundations, poles, and mast arms to support the proposed signal assemblies, street name signs and luminaries as well as control boxes and other related equipment. Multi-phase control would be provided to accommodate anticipated turning movements on all four approaches. The project would include a 0.2-foot minimum pavement overlay of the existing paved sections on all the project segments. The improved roadway sections would be restriped and signed in accordance with County and State standards.

Construction of the project is scheduled to begin May 2017. Traffic on both Claribel Road and Roselle Avenue through the project site would be accommodated during the construction period. The project is not expected to require closure of either road. Traffic would be diverted onto the half-road section to allow construction of new facilities on the opposite side. Construction of the project is scheduled to be completed September 2017.



PROJECT SITE LOCATION AND VICINITY



PROJECT SITE

GLOBAL CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG emissions. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[1].

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.[2]

[1] http://climatechange.transportation.org/ghg_mitigation/
[2] http://www.fhwa.dot.gov/environment/climate_change/mitigation

REGULATORY SETTING

This *Regulatory Setting* section outlines state, federal, and local efforts to comprehensively reduce GHG emissions from transportation sources.

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions. Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005). The goal of this EO is to reduce California's GHG emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32).

Assembly Bill 32, Núñez and Pavley, The Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006). This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007). This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions. This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection. This bill requires the ARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

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Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan. This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012). This policy is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to Caltrans' stewardship goal to preserve and enhance California's resources and assets.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis.[3] FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009). This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

[3] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

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U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[4]

The U.S. EPA and NHTSA are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

[4] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

Local

The following information is from the San Joaquin Valley Air Pollution Control District (SJVAPCD) internet website (http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm).

Climate Change Action Plan. In August 2008, the SJVAPCD Governing Board adopted the Climate Change Action Plan (CCAP). The CCAP directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist CEQA lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific GHG emissions on global climate change.

Guidance Documents. On December 17, 2009, the SJVAPCD adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change. Detailed information on the District's Climate Change Action Plan, BPS, and GHG Emission Reduction Measures are available at the District website (http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm).

PROJECT-LEVEL ANALYSIS

The large majority of individual projects do not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.[5] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (State CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past,

[5] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (see **Figure 3** below). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

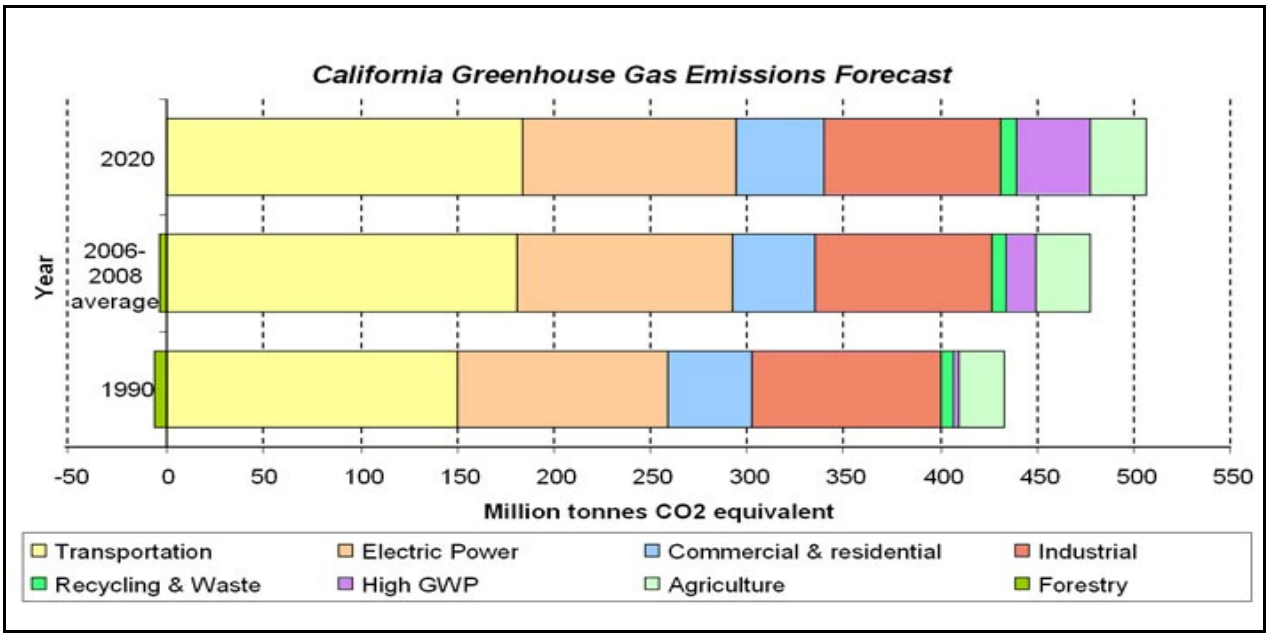

Figure 3. California Greenhouse Gas Forecast
(Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm)

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Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[6]

One of the main strategies in the Caltrans Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO_2) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see **Figure 4** below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

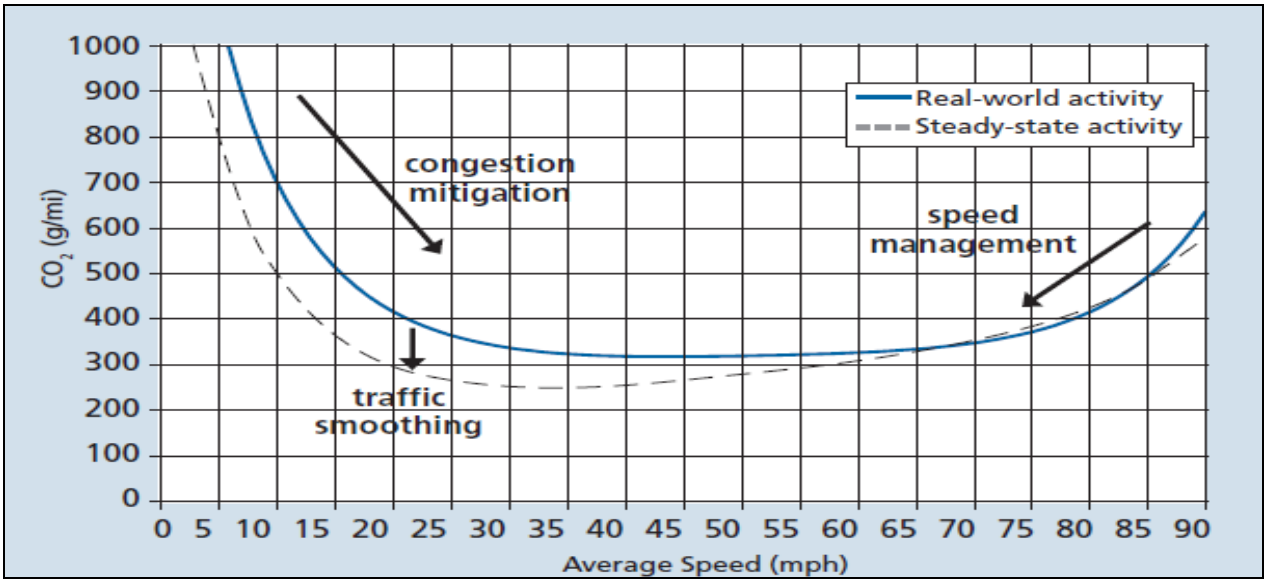

Figure 4. Possible Effect of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions

Source: Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin(TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

[6] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

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PROJECT-RELATED IMPACTS

The Signalized Claribel Road/Roselle Avenue Intersection project was analyzed to determine GHG emissions which could affect global climate change through:

- near-term construction-related activities, and
- long-term operational effects.

Construction-Related Emissions

Construction of the Signalized Claribel Road/Roselle Avenue Intersection project would generate combustion emissions from various sources. During site preparation and construction, GHGs would be emitted from construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site demolition and construction activities would vary daily as construction activity levels change. Construction activities would contribute to the total annual GHG emissions in the State. Neither the SJVAPCD, Caltrans, nor ARB has issued clear thresholds on construction-related GHG emissions for CEQA. Likewise, SJVAPCD has not released an adopted set of construction-related BPS for GHG emissions.

In the absence of clear thresholds, guidance, or BPS for construction-related GHG emissions, the project would instead adhere to a suite of best practices extracted from the existing literature.

In 2009, EPA's Sector Strategies Program produced a report analyzing construction-related GHG emissions titled *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. The report identifies fossil fuel combustion, primarily from construction equipment, and fuel use from purchased electricity as the two major sources of GHG emissions in the construction industry, with approximately three-quarters of GHG emissions from the construction sector resulting from diesel, gasoline, and natural gas combustion. Therefore, strategies to reduce GHG emissions from construction projects should focus on reducing fossil fuel consumption by construction equipment.

Implementation of **Mitigation Measure GHG-1**, presented below, would reduce the contribution of GHG emissions during the construction period of the Signalized Claribel Road/Roselle Avenue Intersection project.

> **Mitigation Measure GHG-1:** To the extent feasible and to the satisfaction of Stanislaus County official and Caltrans, the following measures shall be incorporated into the design and construction of the Signalized Claribel Road/Roselle Avenue Intersection project:
>
> - On-site idling of construction equipment shall be minimized (no more than five minutes maximum);

- Biodiesel shall be used as an alternative fuel diesel for at least 15 percent of the construction vehicles/equipment used if there is a biodiesel station within five miles of the Project site;

- At least 10 percent of the building material used for the proposed project shall be local to the extent feasible; and

- At least 50 percent of construction waste or demolition materials shall be recycled.

Implementation of **Mitigation Measure GHG-1** would reduce the contribution of GHG emissions during construction. Impacts would be less than significant with mitigation incorporated.

Quantification. As noted previously, neither the SJVAPCD, Caltrans, nor ARB has issued quantified CEQA significance thresholds for construction-related GHG emissions. However, Section 15064.4 of the State CEQA Guidelines states,

> "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

In response to Section 15064.4 of the State CEQA Guidelines, GHG emissions related to the Signalized Claribel Road/Roselle Avenue Intersection Project were quantified for this letter report. Consistent with emissions analysis procedures recommended by the SJVAPCD (http://www.valleyair.org/ISR/Documents/ISR_faq_rc.pdf), the emissions due to construction of the Signalized Claribel Road/Roselle Avenue Intersection project were estimated using the Road Construction Emissions Model. This model is available at the Sacramento Metropolitan Air Quality Management District website (http://www.airquality.org/ceqa/index.shtml).

The Road Construction Emissions Model output report for the Signalized Claribel Road/Roselle Avenue Intersection project is shown in **Table 1**. Construction of the proposed project would generate 676.2 tons, which equals 613.3 metric tons, of CO_2 during the construction period.

The Road Construction Emissions Model reports CO_2 emissions, but not CH_4 or N_2O emissions. The global warming potential associated with the Signalized Claribel Road/Roselle Avenue Intersection project would be somewhat higher than the amount of CO_2 emissions because CH_4 and N_2O emissions would contribute to global warming. However, the amount of CO_2 emissions provides a quantified estimate of the project project's potential impact on climate change.

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Claribel Rd & Roselle Ave Intersection Improv Project Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.4	21.5	35.6	77.6	1.6	76.0	17.2	1.4	15.8	4,612.3
Grading/Excavation	15.5	81.6	161.8	84.0	8.0	76.0	23.1	7.3	15.8	17,349.2
Drainage/Utilities/Sub-Grade	10.6	56.4	94.9	81.5	5.5	76.0	20.8	5.0	15.8	10,941.6
Paving	4.5	27.0	38.1	2.5	2.5	-	2.3	2.3	-	4,954.3
Maximum (pounds/day)	15.5	81.6	161.8	84.0	8.0	76.0	23.1	7.3	15.8	17,349.2
Total (tons/construction project)	0.6	3.3	6.1	3.9	0.3	3.6	1.0	0.3	0.7	676.2

Notes:

Project Start Year ->	2017
Project Length (months) ->	5
Total Project Area (acres) ->	15
Maximum Area Disturbed/Day (acres) ->	8
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Claribel Rd & Roselle Ave Intersection Improv Project Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.5	9.8	16.2	35.3	0.7	34.5	7.8	0.6	7.2	2,096.5
Grading/Excavation	7.0	37.1	73.6	38.2	3.6	34.5	10.5	3.3	7.2	7,886.0
Drainage/Utilities/Sub-Grade	4.8	25.7	43.1	37.0	2.5	34.5	9.5	2.3	7.2	4,973.4
Paving	2.0	12.3	17.3	1.1	1.1	-	1.0	1.0	-	2,252.0
Maximum (kilograms/day)	7.0	37.1	73.6	38.2	3.6	34.5	10.5	3.3	7.2	7,886.0
Total (megagrams/construction project)	0.6	3.0	5.5	3.5	0.3	3.2	0.9	0.3	0.7	613.3

Notes:

Project Start Year ->	2017
Project Length (months) ->	5
Total Project Area (hectares) ->	6
Maximum Area Disturbed/Day (hectares) ->	3
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Table 1. Road Construction Emissions Model Output Report

Operational Emissions

While land use development projects can generate new vehicle trips, roadway improvement projects do not generate vehicle trips. As a result, the long-term operational effects of roadway improvement projects in general on GHG emissions and global climate change result from:

- changes in the geographic distribution of vehicle miles travelled, which is manifested in changes in traffic volumes; and

- changes in vehicle speed, which affects the rate at which vehicles generate GHG emissions.

As described in a February 11, 2016 memorandum from Nate Tumminello, P.E. of the Stanislaus County Department of Public Works to the Stanislaus Council of Governments Interagency Consultation Partners, Subject: *Consultation on PM_{10} and $PM_{2.5}$ Hot-spot Conformity Assessment for The Signalized Claribel Road/Roselle Avenue Intersection Project*, the proposed project would not result in a change in traffic volumes. Because the proposed project would not change traffic volumes, it would not result in a change in the geographic distribution of vehicle miles traveled. Therefore, the long-term operational effect of the proposed project on GHG emissions would be due to changes in vehicle speed.

The February 11, 2016 memorandum from Nate Tumminello, P.E. also presents a comparison of intersection LOS without and with the Signalized Claribel Road/Roselle Avenue Intersection project, under existing background, near-term future background, and long-term future background conditions. As noted in the memorandum,

> "The project would not degrade LOS at the intersection and, in nearly all scenarios, would improve LOS at the intersection."

The precise change in vehicle speed due to the proposed project would depend on the size of the area studied. In the immediate vicinity of the intersection, vehicle speed would be predominantly determined by vehicle queuing and the level of congestion and, therefore, would be quite low especially under long-term future background conditions without the project. Outside of the immediate vicinity of the intersection, more distant from vehicle queuing and congestion, speeds would be higher.

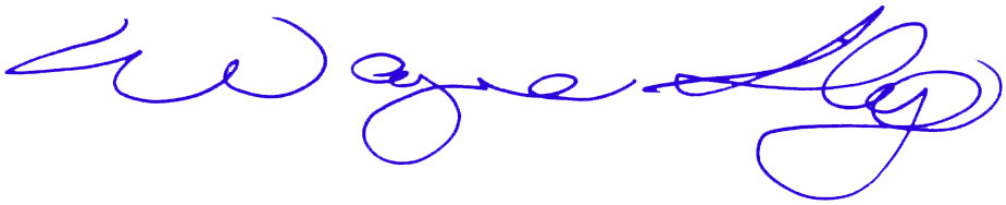
Even without being able to precisely quantify the change in vehicle speeds, the project-related improvement in LOS indicates the project would result in an increase in the speed of vehicles traveling through the intersection. As shown in **Figure 4** above, the increase in vehicle speed would result in a reduction in the amount of CO_2 emissions generated by vehicles traveling through the intersection. Because the Signalized Claribel Road/Roselle Avenue Intersection project would result in a reduction in long-term operational CO_2 emissions, the project is considered to have a less-than-significant impact on global climate change.

CLOSING

KD Anderson & Associates appreciates this opportunity to provide the County of Stanislaus and Foothill Associates with air quality and global climate change analysis services on the Signalized Claribel Road/Roselle Avenue Intersection project. If you have any questions about this report, please let me know by contacting me via E-mail at wshijo@kdanderson.com or telephone at 916/205-7032.

Sincerely,

KD Anderson & Associates, Inc.



Wayne Shijo
Project Manager

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Appendix G — *Initial Site Assessment* [for the] *Claribel Road at Roselle Avenue Intersection Project, Stanislaus County, California*

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INITIAL SITE ASSESSMENT

Claribel Road at Roselle Avenue Intersection Project
Stanislaus County, California

Prepared by:

Crawford & Associates, Inc.
1165 Scenic Drive, Suite B
Modesto, CA 95350

2015

Prepared for:

Mark Thomas & Company, Inc.
7300 Folsom Blvd., Suite 203
Sacramento, CA 95826

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Sacramento • Modesto • Rocklin • Pleasanton

14-149.2
November 20, 2015

James Pangburn
Mark Thomas & Company, Inc.
7300 Folsom Blvd., Suite 203
Sacramento, CA 95826

Subject: **INITIAL SITE ASSESSMENT**
Claribel Road at Roselle Avenue Intersection Project
Stanislaus County, California

Dear Mr. Pangburn,

Crawford & Associates, Inc. prepared this Initial Site Assessment for the Claribel Road at Roselle Avenue Intersection Project in Stanislaus County, California. The purpose of this assessment is to identify and preliminarily assess the potential impacts of known or potential Recognized Environmental Conditions within the study area that may influence design and construction of the project. In general, project improvements will consist of new right-of-way, a traffic signal and storm drainage improvements.

We include an executive summary, property information, records review, reconnaissance, findings and conclusions, and limitations in this report.

We appreciate the opportunity to be on your team for the Claribel Road at Roselle Avenue Intersection Project. Please call us if you have questions or comments.

Sincerely,

CRAWFORD & ASSOCIATES, INC.,

David P. Castro, PE
Associate Project Manager

Benjamin D. Crawford, GE
Principal Geotechnical Engineer

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FIGURE 1: Vicinity Map

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EXECUTIVE SUMMARY

Crawford & Associates, Inc. performed an Initial Site Assessment for the Claribel Road at Roselle Avenue Intersection Project in Stanislaus County, CA. The proposed project will likely consist of a new traffic signal at the intersection, lane widening near the intersection approaches, overhead utility realignment, pavement overlay, and storm drainage improvements.

The subject site of this assessment includes a one-mile radius from the existing Claribel Road and Roselle Avenue intersection.

The roadway has been in its current configuration since at least 1969 and many of the adjacent properties have been used for agricultural purposes since about 1957.

The purpose of this assessment is to identify recognized soil and/or groundwater contamination/hazardous material issues that may affect the planned project improvements. We identified the following potential hazardous materials issues that should be considered in present and future planning of project improvements.

Our review of environmental databases indicates the following considerations;

- An underground storage tank was located on parcel 075-025-005 (5130 Roselle Avenue) approximately 880 ft north of the intersection. Based on the distance of the parcel from the project limits and no records found on the Geotracker data base, this parcel is not expected to impact project implementation.
- A leaking underground storage tank was located on parcel 084-001-025 (3213 Claribel Road) approximately 780 ft east of the intersection. The diesel contaminated soil was reportedly remediated and the case was closed in 1998. Based on the 1998 Technical Memo found on the Geotracker database, the soil test results were below the laboratory reporting limits, therefore this parcel is not expected to impact project implementation.

Our review of historical aerial photographs of the site and vicinity suggest the following consideration;

- From 1984 to 1993 discarded motor vehicles and other miscellaneous debris appear abundant on Parcel 075-025-010 (5054 Roselle Avenue) approximately 450 ft north of the intersection, suggesting potential use as a motor vehicle junk yard. We also observed other automotive dismantling operations during this time in the general area northeast of the site. No documentation of regulatory action for the parcel was found, and aerial photography evidence suggests that the portion of the parcel included within the proposed project was not used for these activities. Thus, impact from the historical debris to proposed project implementation appears unlikely. However if waste (oil, gasoline, diesel, etc) is encountered during construction it should be removed and disposed according to local regulatory agency requirements.

The proposed project impacts existing roadways, structures and agricultural properties. The following potential general hazardous materials or environmental concerns are typical of similar projects and should be considered. They are discussed in more detail in Section 5.2.

- Building Materials
- Asphalt
- Yellow Traffic Stripes
- Transformers
- Agricultural Chemicals (Pesticides/Herbicides)

This report identifies REC and general hazardous materials issues that may be present at the site, and provides a preliminary assessment of their potential impact on project implementation. Additional research and assessment may provide more certainty on conditions to be encountered during construction.

1 INTRODUCTION

Crawford & Associates, Inc. (CAInc) performed an Initial Site Assessment (ISA) for the Claribel Road at Roselle Avenue Intersection Project in Stanislaus County, CA. During peak commute times the intersection is overloaded with high traffic volume. The purpose of this project is to increase the safety and operational conditions of the intersection by adding a traffic signal and expanding the intersection to accommodate increased traffic volumes.

1.1 Project Description

To increase the safety, operational conditions and improve air quality the project will likely include the following improvements:

- A traffic signal at the intersection,
- Expand county right-of-way along each approach and dedicated turns lanes,
- New pavement sections or pavement rehabilitation,
- Above ground utility realignments, and
- Storm drainage improvements.

1.2 Purpose

This ISA was completed at the request of Mark Thomas & Company, Inc., (MTCo). The purpose of this ISA is to identify and assess the potential impacts of known "Recognized Environmental Conditions" (REC) and potential REC within the study area that may influence design and construction of the Claribel at Roselle Intersection Project.

We use the term Recognized Environmental Condition (REC) in general but not in strict compliance with ASTM E1527-05. ASTM E1527-05 defines REC as:
"the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimis are not recognized environmental conditions."

1.3 Scope of Services

CAInc completed the following to prepare this ISA:

- Conducted a limited site inspection of the property and vicinity,
- Reviewed available information to assess past and present operations conducted on the subject parcels and assess the potential for hazardous substances impact,
- Reviewed historical aerial photographic coverage and topographic map coverage of the project area and surrounding properties for indications of potential sources of contamination,
- Performed review of federal, state, and county records for indications of the use, misuse, or storage of hazardous and/or potentially hazardous substances on or near the site,
- Reviewed the site geology, and
- Performed a limited review of documents provided on the State Geotracker website.

2 PROPERTY INFORMATION

2.1 Site Location

The project site is located about 1 mile north of Modesto near the southern city limit of Riverbank, at the intersection of Roselle Avenue and Claribel Road, in Stanislaus County. The current intersection consists of a four way stop, with two-lane rural roadways at each approach.

Rural residential properties and agricultural fields are located adjacent to the site. Modesto Irrigation District (MID) Main Canal is located about 2,000 feet east of the intersection and runs from east to west. The MID Lateral No. 6 is about 600 feet north of the intersection. The project site is relatively flat with elevations ranging from 127 to 130 feet Mean Sea Level. An existing storm drain line is located on the south side of Claribel Rd about 180 ft west of Roselle and connects to the MID canal to the north.

See Figure 1 for the Vicinity Map and Project Limits.

2.2 Geologic Conditions

The Project is located in the Great Valley Geomorphic Province. This province includes the San Joaquin Valley and is bounded by the Sierra Nevada on the east and the Coast Ranges on the west. The San Joaquin Valley is a structural trough comprising the southern portion of the Great Valley.

The relatively flat surface of the San Joaquin Valley is underlain by alluvial, lacustrine, and marine sedimentary deposits that have accumulated as the structural trough formed and the adjacent mountain ranges were elevated. The sediment depth is several thousand feet near the trough axis and tapers to a thin veneer at the east margin of the valley.

Based on our review of the Department of Conservation Geologic Map of San Francisco-San Jose Quadrangle 1991, the study area is underlain by Riverbank Formation: Pleistocene-age sediments comprised mostly of slightly-consolidated silt and sand, typically medium dense to dense.

2.3 Groundwater Elevations

The GEOCHECK® physical setting source summary (Appendix C), lists two Federal USGS wells and five State wells, within one mile of the project site. We reviewed groundwater conditions in the vicinity using the California Department of Water Resources Data Library website (water.ca.gov). Based on our research, the groundwater elevations in the last 10 years range from about 58 to 67 ft below ground surface.

2.4 Current Land Use

In general, current land use within the project limits consists of existing roadway and associated right-of ways, and agricultural fields adjacent to the northwest and southeast corners of the intersection and along the north side of Claribel Rd east of Roselle Ave. There are four residential properties along Roselle Ave north of Claribel Rd, one southwest of the intersection and a church on the west side of Roselle Ave south of Claribel Rd. We summarize the current land uses observed during our site visit in Section 4.

2.5 Historical Land Use

2.5.1 Summary

The project vicinity has been altered slightly in the past 50 years. Between 1957 and 1993 the project vicinity consists mostly of rural residential properties and agricultural crop fields. Urban development (Elmwood Estates) is seen by 2005. Predominant land use in the general project area has historically been agricultural fields and rural residential. In the past 10 years significant residential urban development occurred in the Riverbank area to the north (Elmwood Estates).

2.5.2 Historical Aerial Photographs

EDR provided the following historical aerial photographs for our review (Appendix A).

Table 1: Historical Aerial Photographs

Year	Source	Scale
1957	CARTWRIGHT	1”=500’
1967	USGS	1”=500’
1973	USGS	1”=500’
1984	USGS	1”=500’
1987	USGS	1”=500’
1993	EDR	1”=500’
2005	EDR	1”=500’
2006	EDR	1”=500’
2009	EDR	1”=500’
2010	EDR	1”=500’
2012	EDR	1”=500’

We looked for information of past conditions and land use in the property and we provide the following aerial photo summary.

1957

Claribel Road and Roselle Avenue are shown. Roselle Avenue appears to be in its current configuration. The residence at Parcel 075-025-009 is shown. The Modesto Irrigation District (MID) Main Canal and Lateral No. 6 are to the north of the intersection. A small irrigation ditch is running off the MID Lateral No. 6 to the south along the west side of the project area. The residence at 3213 Claribel is shown. The project area consists mostly of agricultural fields. The Hetch Hetchy Aqueduct is seen in its current configuration just north of the MID Lateral No. 6.

1967 to 1993

The small irrigation ditch running south from the MID Lateral No. 6 has been removed or buried on Parcel 075-014-026. Additional structures at the 3213 Claribel residence are shown. There appears to be a junkyard on Roselle north of MID Main Canal. Claribel Road (west of the intersection) has been realigned to its current configuration. The residence at Parcel 075-025-005 is shown.

1993 to 2005
The church to the southwest of the intersection was built. Urban residential (Elmwood Estates Subdivision) development in Riverbank is shown to the northwest of the site.

2005 to 2012
The subdivision continues to add single-family homes.

2.5.3 Historical Topographic Maps
EDR provided historical topographic maps for our review (Appendix B). We looked for significant changes in topography or property improvements.

Table 2: Historical Topographic Maps

Year	Quad	Series	Scale
1916	RIVERBANK	7.5	1:31680
1941	MODESTO EAST	15	1:50000
1953	RIVERBANK	7.5	1:24000
1969	RIVERBANK	7.5	1:24000
1976	RIVERBANK	7.5	1:24000
1987	RIVERBANK	7.5	1:24000

1916 RIVERBANK
Claribel Road terminates at Oakdale Road west of the project site and begins again at Claus Rd east of the project site. The town of Riverbank is to the north and Roselle Avenue has only a few rural residential structures. MID Main Canal and the MID Lateral No. 6 are shown. The Atchison, Topeka and Santa Fe Railway is shown about a half mile east of the intersection.

1941 MODESTO EAST
Claribel Road has been extended to Roselle and Claribel Road is altered to the current alignment west of the project site. Some residential and commercial development is shown in the area.

1953 RIVERBANK
The Riverbank Ordinance Depot is shown to the east. The project area consists mostly of agricultural fields with few residences. Claribel extends east of Roselle and connects to Terminal Ave. The Hetch Hetchy right-of-way is shown.

1969 RIVERBANK
The Riverbank Army Ammunition Plant is shown adjacent to the Ordinance Depot. City of Riverbank continues to expand north of the project area.

1976 RIVERBANK
No significant changes are noted when compared to the 1969 Map. Beyer High School to the southwest is now shown.

1987 RIVERBANK
No significant changes are noted when compared to the 1976 Map. Development continues in the City of Modesto to the south is shown. City of Riverbank continues to expand north of the project area.

2.5.4 Sanborn® Maps
According to EDR, Sanborn Maps were not available for the area within the searched radius.

2.5.5 City Directory
City Directories for major towns and cities list the name of the resident or business associated with each address in the property vicinity. The City Directory Report by EDR is presented in Appendix D.

3 RECORDS REVIEW

Environmental Data Resources, Inc. (EDR) of Milford, Connecticut completed a search of Federal, State and County databases for indications of the use, misuse, or storage of hazardous and/or potentially hazardous substances on or near the property. The EDR study has a search radius of 1-mile from the center of the Claribel and Roselle intersection.

Sites with adequate address information were plotted by EDR (Appendix C). Sites with inadequate address information are listed as "orphan sites" and mapped locations were not provided. CAInc also reviewed the list of "orphan sites" identified by EDR for potential impacts to the site.

3.1 Summary of Records Search

The following facilities or locations are listed on Federal, State, or Local ASTM Standard or supplemental environmental databases and located within the appropriate ASTM search distances of the subject property.

MCKENNA RESIDENCE, located at 3213 Claribel Road (APN 084-001-025), at the eastern end of the site, is listed on the LUST and HIST CORTESE databases due to the historical presence of a leaking underground storage tank. Soil was reportedly impacted by diesel that leaked from the tank. The impacted soil was remediated and the status of "case closed" was reported on October 30, 1998.

JERRY COLE, located at 5130 Roselle Avenue (APN 075-025-005), approximately 200 feet north of the site is listed on the UST, CAL FID and SWEEPs databases due to the historical presence of 550-gallon underground storage tank. The tank contained regular motor vehicle fuel and the CAL FIDS database lists the status of the tank as "closed."

ELMWOOD ESTATES, located at 5536 Roselle Avenue, approximately 800 feet northwest of the site is listed on the ENVIROSTOR and SLIC databases due to assessment and remediation of soil impacted by petroleum hydrocarbons and lead. The contamination was associated with the activities of auto dismantling businesses operating at the location prior to construction of the current residential development. An investigation of an UST at the location is also referenced. No additional information is provided. As of November 17, 1993, the status is listed as "Refer: Other agency." Based on the distance from the site and the current status of this location as a residential development it is unlikely to have an impact on the proposed project implementation.

RIVERBANK DUMP SITE, located at 5631 Terminal Avenue, approximately 4000 feet northeast of the site is listed on the ENVIROSTOR database due to an assessment of the location that concluded additional work was necessary. The location was formerly used for disposal of waste oils and sludges generated from the Riverbank Army Ammunition Plant. As of June 2008, the status is listed as "Inactive-Action

required." Due to the distance from the subject site, this facility is unlikely to have an impact on the proposed project implementation.

3.2 Title Documents Review

Title documents provided by the county were reviewed for the following Parcels; 075-025-009, 075-025-011, 083-002-024, 075-014-026. No additional hazardous materials issues were discovered.

3.3 Prior Environmental Reports

We reviewed the 2011 Claribel Road Widening (between McHenry Ave and Oakdale Rd) ISA Report by Engeo, the 2015 North County Corridor Project ISA Report by Crawford and Associates, and the 1998 Technical Memo by Stanislaus County Department of Environmental Resources. These reports did not indicate additional environmental concerns in the vicinity of the subject site that are not noted in this report. We include the 1998 Technical Memo in Appendix E.

3.4 Well Search

The EDR search listed two state oil/gas wells, five state groundwater wells and two federal groundwater wells within one mile of the project site. The oil/gas well #1 is located about 0.4 miles to the northeast from the intersection. The oil/gas well #2 is located about 0.6 miles to the southeast from the intersection. There are a few groundwater wells within a ¼ mile of the intersection. At this time the exact locations of the five state and two federal groundwater wells are unknown. Additional well records evaluation may be needed to confirm well locations prior to final design. The GEOCHECK source map findings by EDR are presented in Appendix C.

4 RECONNAISSANCE

CAInc visited the study area on November 18, 2015. The properties within the project vicinity were viewed for hazardous materials storage, surface staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The sites were also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Observations made during the site reconnaissance generally support our research and background data.

Below we show photos and current land use observations of the properties visited during our reconnaissance. Our site reconnaissance includes parcels with REC records and adjacent to the project limits.

Photo 1: APN 075-25-005 (5130 Roselle Avenue)

The property in Photo 1 is recorded to have an underground storage tank. This property appears to be a ranchette, single-family residence, with a gravel driveway and no visible signs of REC observed within the planned improvement area.

Photo 2: APN 084-001-025 (3213 Claribel Road)

The property in Photo 2 is recorded to have a leaking underground storage tank. This property appears to be a ranch, single-family residence, with two agriculture barns surrounded by disced fields. Transformers are potential REC observed within the planned improvement area.

Photo 3: APN 075-025-010, 075-025-007, 075-025-008
(Properties along Roselle Ave North of Claribel)

The properties in Photo 3 are located within the project limits along the east side of Roselle in the northeast corner. They appear to be ranchette properties with single-family residences on each lot. Transformers are potential REC observed within the planned improvement area. Improvements along Roselle may include partial parcel acquisitions to accommodate additional roadway.

Photo 4: APN 075-014-026

The property in Photo 4 is within the project limits and appears to be an agriculture field. No visible signs of REC were observed within the planned improvement area.

Photo 5: APN 084-001-023

The property in Photo 5 is within the project limits and appears to be an agriculture field. Transformers are potential REC observed within the planned improvement area.

Photo 6: APN 083-002-025

The property in Photo 6 is within the project limits and appears to be an agriculture property with a community church and paved parking area, surrounded by landscaping and pasture. No visible REC was observed within the planned improvement area.

Photo 7: APN 083-002-024

The property in Photo 7 is within the project limits and appears to be a ranchette with many large trees and tall grasses surrounding the single-family residence. No visible signs of REC were observed within the planned improvement area.

Photo 8: APN 075-025-009

The property in Photo 8 is within the project limits. The property consists of a single-family residence with a detached garage. No visible signs of REC were observed within the planned improvement area.

Photo 9: APN 075-025-011

The property in Photo 9 is within the project limits. During our initial site visit the property contained an open field, residential structure, and flatwork. Currently the structure and flatwork have been removed and the site-graded. No visible signs of REC were observed within the planned improvement area.

5 FINDINGS AND CONCLUSIONS

The purpose of this ISA report is to identify recognized soil and/or groundwater contamination/hazardous material issues that may impact the planned project improvements. The assessment identified the following potential hazardous materials issues that should be considered in present and future planning of project improvements.

5.1 Potential Hazardous Materials Sites

Our records review of regulatory databases lists indicated the following potential hazardous material locations in close proximity to the site.

- An underground storage tank was located on parcel 075-025-005 (5130 Roselle Avenue) approximately 880 ft north of the intersection. Based on the distance of the parcel from the project limits and no records found on the Geotracker data base, this parcel is not expected to impact project implementation.

- A leaking underground storage tank was located on parcel 084-001-025 (3213 Claribel Road) approximately 780 ft east of the intersection. The diesel contaminated soil was reportedly remediated and the case was closed in 1998. Based on the 1998 Technical Memo found on the Geotracker database, the soil test results were below the laboratory reporting limits, therefore this parcel is not expected to impact project implementation.

Our review of historical aerial photographs of the site and vicinity suggest the following consideration;

- From 1984 to 1993 discarded motor vehicles and other miscellaneous debris appear abundant on Parcel 075-025-010 (5054 Roselle Avenue) approximately 450 ft north of the intersection, suggesting potential use as a motor vehicle junk yard. We also observed other automotive dismantling operations during this time in the general area northeast of the site. No documentation of regulatory action for the parcel was found, and aerial photography evidence suggests that the portion of the parcel included within the proposed project was not used for these activities. Thus, impact from the historical debris to proposed project implementation appears unlikely. However if waste (oil, gasoline, diesel, etc) is encountered during construction it should be removed and disposed according to local regulatory agency requirements.

Based on our understanding of the current project limits shown by Figure 1, the potential to encounter RECs from the above locations is beyond the project limits. Based on our professional opinion and experience we consider the affects of the potential RECs will be low on the design and construction of the Claribel Rd at Roselle Ave Intersection Project.

5.2 General Hazardous Materials Issues

5.2.1 Building Materials

Existing structures that are impacted by the project improvements may encounter asbestos and lead-based paint associated with the demolition/modification. Prior to demolition, the exiting structures on the affected properties will be required to have asbestos and lead-based paint surveys completed.

5.2.2 Asphalt

Proposed project improvements include removal of existing asphalt roadway and historical asphalt road sections. Currently asphalt is not regulated as a hazardous material, but potential contaminants in the asphalt binder require off-site disposal restrictions imposed by the State of California Integrated Waste Management Board. These restrictions are more onerous for more recently placed asphalt. Consequently asphalt removal from the project will need to be disposed in accordance with current regulations.

5.2.3 Yellow Traffic Stripes/Thermoplastic

Yellow traffic stripes/thermoplastic typically contain heavy metals, including lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the California Code of Regulations (CCR) and may produce toxic fumes when heated. Consequently, any yellow traffic striping within the project area will require proper disposal, which may include disposal at a Class 1 disposal facility.

5.2.4 Transformers

The scope of this assessment did not include an inventory of past and present transformers. However, pole-mounted transformers and power lines within the proposed right-of-way were observed. The transformers were generally in good condition. No leaking or soils stains were noted in the vicinity of the transformers. These may need to be considered during project design if the poles are removed or relocated during construction activities. Identification and remediation of old transformers is the responsibility of the utility owner. If the relocation of power poles or high voltage power lines is required, existing transformers should be checked for the presence of polychlorinatedbiphenyls (PCBs) or other hazardous materials by the utility owner, and if present, should be properly remediated and disposed of in accordance with waste regulations.

5.2.5 Agricultural Chemicals (Pesticides/Herbicides)

Small portions of the project footprint (specifically the non-residential areas adjacent to the current roadway) have been historically used for agricultural production, Consequently, there is the potential for the presence of residual environmentally persistent pesticides and/or herbicides in the soil. No evidence of historical pesticide/herbicide mixing, storage and/or misuse within the right-of-way and acquisition areas was observed during site visits. While the probability of residual environmentally persistent pesticides may be low, they are sometimes detected in soils on properties with a long agricultural history. The collection of representative samples for laboratory analysis may provide more certainty and the information may be helpful in project planning (e.g., potential placement of impacted soil under new roadways or disposal requirements), however soil testing for agriculture chemicals may not be warranted.

5.2.6 Aerially Deposited Lead

The presence of aerially deposited lead (ADL) adjacent to heavily traveled roadways is not uncommon. Based on review of aerial photos and topographical maps of the area, we did not find state highways or indications of heavily traveled roadways within the project limits, therefore an ADL study is likely not warranted.

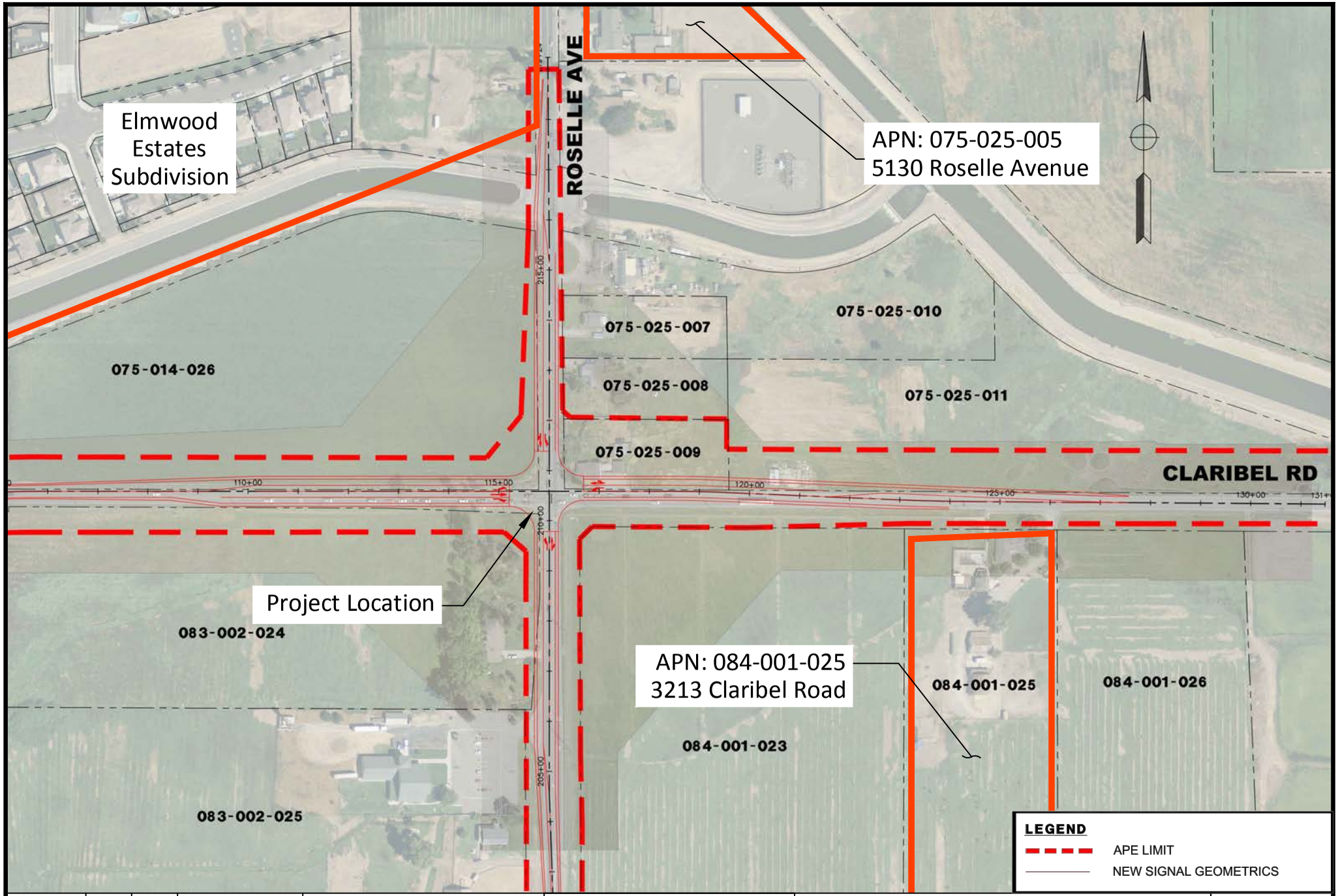
6 LIMITATIONS

This report summarizes the findings and opinions of Crawford & Associates, Inc. (CAInc), with regard to the potential for the presence of contamination/hazardous materials within the project area at concentrations likely to warrant mitigation under current statutes and guidelines. Findings and opinions within this report are based on information obtained on given dates, or provided by specified individuals, through record reviews, site review, and related activities. CAInc's information is only as good as the information provided by these sources. Site conditions may change after documented observations have been made. A warrant or guarantee cannot be made that hazardous materials do not exist at the site. To further reduce risk, an extensive invasive exploration may be necessary prior to project implementation.

This report was prepared for the specific use of MTCo and their agents for this project, and applies only to the area identified as the project area. CAInc is not responsible for interpretations by others of data presented in this report. This report does not represent a legal opinion. No warranty is expressed or implied. Conclusions in this report are based on professional judgment and experience. Work for this assessment was performed in accordance with generally accepted standards of practice in northern California at the time of the assessment.

The scope of this investigation did not include determining the presence of radon, lead-based paint, or asbestos-containing materials. Identifying endangered species, geologic hazards, archeological sites, or ecologically sensitive areas are also beyond the scope of this report.

The governmental records summary within this report is derived from public records, which are updated on a continual basis. For this reason, it is not advisable to use this information to base a decision after 180 days of the issue date of this report. Conditions at the site can and will change over time. Please contact CAInc to revise this report to reflect new information.



Project Mgr.:	DPC				
Project Eng.:					
Designer:					
Checked By:					
Drawn By:	SJC				
	BY	DATE			

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

CLARIBEL ROAD AT ROSELLE AVENUE
INTERSECTION PROJECT

STANISLAUS COUNTY, CA

Figure 1
Vicinity Map

PROJ. NO.:	14-149.2
SCALE:	1":250'
DATE:	7/8/14

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

APPENDIX A

Historical Aerial Photos

CLARIBEL AND ROSELLE
STANISLAUS COUNTY
Modesto, CA 95357

Inquiry Number: 3931795.9
May 07, 2014

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography May 07, 2014

Target Property:

STANISLAUS COUNTY

Modesto, CA 95357

Year	***Scale***	***Details***	***Source***
1957	Aerial Photograph. Scale: 1"=500'	Flight Year: 1957	Cartwright
1967	Aerial Photograph. Scale: 1"=500'	Flight Year: 1967	USGS
1973	Aerial Photograph. Scale: 1"=500'	Flight Year: 1973	USGS
1984	Aerial Photograph. Scale: 1"=500'	Flight Year: 1984 Best Copy Available from original source	USGS
1987	Aerial Photograph. Scale: 1"=500'	Flight Year: 1987 Best Copy Available from original source	USGS
1993	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1993	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	EDR
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	EDR
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	EDR
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	EDR


INQUIRY #: 3931795.9
YEAR: 1957
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 1967
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 1973
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 1984
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 1987
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 1993
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 2005
= 500'
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EDR


INQUIRY #: 3931795.9
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 3931795.9
YEAR: 2012
= 500'
N
EDR

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

APPENDIX B

Historical Topographic Maps

CLARIBEL AND ROSELLE
STANISLAUS COUNTY
Modesto, CA 95357

Inquiry Number: 3931795.4
May 02, 2014

EDR Historical Topographic Map Report

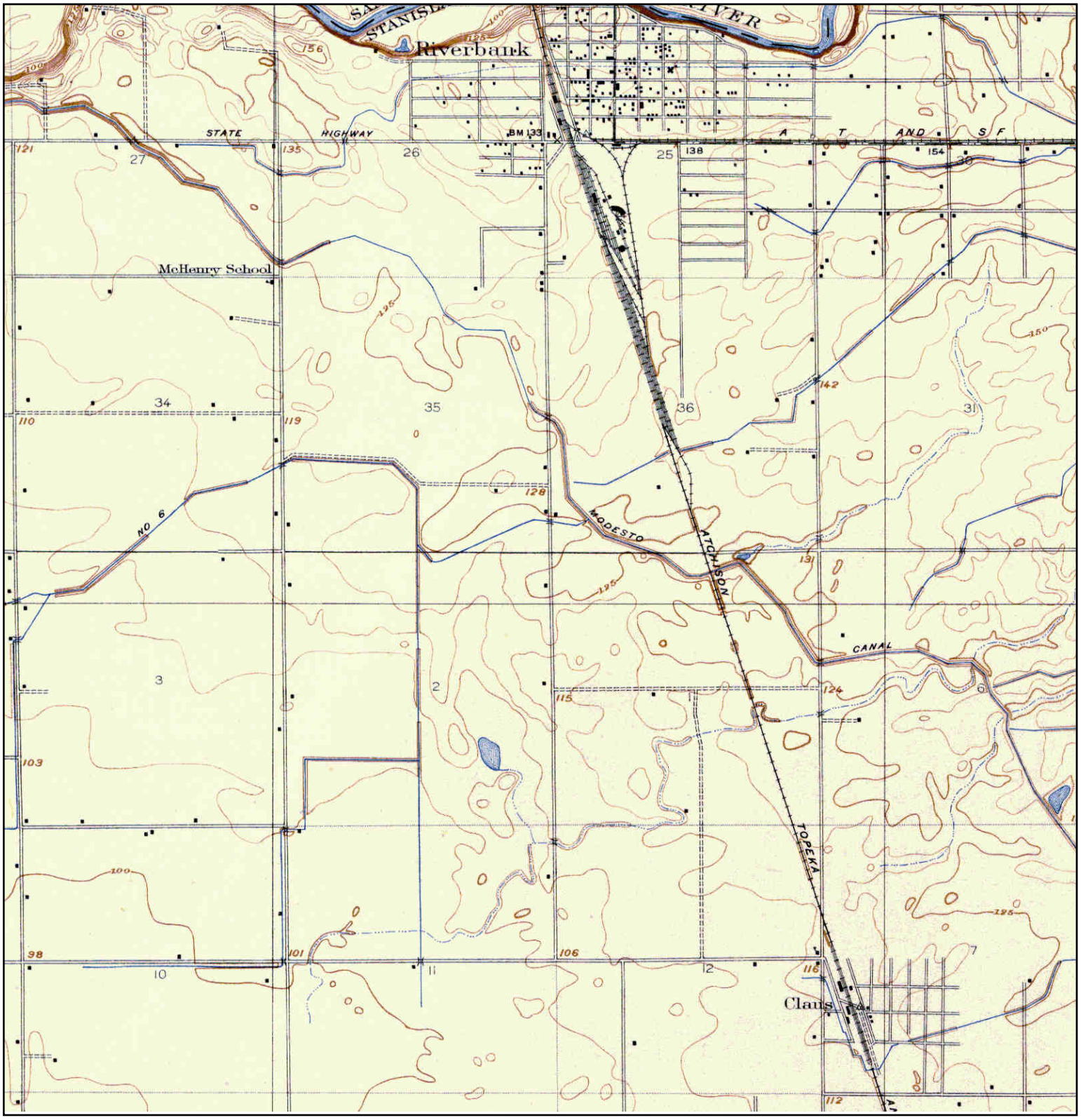
6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

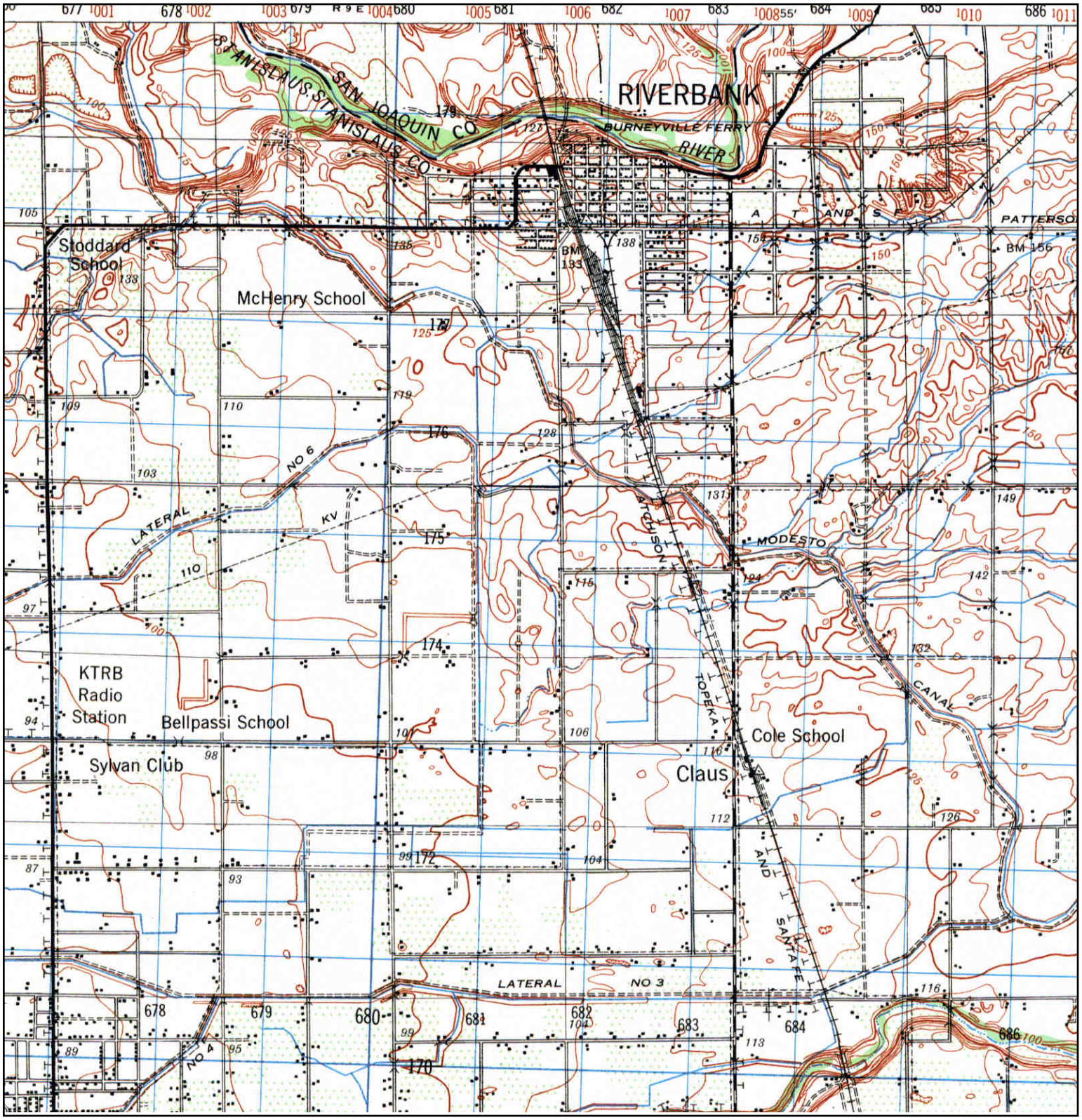
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



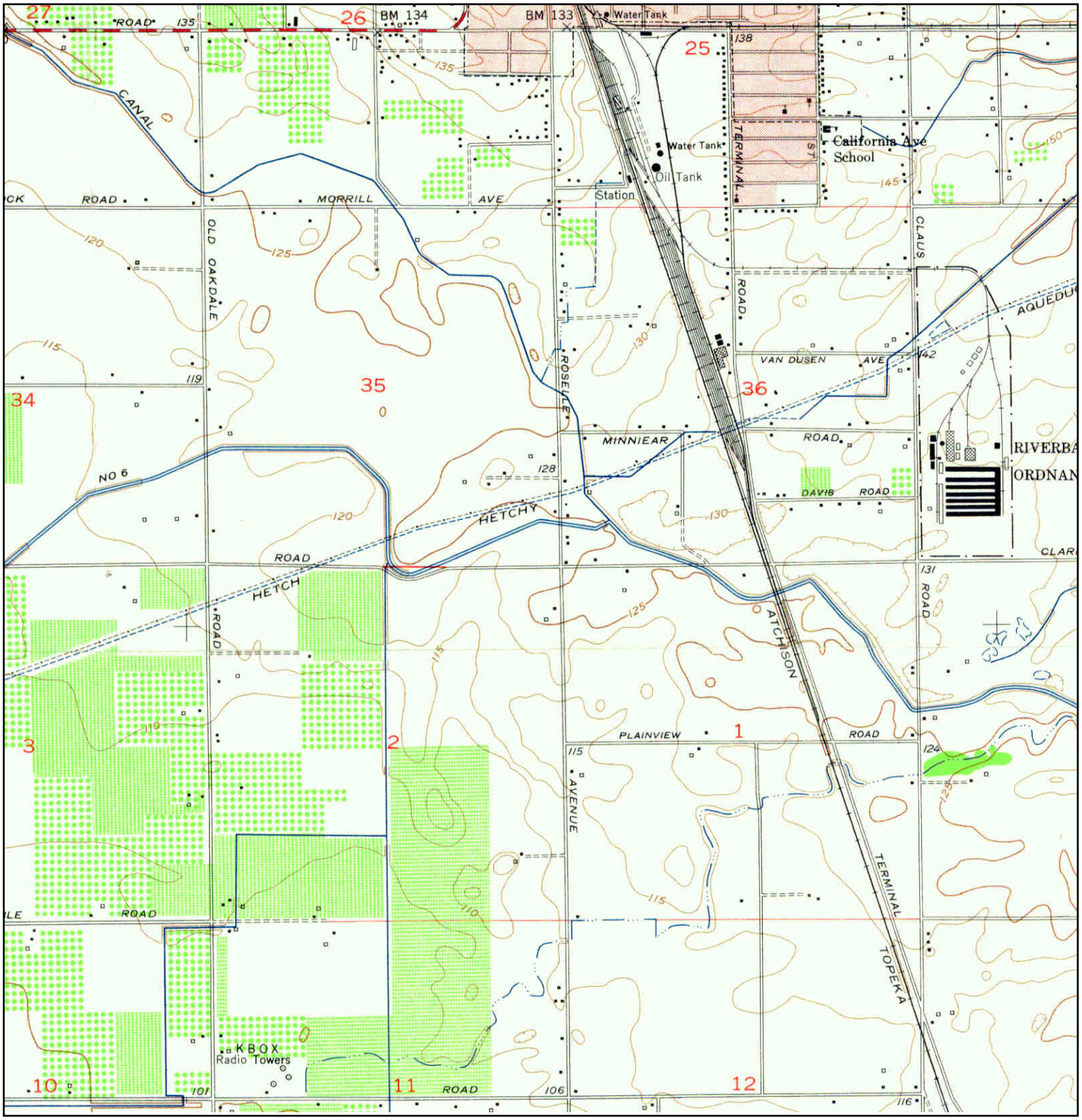
N	TARGET QUAD NAME: RIVERBANK MAP YEAR: 1916 SERIES: 7.5 SCALE: 1:31680	SITE NAME: CLARIBEL AND ROSELLE ADDRESS: STANISLAUS COUNTY Modesto, CA 95357 LAT/LONG: 37.7109 / -120.9401	CLIENT: Crawford & Associates Inc. CONTACT: David P. Castro INQUIRY#: 3931795.4 RESEARCH DATE: 05/02/2014

Historical Topographic Map



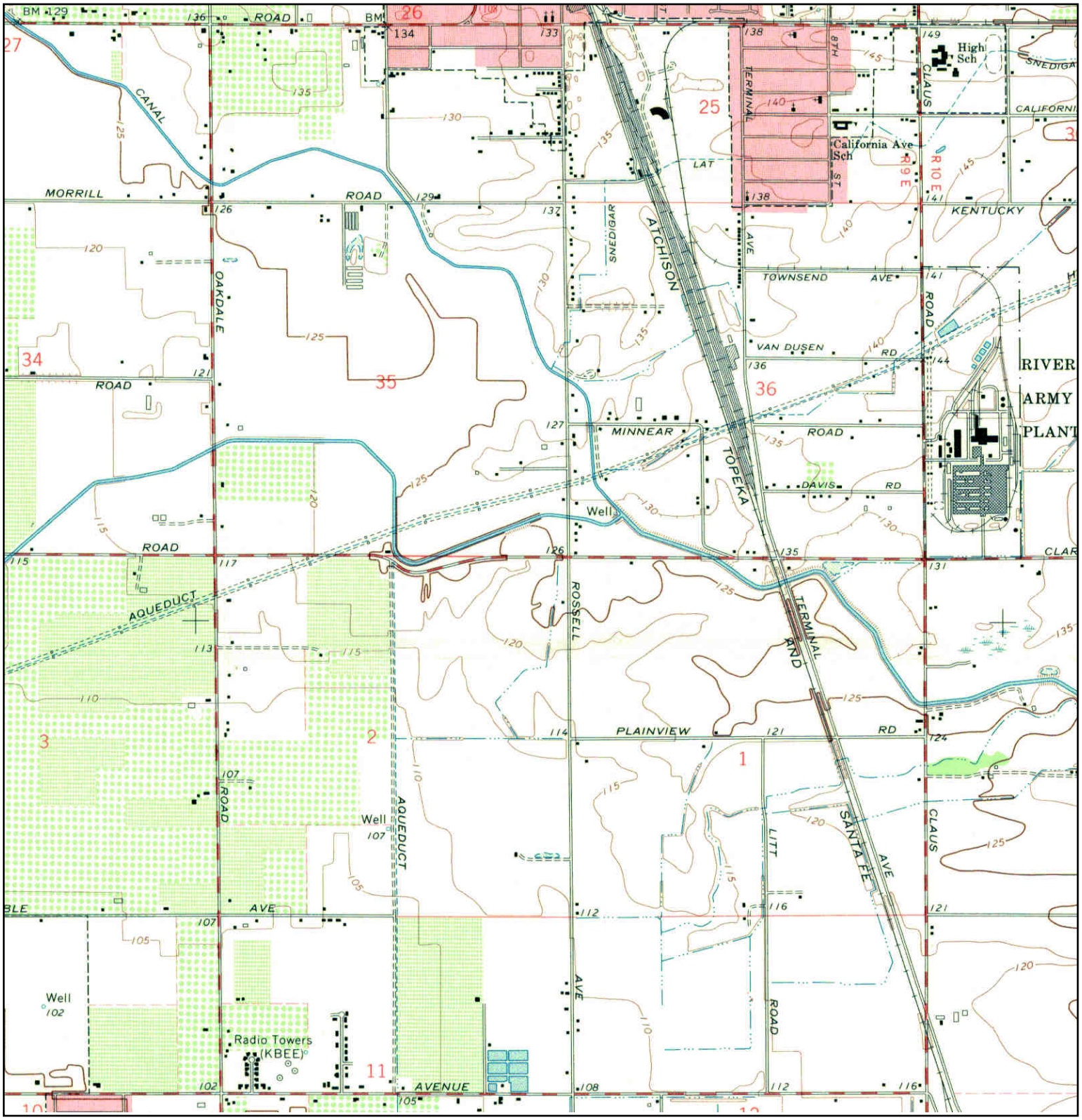
N	TARGET QUAD NAME: MODESTO EAST MAP YEAR: 1941 SERIES: 15 SCALE: 1:50000	SITE NAME: CLARIBEL AND ROSELLE ADDRESS: STANISLAUS COUNTY Modesto, CA 95357 LAT/LONG: 37.7109 / -120.9401	CLIENT: Crawford & Associates Inc. CONTACT: David P. Castro INQUIRY#: 3931795.4 RESEARCH DATE: 05/02/2014

Historical Topographic Map



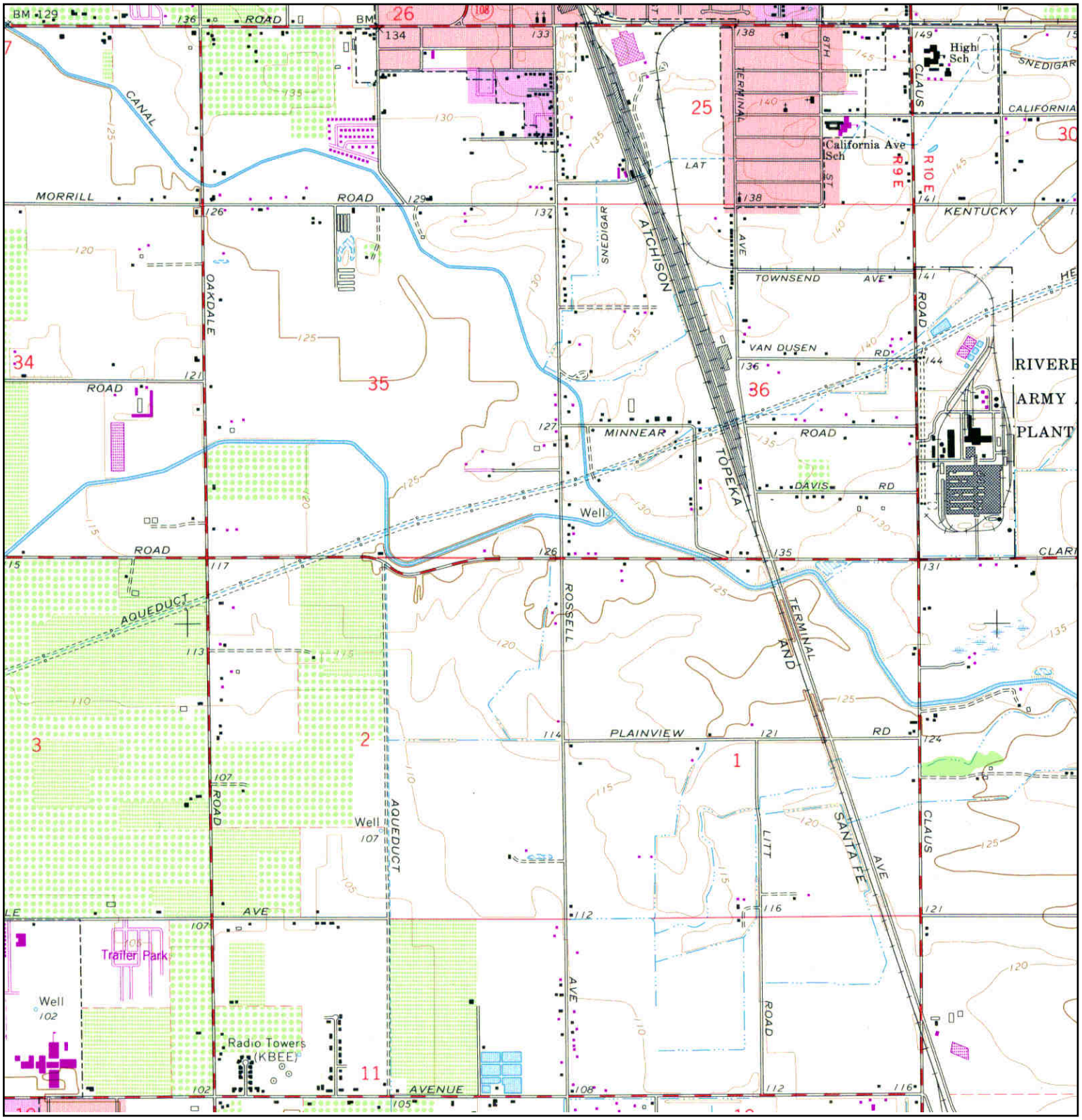
N	TARGET QUAD NAME: RIVERBANK MAP YEAR: 1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: CLARIBEL AND ROSELLE ADDRESS: STANISLAUS COUNTY Modesto, CA 95357 LAT/LONG: 37.7109 / -120.9401	CLIENT: Crawford & Associates Inc. CONTACT: David P. Castro INQUIRY#: 3931795.4 RESEARCH DATE: 05/02/2014

Historical Topographic Map



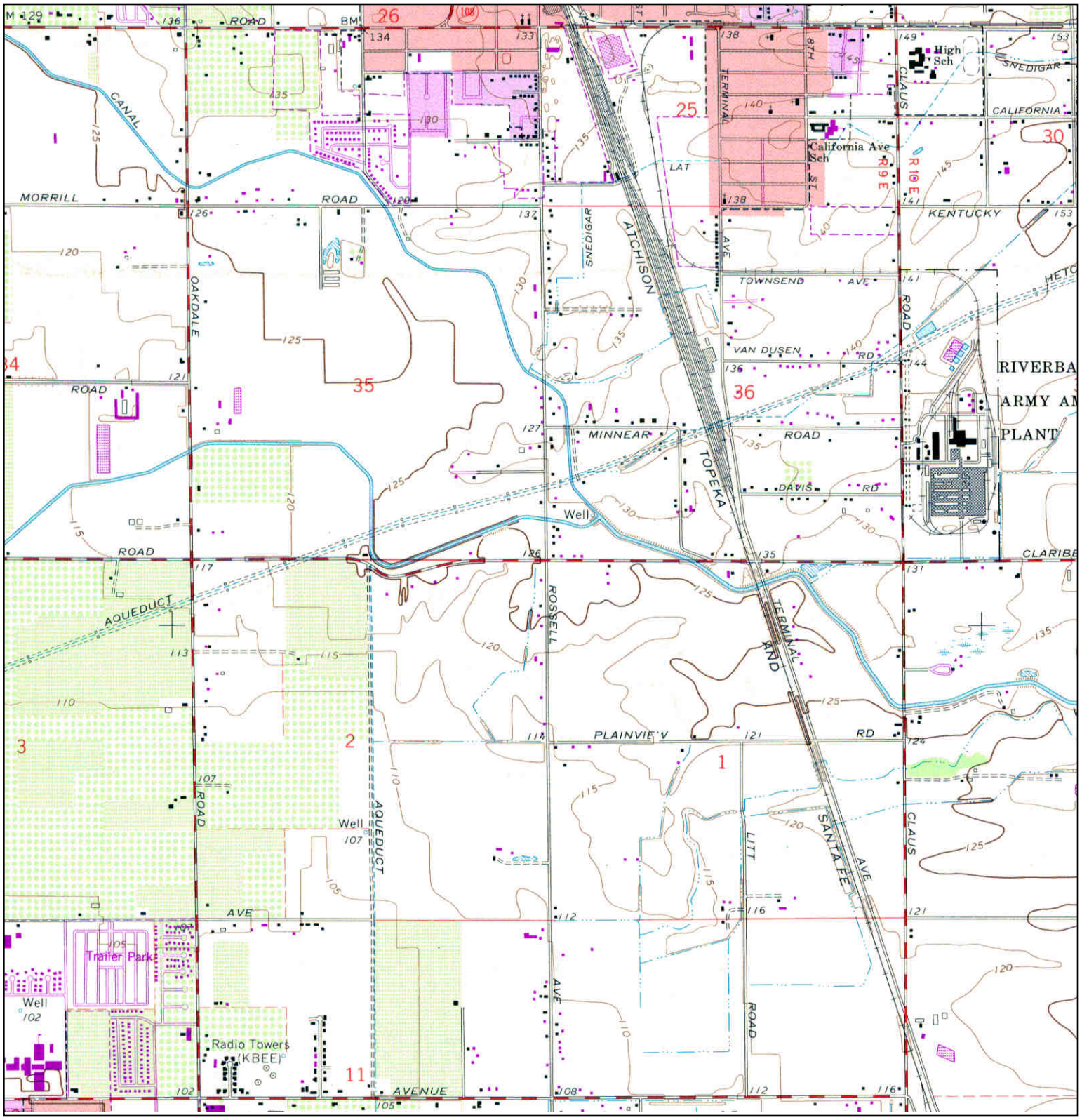
N	TARGET QUAD NAME: RIVERBANK MAP YEAR: 1969 SERIES: 7.5 SCALE: 1:24000	SITE NAME: CLARIBEL AND ROSELLE ADDRESS: STANISLAUS COUNTY Modesto, CA 95357 LAT/LONG: 37.7109 / -120.9401	CLIENT: Crawford & Associates Inc. CONTACT: David P. Castro INQUIRY#: 3931795.4 RESEARCH DATE: 05/02/2014

Historical Topographic Map



N	TARGET QUAD NAME: RIVERBANK MAP YEAR: 1976 PHOTOREVISED FROM :1969 SERIES: 7.5 SCALE: 1:24000	SITE NAME: CLARIBEL AND ROSELLE ADDRESS: STANISLAUS COUNTY Modesto, CA 95357 LAT/LONG: 37.7109 / -120.9401	CLIENT: Crawford & Associates Inc. CONTACT: David P. Castro INQUIRY#: 3931795.4 RESEARCH DATE: 05/02/2014

Historical Topographic Map



N	TARGET QUAD				
	NAME:	RIVERBANK	SITE NAME:	CLARIBEL AND ROSELLE	CLIENT: Crawford & Associates Inc.
	MAP YEAR:	1987	ADDRESS:	STANISLAUS COUNTY	CONTACT: David P. Castro
	PHOTOREVISED FROM :	1969		Modesto, CA 95357	INQUIRY#: 3931795.4
	SERIES:	7.5	LAT/LONG:	37.7109 / -120.9401	RESEARCH DATE: 05/02/2014
	SCALE:	1:24000			

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

APPENDIX C
EDR Report
Inquiry Number: 3931795.2s

CLARIBEL AND ROSELLE
STANISLAUS COUNTY
Modesto, CA 95357

Inquiry Number: 3931795.2s
May 02, 2014

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

STANISLAUS COUNTY
MODESTO, CA 95357

COORDINATES

Latitude (North):	37.7109000 - 37° 42' 39.24''
Longitude (West):	120.9401000 - 120° 56' 24.36''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	681575.8
UTM Y (Meters):	4175531.5
Elevation:	128 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37120-F8 RIVERBANK, CA
Most Recent Revision:	1987

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2012
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ---------- CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls
LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ---------- Active UST Facilities

AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land
FEMA UST ---------- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
CDL ---------- Clandestine Drug Labs
US HIST CDL ---------- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---------- CERCLA Lien Information
LIENS ---------- Environmental Liens Listing
DEED ---------- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
CHMIRS ---------- California Hazardous Material Incident Report System
LDS ---------- Land Disposal Sites Listing
MCS ---------- Military Cleanup Sites Listing
SPILLS 90 ---------- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---------- RCRA - Non Generators
DOT OPS ---------- Incident and Accident Data
DOD ---------- Department of Defense Sites
FUDS ---------- Formerly Used Defense Sites
CONSENT ---------- Superfund (CERCLA) Consent Decrees

ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
NPDES	NPDES Permits Listing
UIC	UIC Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
2020 COR ACTION	2020 Corrective Action Program List
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
WDS	Waste Discharge System
PRP	Potentially Responsible Parties
MWMP	Medical Waste Management Program Listing
COAL ASH DOE	Steam-Electric Plant Operation Data
HWT	Registered Hazardous Waste Transporter Database
HWP	EnviroStor Permitted Facilities Listing
US FIN ASSUR	Financial Assurance Information
Financial Assurance	Financial Assurance Information Listing
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PROC	Certified Processors Database
EPA WATCH LIST	EPA WATCH LIST

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 03/12/2014 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELMWOOD ESTATES Status: Refer: Other Agency	***5536 ROSELLE AVENUE***	***N 1/2 - 1 (0.603 mi.)***	***4***	***10***
RIVERBANK DUMP SITE Status: Inactive - Action Required	TERMINAL AVE	NE 1/2 - 1 (0.754 mi.)	5	12

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 03/17/2014 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MC KENNA RESIDENCE Status: Completed - Case Closed	***3213 CLARIBEL***	***E 1/4 - 1/2 (0.475 mi.)***	***3***	***9***

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JERRY COLE	***5130 ROSELLE AVE***	***N 1/8 - 1/4 (0.136 mi.)***	***A2***	***8***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JERRY COLE	5130 ROSELLE AVE	N 1/8 - 1/4 (0.136 mi.)	A1	8

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JERRY COLE	***5130 ROSELLE AVE***	***N 1/8 - 1/4 (0.136 mi.)***	***A2***	***8***

Other Ascertainable Records

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

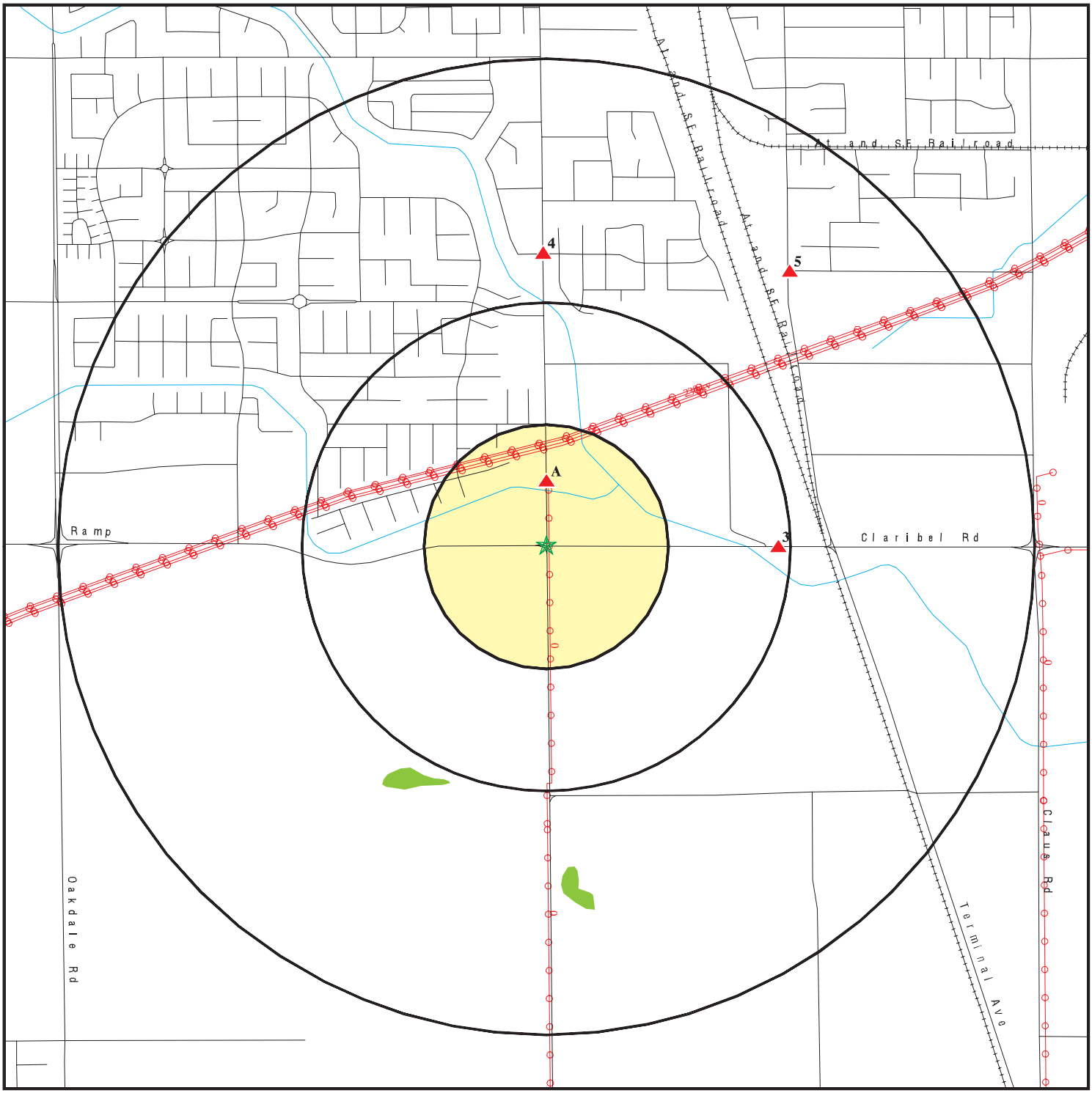
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MC KENNA RESIDENCE	***3213 CLARIBEL***	***E 1/4 - 1/2 (0.475 mi.)***	***3***	***9***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
MODESTO IRRIGATION DISTRICT / CLAR	FINDS
MODESTO IRRIGATION DISTRICT / ROSE	FINDS
JAMES C ENOCH HIGH SCHOOL (PROPOSE	SLIC

OVERVIEW MAP - 3931795.2s

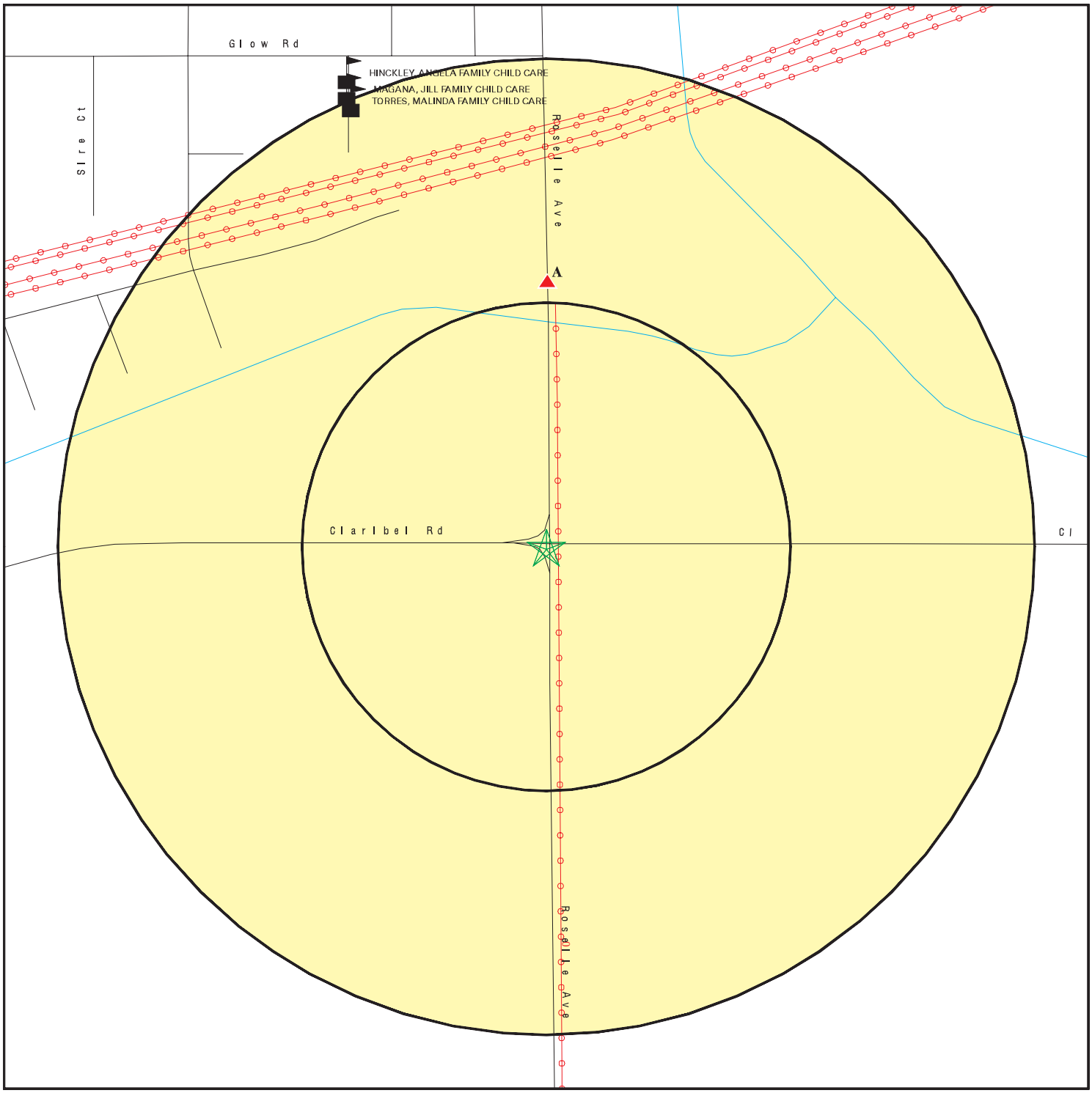


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: CLARIBEL AND ROSELLE	CLIENT: Crawford & Associates Inc.
ADDRESS: STANISLAUS COUNTY Modesto CA 95357	CONTACT: David P. Castro
LAT/LONG: 37.7109 / 120.9401	INQUIRY #: 3931795.2s DATE: May 02, 2014 4:58 pm

DETAIL MAP - 3931795.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	CLARIBEL AND ROSELLE	CLIENT:	Crawford & Associates Inc.
ADDRESS:	STANISLAUS COUNTY Modesto CA 95357	CONTACT:	David P. Castro
LAT/LONG:	37.7109 / 120.9401	INQUIRY #:	3931795.2s
		DATE:	May 02, 2014 5:01 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	2	NR	2
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	1	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	1	NR	NR	NR	1
HIST UST	0.250		0	1	NR	NR	NR	1
SWEEPS UST	0.250		0	1	NR	NR	NR	1
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PROC	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
North
1/8-1/4
0.136 mi.
719 ft.

JERRY COLE
5130 ROSELLE AVE
MODESTO, CA 95355

Site 1 of 2 in cluster A

Relative:
Higher

Actual:
131 ft.

HIST UST **U001607466**
N/A

HIST UST:

Region:	STATE
Facility ID:	00000015549
Facility Type:	Other
Other Type:	FARM. BUSS
Total Tanks:	0001
Contact Name:	Not reported
Telephone:	2098694424
Owner Name:	JERRY COLE
Owner Address:	5130 ROSELLE AVE
Owner City,St,Zip:	MODESTO, CA 95355
Tank Num:	001
Container Num:	1
Year Installed:	1980
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	12 gauge
Leak Detection:	Stock Inventor

A2
North
1/8-1/4
0.136 mi.
719 ft.

JERRY COLE
5130 ROSELLE AVE
MODESTO, CA 95355

Site 2 of 2 in cluster A

Relative:
Higher

Actual:
131 ft.

CA FID UST **S101629695**
SWEEPS UST **N/A**

CA FID UST:

Facility ID:	50002284
Regulated By:	UTNKI
Regulated ID:	00015549
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2098694424
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	MODESTO 95355
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	15549
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported

JERRY COLE (Continued) **S101629695**

Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	50-000-015549-000001
Tank Status:	Not reported
Capacity:	550
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	1

---

3 **MC KENNA RESIDENCE** **HIST CORTESE S103480266**
East **3213 CLARIBEL** **LUST N/A**
1/4-1/2 **MODESTO, CA 95357**
0.475 mi.
2510 ft.

Relative:
Higher

Actual:
132 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	50
Reg By:	LTNKA
Reg Id:	500427

LUST:

Region:	STATE
Global Id:	T0609900365
Latitude:	37.7109346
Longitude:	-120.9364322
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/30/1998
Lead Agency:	STANISLAUS COUNTY LOP
Case Worker:	ND
Local Agency:	STANISLAUS COUNTY LOP
RB Case Number:	500427
LOC Case Number:	232
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0609900365
Contact Type:	Regional Board Caseworker
Contact Name:	MICHAEL SMITH
Organization Name:	CENTRAL VALLEY RWQCB (REGION 5S)
Address:	11020 SUN CENTER DRIVE #200
City:	RANCHO CORDOVA
Email:	msmith@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0609900365
Contact Type:	Local Agency Caseworker
Contact Name:	NICOLE DAMIN
Organization Name:	STANISLAUS COUNTY LOP
Address:	3800 CORNUCOPIA WAY STE# C

MC KENNA RESIDENCE (Continued) **S103480266**

City: MODESTO
Email: ndamin@envres.org
Phone Number: Not reported

Status History:
Global Id: T0609900365
Status: Completed - Case Closed
Status Date: 10/30/1998

Global Id: T0609900365
Status: Open - Case Begin Date
Status Date: 06/05/1998

Regulatory Activities:
Global Id: T0609900365
Action Type: REMEDIATION
Date: 01/01/1950
Action: Not reported

Global Id: T0609900365
Action Type: ENFORCEMENT
Date: 06/29/1998
Action: Notice of Responsibility

Global Id: T0609900365
Action Type: ENFORCEMENT
Date: 09/15/1998
Action: Closure/No Further Action Letter

Global Id: T0609900365
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 5:
Region: 5
Status: Case Closed
Case Number: 500427
Case Type: Soil only
Substance: DIESEL
Staff Initials: MTS
Lead Agency: Local
Program: LUST
MTBE Code: N/A

---

4 **ELMWOOD ESTATES** **SLIC** **S105556934**
North **5536 ROSELLE AVENUE** **ENVIROSTOR** **N/A**
1/2-1 **RIVERBANK, CA 95367**
0.603 mi.
3183 ft.

Relative:
Higher

Actual:
132 ft.

SLIC:
Region: STATE
Facility Status: **Open - Inactive**
Status Date: 02/02/1999

ELMWOOD ESTATES (Continued) **S105556934**

Global Id:	SLT5S1333173
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	Not reported
Latitude:	37.731855
Longitude:	-120.93936
Case Type:	Cleanup Program Site
Case Worker:	ZZZ
Local Agency:	Not reported
RB Case Number:	SLT5S133
File Location:	Not reported
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 5:

Region:	5
Facility Status:	Preliminary Assessment
Unit:	Facility is a Spill or site
Pollutant:	TPH / waste oil
Lead Agency:	Not reported
Date Filed:	/ /
Report Date:	05/01/91
Date Added:	Not reported
Date Closed:	Not reported

ENVIROSTOR:

Facility ID:	50550002
Status:	Refer: Other Agency
Status Date:	11/17/1993
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	1
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Sacramento
Assembly:	12
Senate:	5
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.72055
Longitude:	-120.9447
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	A & A AUTO DISMANTLERS
Alias Type:	Alternate Name

ELMWOOD ESTATES (Continued) **S105556934**

Alias Name: BONANZA FOREIGN AUTO DISMANTLERS
Alias Type: Alternate Name
Alias Name: RIVERBANK AUTO DISMANTLERS
Alias Type: Alternate Name
Alias Name: SLT5S1333173
Alias Type: GeoTracker Global ID
Alias Name: 50550002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 08/03/1992
Comments: 18.2 acre parcel formerly occupied by three auto dismantlers. Site being developed as residential. Investigation and remediation under the oversight of Stanislaus County for Total Petroleum Hydrocarbon (TPH) and lead contamination from the previous operations on site. Underground storage tank (UST) area investigated. Monitoring wells being reinstalled due to site grading. Recommend site remain County lead.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

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5 **RIVERBANK DUMP SITE** **ENVIROSTOR** **S101482636**
NE **TERMINAL AVE** **N/A**
1/2-1 **RIVERBANK, CA 95367**
0.754 mi.
3981 ft.

Relative:
Higher

Actual:
140 ft.

ENVIROSTOR:
Facility ID: 50490001
Status: Inactive - Action Required
Status Date: 06/09/2008
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: 1
NPL: NO
Regulatory Agencies: HWMP
Lead Agency: HWMP
Program Manager: Not reported
Supervisor: Steven Becker
Division Branch: Cleanup San Joaquin
Assembly: 12
Senate: 5
Special Program: EPA - PASI
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported

RIVERBANK DUMP SITE (Continued) **S101482636**

Latitude: 37.7191
Longitude: -120.931
APN: NONE SPECIFIED
Past Use: LDF
Potential COC: "10199 30468"
Confirmed COC: "3 046 810 199"
Potential Description: SOIL
Alias Name: APN 075-20-07, 075-20-08
Alias Type: Alternate Name
Alias Name: TERMINAL AND VAN DUSEN AVENUE
Alias Type: Alternate Name
Alias Name: 50490001
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 01/07/1994
Comments: The county is the lead agency at the site. A site assessment workplan has been reviewed and approved by the county Jan.5, 1994. Rudy Bonzi Incorporated is the owner of the site. Bonzi's consultants are going to install and sample four soil borings at the site and construct three monitoring wells in three of the borings if ground water is encountered. The site is a former disposal site for waste oils and liquid and sludge wastes generated at the Riverbank Army Ammunition Plant's centrifuge tower and acid neutraliz- ation and thickening plant and waste water treatment facility.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/12/1987
Comments: SITE SCREENING DONE. NEED MORE INFORMATION.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 06/09/2008
Comments: DTSC completed a site screen for the USEPA under the Preliminary Assessment/Site Inspection Grant. The site screen shows that additional work is required at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 08/20/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 01/25/1982
Comments: FACILITY IDENTIFIED FROM HAZARDOUS WASTE MANAGMENT BRANCH (HWMB)/ ENFORCEMENT FILES. JIM SIMPSON CALLED FOR HELP TO ASSESS WASTE OIL SITE.

Future Area Name: Not reported

RIVERBANK DUMP SITE (Continued) **S101482636**

Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 3 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MODESTO	1016427003	MODESTO IRRIGATION DISTRICT / CLAR	1750 CLARIBEL		FINDS
MODESTO	1016425629	MODESTO IRRIGATION DISTRICT / ROSE	2807 ROSELLE		FINDS
MODESTO	S105982733	JAMES C ENOCH HIGH SCHOOL (PROPOSE	SYLVAN AVE AND ROSELLE AVE		SLIC

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/28/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/31/2013
Date Data Arrived at EDR: 07/08/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 151

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/11/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/28/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/17/2013
Date Data Arrived at EDR: 01/14/2014
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/17/2013
Date Data Arrived at EDR: 01/14/2014
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/26/2014
Date Data Arrived at EDR: 02/28/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 55

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 03/12/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 03/12/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/14/2014
Date Data Arrived at EDR: 02/18/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 28

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/18/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/19/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 05/01/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/19/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 40

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/01/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/20/2014
Date Data Arrived at EDR: 02/21/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 62

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 02/21/2014
Next Scheduled EDR Contact: 05/12/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/21/2013
Date Data Arrived at EDR: 11/26/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/30/2014
Next Scheduled EDR Contact: 05/12/2014
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/13/2014
Date Data Arrived at EDR: 02/14/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 10

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/19/2014
Date Made Active in Reports: 04/25/2014
Number of Days to Update: 37

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/19/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 04/07/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/30/2014
Next Scheduled EDR Contact: 05/12/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/21/2013
Date Data Arrived at EDR: 11/26/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 02/13/2014
Date Data Arrived at EDR: 02/14/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 10

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/29/2014
Date Data Arrived at EDR: 01/29/2014
Date Made Active in Reports: 03/12/2014
Number of Days to Update: 42

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/27/2014
Next Scheduled EDR Contact: 05/12/2014
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 02/20/2014
Date Data Arrived at EDR: 02/21/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 62

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 92

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 07/30/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 129

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/15/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/17/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/01/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 03/12/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/20/2014
Date Data Arrived at EDR: 03/20/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 20
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/20/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 02/20/2014
Date Made Active in Reports: 03/27/2014
Number of Days to Update: 35
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/04/2013
Date Data Arrived at EDR: 12/10/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 65
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/04/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 03/12/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/28/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 20
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/10/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/04/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 01/17/2014
Date Data Arrived at EDR: 01/21/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/10/2014
Date Data Arrived at EDR: 03/11/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 30

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/11/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 01/03/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 52

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/01/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/14/2013
Date Data Arrived at EDR: 10/30/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 34

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/29/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/19/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 36

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/01/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/19/2014
Date Made Active in Reports: 04/25/2014
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 05/01/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/06/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 55

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/27/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/11/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/25/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/05/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/26/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/28/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/29/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/09/2014
Date Data Arrived at EDR: 01/10/2014
Date Made Active in Reports: 03/12/2014
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 03/12/2014
Number of Days to Update: 13

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/14/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/01/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/28/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/17/2014
Date Data Arrived at EDR: 02/18/2014
Date Made Active in Reports: 03/27/2014
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/18/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 01/15/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/18/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 04/02/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 27
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 04/01/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 04/07/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 35
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 02/25/2014
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 19

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 41

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/25/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 04/21/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013
Date Data Arrived at EDR: 02/14/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: N/A

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Annually

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/21/2014
Date Data Arrived at EDR: 03/12/2014
Date Made Active in Reports: 04/14/2014
Number of Days to Update: 33

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/14/2014
Date Data Arrived at EDR: 04/15/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/15/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/24/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/25/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Quarterly

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 02/25/2014
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/14/2014
Date Data Arrived at EDR: 02/18/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 28

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/28/2014
Date Data Arrived at EDR: 01/30/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 12

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/30/2014
Next Scheduled EDR Contact: 05/12/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/22/2014
Date Data Arrived at EDR: 01/23/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 19

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/22/2014
Date Data Arrived at EDR: 01/23/2014
Date Made Active in Reports: 02/12/2014
Number of Days to Update: 20

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
Cupa Facility List

Date of Government Version: 03/24/2014
Date Data Arrived at EDR: 03/24/2014
Date Made Active in Reports: 04/30/2014
Number of Days to Update: 37

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/24/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 20

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/10/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 04/03/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 26

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 12/05/2013
Date Data Arrived at EDR: 12/05/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 53

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 03/13/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/24/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 21

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/05/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/25/2013
Number of Days to Update: 46

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/20/2014
Date Data Arrived at EDR: 02/21/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 27

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/04/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 04/15/2014
Date Made Active in Reports: 05/01/2014
Number of Days to Update: 16

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/14/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/20/2014
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 38

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/27/2014
Date Data Arrived at EDR: 01/28/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 14

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/25/2014
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 21

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/25/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/21/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/24/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 12/06/2013
Date Data Arrived at EDR: 01/28/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 48
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/02/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/20/2014
Date Data Arrived at EDR: 01/21/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 21
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/17/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/25/2014
Number of Days to Update: 28
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/17/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 02/10/2014
Date Data Arrived at EDR: 02/12/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 33
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/21/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 02/25/2014
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 04/14/2014
Number of Days to Update: 46
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/13/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 32
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/14/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 03/26/2014
Date Data Arrived at EDR: 03/27/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 33

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 01/03/2014
Date Data Arrived at EDR: 01/09/2014
Date Made Active in Reports: 02/12/2014
Number of Days to Update: 34

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 04/07/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 03/10/2014
Date Data Arrived at EDR: 03/11/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 30

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/04/2014
Date Made Active in Reports: 04/01/2014
Number of Days to Update: 28

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/18/2014
Date Data Arrived at EDR: 03/20/2014
Date Made Active in Reports: 04/25/2014
Number of Days to Update: 36

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/06/2014
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 27
Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 02/14/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2014
Date Data Arrived at EDR: 02/12/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 33
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/03/2014
Date Data Arrived at EDR: 02/13/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 33
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2014
Date Data Arrived at EDR: 02/12/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 34
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/10/2014
Date Data Arrived at EDR: 03/11/2014
Date Made Active in Reports: 04/10/2014
Number of Days to Update: 30
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/15/2014
Date Data Arrived at EDR: 04/17/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 7
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/02/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/14/2014
Date Data Arrived at EDR: 01/15/2014
Date Made Active in Reports: 02/12/2014
Number of Days to Update: 28
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/24/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/06/2014
Date Data Arrived at EDR: 04/08/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 21
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/06/2014
Date Data Arrived at EDR: 04/08/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 21
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/18/2014
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 04/25/2014
Number of Days to Update: 35

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/19/2013
Date Made Active in Reports: 12/31/2013
Number of Days to Update: 42

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/10/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 04/10/2014
Date Data Arrived at EDR: 04/11/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 18
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 04/07/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/24/2014
Date Data Arrived at EDR: 02/26/2014
Date Made Active in Reports: 03/26/2014
Number of Days to Update: 28
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/03/2014
Date Data Arrived at EDR: 04/04/2014
Date Made Active in Reports: 05/01/2014
Number of Days to Update: 27
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 03/04/2014
Date Data Arrived at EDR: 03/06/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 14

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/03/2014
Next Scheduled EDR Contact: 06/16/2014
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/07/2014
Date Data Arrived at EDR: 02/11/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/10/2014
Next Scheduled EDR Contact: 05/26/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 02/24/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 23

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/17/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 04/25/2014
Date Data Arrived at EDR: 04/01/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/16/2013
Date Data Arrived at EDR: 12/19/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 20

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 01/02/2014
Date Made Active in Reports: 02/11/2014
Number of Days to Update: 40

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 04/03/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 25

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/31/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/24/2014
Date Data Arrived at EDR: 03/24/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/24/2014
Next Scheduled EDR Contact: 06/23/2014
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/27/2014
Date Data Arrived at EDR: 01/28/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 48

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 01/28/2014
Date Data Arrived at EDR: 02/25/2014
Date Made Active in Reports: 03/20/2014
Number of Days to Update: 23

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/18/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/04/2014
Next Scheduled EDR Contact: 07/21/2014
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/17/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/06/2014
Date Data Arrived at EDR: 03/24/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 35

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/06/2014
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 38

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/18/2013
Date Data Arrived at EDR: 12/24/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 15

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/24/2014
Next Scheduled EDR Contact: 07/07/2014
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/11/2014
Date Data Arrived at EDR: 02/13/2014
Date Made Active in Reports: 03/17/2014
Number of Days to Update: 32

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 12/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/21/2014
Next Scheduled EDR Contact: 06/02/2014
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/18/2014
Next Scheduled EDR Contact: 07/28/2014
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/28/2014
Date Data Arrived at EDR: 03/12/2014
Date Made Active in Reports: 04/29/2014
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 03/12/2014
Next Scheduled EDR Contact: 05/19/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/24/2013
Date Made Active in Reports: 08/19/2013
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/21/2014
Next Scheduled EDR Contact: 08/04/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/05/2013
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/24/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 09/27/2013
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/17/2014
Next Scheduled EDR Contact: 06/30/2014
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CLARIBEL AND ROSELLE
STANISLAUS COUNTY
MODESTO, CA 95357

TARGET PROPERTY COORDINATES

Latitude (North):	37.7109 - 37° 42' 39.24''
Longitude (West):	120.9401 - 120° 56' 24.36''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	681575.8
UTM Y (Meters):	4175531.5
Elevation:	128 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37120-F8 RIVERBANK, CA
Most Recent Revision:	1987

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

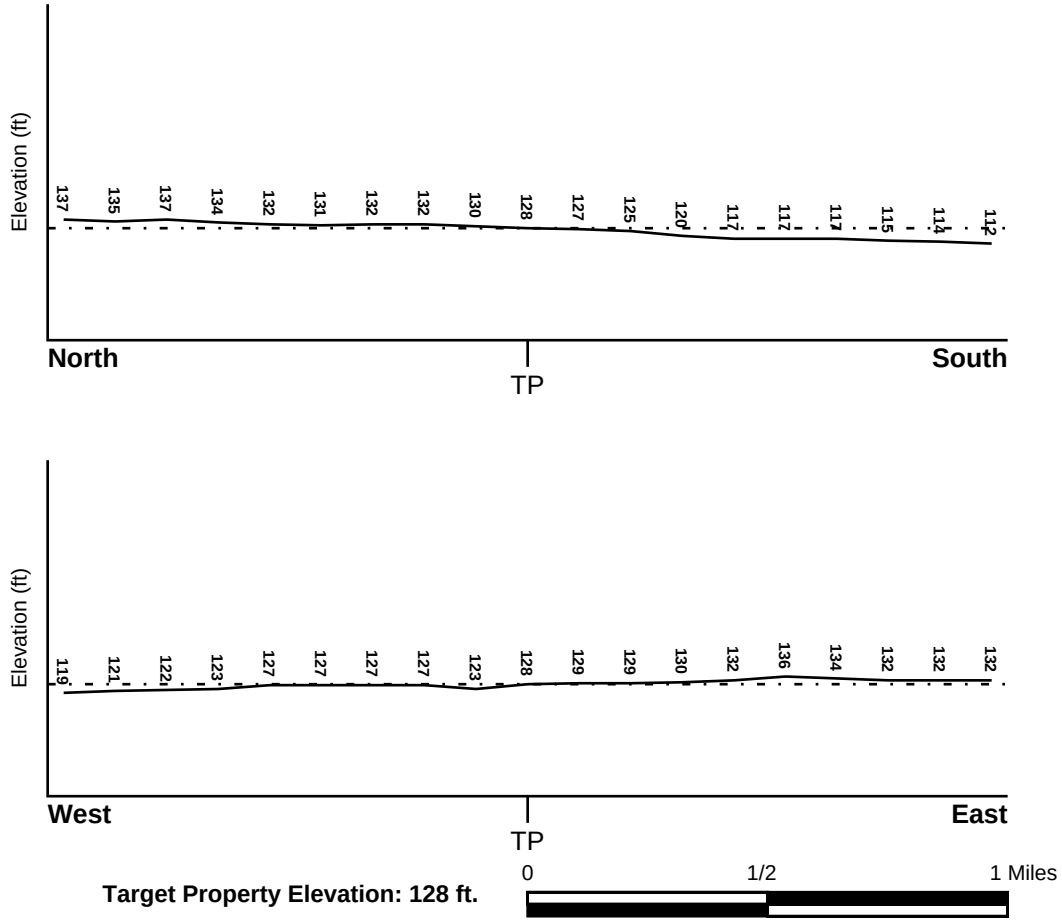
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
STANISLAUS, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06099C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
RIVERBANK	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Location Relative to TP:	1 - 2 Miles NE
Site Name:	Riverbank Army Ammunition Plant
Site EPA ID Number:	CA7210020759
Surficial Aquifer Flow Dir.:	WNW IN THE CENTER OF THE SITE WITH A STRONG SWING TO THE NNW ON THE NORTHERN SIDE OF THE SITE.
Measured Depth to Water:	approximately 80 feet.
Hydraulic Connection:	The hydraulic separation of aquifers underlying the site is variable, but does occur between the underlying aquifers.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information based on site-specific subsurface investigations is documented in the CERCLIS investigation report(s)

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

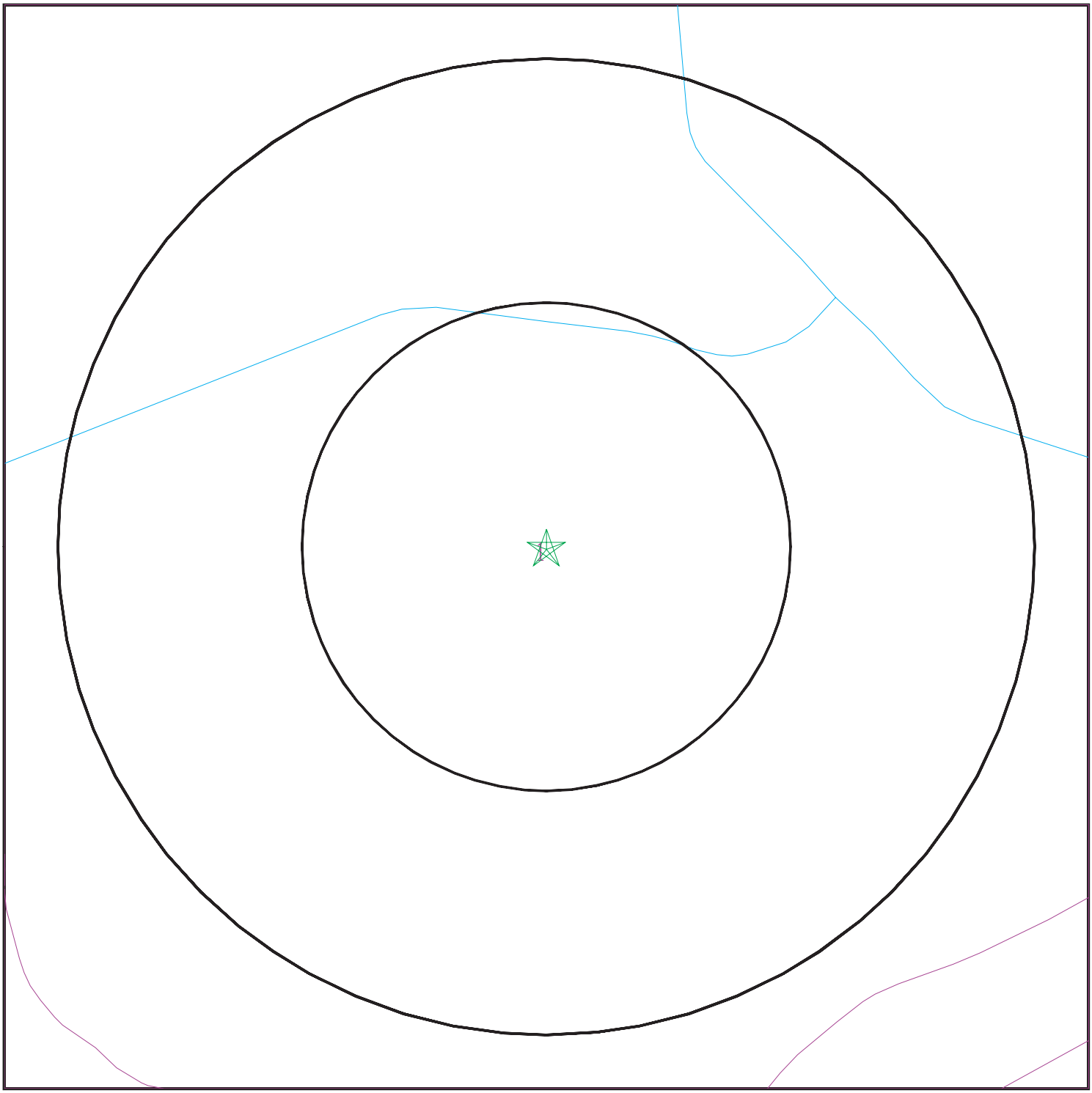
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3931795.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	CLARIBEL AND ROSELLE	CLIENT:	Crawford & Associates Inc.
ADDRESS:	STANISLAUS COUNTY Modesto CA 95357	CONTACT:	David P. Castro
		INQUIRY #:	3931795.2s
LAT/LONG:	37.7109 / 120.9401	DATE:	May 02, 2014 5:01 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: San Joaquin

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	12 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	12 inches	24 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.42 Min: 0.01	Max: 7.3 Min: 5.6
3	24 inches	48 inches	indurated	Not reported	Not reported	Max: 0.01 Min: 0	Max: Min:
4	48 inches	59 inches	stratified sandy loam to sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000185105	1/8 - 1/4 Mile NE
B6	USGS40000185014	1/2 - 1 Mile SSW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

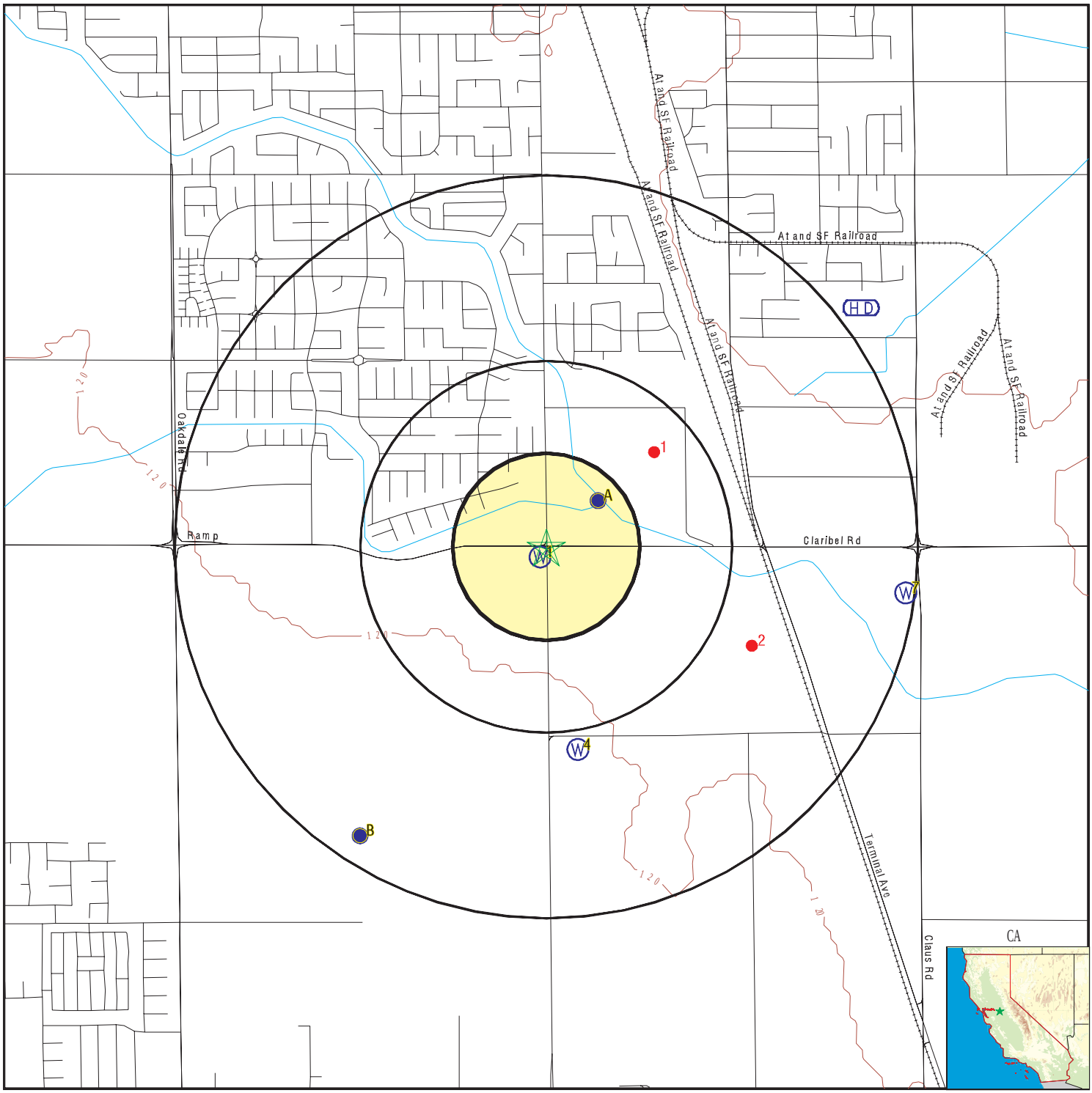
MAP ID	WELL ID	LOCATION FROM TP
1	CADW50000030206	0 - 1/8 Mile SSW
A3	CADW50000030236	1/8 - 1/4 Mile NE
4	20941	1/2 - 1 Mile South
B5	CADW50000030144	1/2 - 1 Mile SSW
7	3663	1/2 - 1 Mile East

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG9A000207071	1/4 - 1/2 Mile NE
2	CAOG9A000207058	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 3931795.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	CLARIBEL AND ROSELLE	CLIENT:	Crawford & Associates Inc.
ADDRESS:	STANISLAUS COUNTY Modesto CA 95357	CONTACT:	David P. Castro
		INQUIRY #:	3931795.2s
LAT/LONG:	37.7109 / 120.9401	DATE:	May 02, 2014 5:01 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
SSW
0 - 1/8 Mile
Higher | **CA WELLS** | **CADW50000030206**

Latitude :	37.7105		
Longitude :	120.9404		
Site code:	377105N1209404W001	Casgem sta:	03S09E02A001M
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	50		
Basin cd:	5-22.02	Basin desc:	Modesto
Org unit n:	South Central Region Office	Site id:	CADW50000030206

A2
NE
1/8 - 1/4 Mile
Higher | **FED USGS** | **USGS40000185105**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374246120561201		
Monloc name:	002S009E36N001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18040005	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.7127068
Longitude:	-120.9377114	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	130.00
Vert measure units:	feet	Vertacc measure val:	2.5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Alluvium of the Sierra Nevada		
Aquifer type:	Not Reported		
Construction date:	19500201	Welldepth:	411
Welldepth units:	ft	Wellholedepth:	604
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

A3
NE
1/8 - 1/4 Mile
Higher | **CA WELLS** | **CADW50000030236**

Latitude :	37.7127		
Longitude :	120.9374		
Site code:	377127N1209374W001	Casgem sta:	02S09E36N001M
Local well:	211	Casgem s 1:	Unknown
County id:	50		
Basin cd:	5-22.02	Basin desc:	Modesto
Org unit n:	South Central Region Office	Site id:	CADW50000030236

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

4
South
1/2 - 1 Mile
Lower

CA WELLS **20941**

Water System Information:

Prime Station Code:	5010010-080	User ID:	PTA
FRDS Number:	5010010080	County:	Stanislaus
District Number:	10	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	374211.0 1205615.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 048 - TREATED		
System Number:	5010010		
System Name:	Modesto, City of		
Organization That Operates System:			
	PO BOX 642		
	MODESTO, CA 95353		
Pop Served:	180320	Connections:	52219
Area Served:	MODESTO		

B5
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW50000030144**

Latitude :	37.6996		
Longitude :	120.9491		
Site code:	376996N1209491W001	Casgem sta:	03S09E02P001M
Local well:	080	Casgem s 1:	Unknown
County id:	50		
Basin cd:	5-22.02	Basin desc:	Modesto
Org unit n:	South Central Region Office	Site id:	CADW50000030144

B6
SSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000185014**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-374159120565401		
Monloc name:	003S009E02P001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18040005	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.6996515
Longitude:	-120.949378	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	107.00
Vert measure units:	feet	Vertacc measure val:	2.5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Alluvium of the Sierra Nevada		

Aquifer type:	Not Reported		
Construction date:	19380201	Welldepth:	141
Welldepth units:	ft	Wellholedepth:	155
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1970-10-01	22.00	

7
East **CA WELLS** **3663**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	03S/09E-01A02 M	User ID:	50C
FRDS Number:	5000284001	County:	Stanislaus
District Number:	80	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374233.0 1205517.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	5000284		
System Name:	RAINBOW FIELDS		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	11-MAY-11	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-MAY-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-MAY-13	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-AUG-13	Findings:	29.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-AUG-13	Findings:	6644. UG/L
Chemical:	NITRATE + NITRITE (AS N)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
NE
1/4 - 1/2 Mile

OIL_GAS **CAOG9A000207071**

Districtnu:	5	Apinumber:	09900001
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Atlantic Richfield Company		
Countyname:	Stanislaus	Fieldname:	Any Field
Areaname:	Any Area		
Section:	36		
Township:	02S	Range:	09E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Fr SW cor 1195 N 1808 E		
Glat:	37.714594		
Glong:	-120.934803		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Graham	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	PDH	Site id:	CAOG9A000207071

2
ESE
1/2 - 1 Mile

OIL_GAS **CAOG9A000207058**

Districtnu:	5	Apinumber:	09920041
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Granada Energy Corp.		
Countyname:	Stanislaus	Fieldname:	Any Field
Areaname:	Any Area		
Section:	1		
Township:	03S	Range:	09E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Fr W/4 cor 1470 Nly 3015 Ely		
Glat:	37.707037		
Glong:	-120.930006		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Frobose	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	PDH	Site id:	CAOG9A000207058

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95357	1	0

Federal EPA Radon Zone for STANISLAUS County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for STANISLAUS COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.725 pCi/L	92%	8%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.250 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

APPENDIX D

EDR City Directory Report

CLARIBEL AND ROSELLE
STANISLAUS COUNTY
Modesto, CA 95357

Inquiry Number: 3931795.5
May 06, 2014

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1987	☐	☐	Polk's City Directory
1982	☐	☐	Polk's City Directory
1976	☐	☐	Polk's City Directory
1971	☐	☐	Polk's City Directory
1965	☐	☐	Polk's City Directory
1960	☐	☐	Polk's City Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

STANISLAUS COUNTY
Modesto, CA 95357

Year	*CD Image*	*Source*	
CLARIBEL RD			
2013	pg A1	Cole Information Services	
2008	pg A4	Cole Information Services	
2003	pg A8	Cole Information Services	
1999	pg A12	Cole Information Services	
1987	-	Polk's City Directory	Street not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1976	-	Polk's City Directory	Street not listed in Source
1971	-	Polk's City Directory	Street not listed in Source
1965	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source
ROSELLE AVE			
2013	pg A2	Cole Information Services	
2008	pg A6	Cole Information Services	
2003	pg A10	Cole Information Services	
1999	pg A13	Cole Information Services	
1987	-	Polk's City Directory	Street not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1976	-	Polk's City Directory	Street not listed in Source
1971	-	Polk's City Directory	Street not listed in Source
1965	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 2013

254	RALPH BAMBACIGNO
319	WILLIAM MURRAY
600	CAROLS CREATIVE CUTS
	MICHAEL BAMBACIGNO
630	ROSE BAMBACIGNO
706	NORMAN OHLSON
707	KB FARM FAB & WELDING
830	OCCUPANT UNKNOWN
1743	JOHN GONZALEZ
2030	EDELMIRA GARCIA
2518	KELLY DURRER
2554	OCCUPANT UNKNOWN
2600	LANCE ELLIS
2624	SAFWAT ABSOOD
2666	DANNY SMITH
2736	RA ARNOLD
2754	NANCY MORRISON
3212	RICHARD MORRISON
3536	FILIMON MAESTAS
3601	RACHEL DOMINGUEZ
3608	JUSTIN BAKER
3611	AAAARMOR LOCKSMITH
	OCCUPANT UNKNOWN
3635	MARK NAZMI
3800	RAINBOW FIELDS
3825	FRANK FENN
4200	GEORGE ISMAIL
4230	OCCUPANT UNKNOWN
4312	VICENTE GOMEZ
4336	DAVID KLINE
4554	GARY PARK
	STANISLAUS COUNTY SCHUTZHUND CLUB
4601	TINA DREW
4737	OCCUPANT UNKNOWN
4849	LINDA BRYSON
4851	ERNESTO HERNANDEZ
4936	ROBERTA MEJIES
4951	GREGORY GARUK
5001	RAFAEL RIOS
5005	OCCUPANT UNKNOWN
5115	ROLAND ENZ
5125	BEN MUNIAIN
5212	ROBERT FROBOSE
5225	OCCUPANT UNKNOWN
5231	PEGGY HOLT
5401	APRIL GUTTIERREZ
5405	FRANK GONSALVES
5407	DAVID RAMSEY
5413	JIMMY SANCHEZ
5421	JUAN DELATORRE

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2013

2624	PATRICIA HESS
2700	JULIA ARZATE
2724	PEDRO VILLA
2906	DARRELL WRIGHT
3220	RICHARD FRITZ
3324	WILLIS SANDERS
3342	BILL OSBORN
3448	WENFU SHIEH
3460	LINDA SMITH
3466	EDWARD FERNANDES
3468	DOROTHY FERNANDES
3520	CARDOZA TIFFANY DVM
	MAGNUSSEN KIPP L DVM
	OLIVAS SUSAN DVM
	ROJAS RIVAS RICHARDO DVM
	ROUSSELL ANITA DVM
	SYLVAN VETERINARY HOSPITAL INC
	WELLS LEAH DVM
3521	LEONARD RORABAUGH
3560	EDWARD HARRIS
3606	PAUL GOTSHALL
3618	AMERICAS CHIMNEY SWEEP
	EVERETT JACKSON
3625	OCCUPANT UNKNOWN
3630	STEVE NORBECK
3700	LEMOYNE GABBARD
3706	MIKE SILVA
3710	HECTOR HERRERA
3725	JESSICA SMITH
3737	OCCUPANT UNKNOWN
3739	EDITH NOLEN
3831	ALICIA BOMAN
3900	NAI CHAO
3941	TROMBETTA ELECTRICAL DIST INC
3943	THOMAS TROMBETTA
4012	OCCUPANT UNKNOWN
4024	ELENA ROCHA
4106	FRED KEATHLEY
4123	FELIPE GONZALEZ
4154	ROBERT HOFFMAN
4312	BEL PASSI BASEBALL
4404	RENEE MATOSICH
4454	DEREK HUDSON
4461	ROLAND GONZALES
4513	GERALD BRADFORD
4543	PAUL EMBREE
4701	KORY GILBERT
4789	LOUIS LUIS
4819	PAULINA LUIZ
4823	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2013 (Cont'd)

4825	LIVING FAITH COMMUNITY CHURCH
4919	OCCUPANT UNKNOWN
5024	OCCUPANT UNKNOWN
5030	OCCUPANT UNKNOWN
5054	TAMZEN MILLEN
5118	SCOTT PARKER
5130	ROGER VANHORN
5230	OCCUPANT UNKNOWN
5306	KATHY WEAVER
5330	DARRELL BLAGG
5336	OCCUPANT UNKNOWN
5355	OCCUPANT UNKNOWN
5424	RICK WETHERINGTON
5442	LESTER WILLIAMS

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 2008

254	CHRIS BAMBACIGNO
319	OCCUPANT UNKNOWN
	SCOTCH ACRES WALKERS
343	OCCUPANT UNKNOWN
600	CAROLS CREATIVE CUTS
	MICHAEL BAMBACIGNO
630	ROSE BAMBACIGNO
706	NORMAN OHLSON
	ORION ENTERPRISES
707	OCCUPANT UNKNOWN
830	FREDERICK WOODS
1466	TREVOR THOMPSON
1743	ERIC SEELY
2030	ANTONIO RODIN
2518	KELLY DURRER
2554	STEVE MULLINS
2561	OCCUPANT UNKNOWN
2600	LANCE ELLIS
2624	SAFWAT ABSOOD
2666	WILLIAM MOORE
2736	OCCUPANT UNKNOWN
2819	ROBERT ANDERSON
3001	OCCUPANT UNKNOWN
3212	OCCUPANT UNKNOWN
3536	FILIMON MAESTAS
3608	CARL BAKER
3611	AAA FULL ARMOR LOCKSMITH CORP
	FULL ARMOR LOCKSMITH & DOORS INC
	OCTAVIO MENDOZA
3635	MARK NAZMI
3800	RAINBOW FIELDS
3825	SHEERY FENN
4200	GEORGE ISMAIL
	ISMAILS DISTRIBUTING
4230	OCCUPANT UNKNOWN
4312	JOHN KOEPKE
4336	DAVID KLINE
4554	BIG BASIN DOG TRAINING
	MARTEY CORNOG
	STANISLAUS COUNTY SCHUTZHUND CLUB
4601	TINA DREW
4737	JOSEPH BETTENCOURT
4849	AURELIO FERNANDEZ
4851	JOSE RODRIGUEZ
4936	N PIPER
4951	RAYMOND SWICKARD
5001	MAURICIO RIOS
5005	OCCUPANT UNKNOWN
5115	ROLAND ENZ
5125	BEN MUNIAIN

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 2008 (Cont'd)

5212	ROBERT FROBOSE
	ROBERT PROBOSE
5225	OCCUPANT UNKNOWN
5231	JESS HOLT CONTRACTOR
	JESS HOLT QUARTER HORSES
	PEGGY HOLT
5405	FRANK GONSALVES
5407	DAVID RAMSEY
5413	JIMMY SANCHEZ
5421	JUAN DELATORRE
5448	JAMES ANTHONY

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2008

2624	ARTISAN PAINTING & WALLPAPERING
	ROBERT HESS
2700	EDUARDO GASCA
2724	IGNACIO HERNANDEZ
2906	DARRELL WRIGHT
3000	OCCUPANT UNKNOWN
3012	OCCUPANT UNKNOWN
3036	OCCUPANT UNKNOWN
3200	OCCUPANT UNKNOWN
3220	RICHARD FRITZ
3224	OCCUPANT UNKNOWN
3248	OCCUPANT UNKNOWN
3324	PAUL KESTERSON
3342	BILL OSBORN
3448	OCCUPANT UNKNOWN
3466	EDWARD FERNANDES
3500	MAGNUSSEN KIPP L DVM
	SYLVAN VETERINARY HOSPITAL
3521	LEONARD RORABAUGH
3560	JOSE MUNOZ
3606	GAYLE GOTSHALL
3618	AMERICAS CHIMNEY SWEEP
	EVERETT JACKSON
	SKYLINES ROOFING
3625	ALBERT GONZALES
3630	STEVE NORBECK
3700	LEMOYNE GABBARD
3706	GARY COOK
3710	HECTOR HERRERA
3725	RODD BOOTH
3739	ELVIN NOLEN
3831	ALICIA BOMAN
3900	SHAW CHAO
3941	ELECTRIC WAREHOUSE
3943	THOMAS TROMBETTA
4012	RICHARD CERCLE
4024	BRUCE GOWANS
4106	FRED KEATHLEY
4123	ANABEL ZAMUDIO
	BARBARA CARREIRO
	EINAR CASAS
	NATALIE MATOS
	TOM TROMBETTA
4154	ELECTRONIC GLASS & SUPPLY CO
4404	OCCUPANT UNKNOWN
4461	ROLAND GONZALES
4513	GERALD BRADFORD
4543	CASA DE EMBREE LLAMA
	PAUL EMBREE
4701	GINNYS INLAND BAY GIFTS

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2008 (Cont'd)

4701	OCCUPANT UNKNOWN
4789	LOUIS LUIS
4819	PAULINA LUIZ
4823	TERESA WEGNER
4825	LIVING FAITH COMMUNITY CHURCH
	OCCUPANT UNKNOWN
4919	EDGAR GUDINO-VARGUS
5024	OCCUPANT UNKNOWN
5054	GEORGE SMITH
	MILLEN STEPHEN VINCENT ELEC
5118	SCOTT PARKER
5130	ROGER VANHORN
5230	CLYDE FRINGS
	CLYDE FRINGS APIARIES
5330	DARRELL BLAGG
5336	GEORGE ZACHARIAS
5355	OCCUPANT UNKNOWN
5401	ZENAIDA ALBOR
5424	RICK WETHERINGTON
5425	JAMES BROWN
5442	HARLAN VANDENBOSCH
5531	LARRY ARNERICH

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 2003

254	MARY BAMBACIGNO
319	JANET MUSSMAN
	SCOTCH ACRES WALKERS
343	WAYNE FREDERICK
600	BRANDING IRON CATERING
	CAROLS CREATIVE CUTS
	MICHAEL BAMBACIGNO
630	JAMES BAMBACIGNO
706	OCCUPANT UNKNOWN
707	KB FARM FAB & WELDING
	OCCUPANT UNKNOWN
830	ELIZABETH WOODS
1743	LORRAINE DICKENS
2030	EDELMIRA GARCIA
2554	STEVE MULLINS
2561	JUDY SUZUKI
2624	SAFWAT ABSOOD
2666	OCCUPANT UNKNOWN
2736	RICHARD ARNOLD
2754	OCCUPANT UNKNOWN
2819	ROBERT ANDERSON
3001	OCCUPANT UNKNOWN
3212	FRANK DUTRA
3536	MARK NAZMI
3601	ROBERT DOMINGUEZ
3608	CARL BAKER
3611	DENNEY RUSSELL
3800	RAINBOW FIELDS
3825	DONALD DRESSLER
4200	GEORGE ISMAIL
4230	LARRY BENEDA
4312	CECIL WATTS
4336	DAVID KLINE
4554	BIG BASIN DOG TRAINING
	GARY PARK
4601	PATRICK DAVIS
4737	JOSEPH BETTENCOURT
4849	JEFFREY KILGORE
4851	CHRIS SILVA
4951	RAYMOND SWICKARD
5001	LESLIE LARSEN
5005	OCCUPANT UNKNOWN
5125	BEN MUNIAIN
5212	ROBERT FROBOSE
	ROBERT FROBOSE
5225	OCCUPANT UNKNOWN
5231	DRAPER LISENBY
	HOLT JESS QUARTER HORSES
5401	CURTIS GUTIERREZ
	JOHN MORENO

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 2003 (Cont'd)

5405	FRANK GONSALVES
5407	GAIL RAMSEY
	RAMSEY EXPRESS TRUCKING
5413	JIMMY SANCHEZ
5421	OCCUPANT UNKNOWN
5448	SHELLY SUMTER
5501	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2003

2606	DAVID PETTIT
2624	ROBERT HESS
2724	JAMES ZANDBERGEN
2802	ROBERT KUTZMAN
2806	BARNETTS HTNG & AIR CNDTNNG
	HAROLD BARNETT
	IRON BY DESIGN
	THE HOME THEATRE EXPERIENCE
2830	MARY BARNETT
2906	OCCUPANT UNKNOWN
3000	JOHN WEBER
3012	GEORGE KILIAN
3036	ALOYS FISCHER
3200	THOMAS LEASURE
3201	OCCUPANT UNKNOWN
3220	RICHARD FRITZ
3224	OCCUPANT UNKNOWN
3248	KAREN KARALES
	SANFORD FARMS
3324	NELLIE SANDERS
3342	BILL OSBORN
3349	OCCUPANT UNKNOWN
3460	MARK KEENEY
3466	EDWARD FERNANDES
3500	MEDEIROS VICTORIA DVM
	OCCUPANT UNKNOWN
3506	WALTER MEYER
3521	LEONARD RORABAUGH
3560	JOSE MUNOZ
3606	PAUL GOTSHALL
3618	EVERETT JACKSON
3625	ALBERT GONZALEZ
3630	STEVE NORBECK
3700	DESIGNS BY GG
	LEMOYNE GABBARD
3706	RUSSELLE PETERSEN
3710	ESTHER HERRERA
3725	VIOLA CARDON
3737	THOMAS INGALLS
3739	ELVIN NOLEN
3831	OCCUPANT UNKNOWN
3900	JUAN JARE
3941	TOM TROMBETTA
3943	OCCUPANT UNKNOWN
4012	RICHARD CERCLE
4024	MALINDA MORRIS
4106	ANN JONES
4123	APRIL ALEXANDER
	BEATRIZ MATOS
	MARIA ANDRADE

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 2003 (Cont'd)

4154 ELECTRONIC GLASS & SUPPLY CO
OCCUPANT UNKNOWN
4404 KENNETH PINTO
4454 DALLAS JOHNSTON
4461 RICHARD CISNEROS
4513 GERALD BRADFORD
4543 CASA DE EMBREE LLAMA
PAUL EMBREE
4701 OCCUPANT UNKNOWN
4789 LOUIS LUIS
4823 TERESA WEGNER
4825 OCCUPANT UNKNOWN
4919 MARJORIE WILLIAMS
5024 OCCUPANT UNKNOWN
5030 OCCUPANT UNKNOWN
5054 GEORGE SMITH
5118 OCCUPANT UNKNOWN
5130 ROGER VANHORN
5230 CLYDE FRINGS
FRINGS A CLYDE
5306 OCCUPANT UNKNOWN
5319 OCCUPANT UNKNOWN
5330 JEFF BLAGG
5336 GEORGE ZACHARIAS
ZACHARIAS GEORGE
5355 PATTY CLOWARD
5401 FRANK WEHNER
5424 RICK WETHERINGTON
5425 OCCUPANT UNKNOWN
5442 JOHN REGIER
5449 OCCUPANT UNKNOWN
5531 LARRY ARNERICH

Target Street	Cross Street	Source
✓	-	Cole Information Services

CLARIBEL RD 1999

319	SCOTCH ACRES WALKERS
	WILLIAM MUSSMAN
343	GOLDEN STATE PLASTERING INCORPORATED
	OCCUPANT UNKNOWN
600	BRANDING IRON CATERING
	CAROLS CREATIVE CUTS
706	NORMAN OHLSON
	OHLSON NORMAN A
	ORION ENTERPRISES
707	K B FARM FAB & WELDING
830	FREDERICK WOODS
1466	TREVOR THOMPSON
1743	ERIC SEELY
2518	KELLY DURRER
2600	LANCE ELLIS
2624	SAFWAT ABSOOD
2736	RA ARNOLD
2819	ROBERT ANDERSON
3212	FRANK DUTRA
3635	MARK NAZMI
3800	RAINBOW FIELDS
3825	OCCUPANT UNKNOWN
4200	GEORGE ISMAIL
4336	DAVID KLINE
4554	BIG BASIN HORSE BOARDING
4601	TINA DREW
4936	N PIPER
4951	OCCUPANT UNKNOWN
	RAYMOND SWICKARD
5001	MAURICIO RIOS
5005	OCCUPANT UNKNOWN
5115	ROLAND ENZ
5125	BEN MUNIAIN
5212	ROBERT PROBOSE
5231	OCCUPANT UNKNOWN
	PEGGY HOLT
5407	DAVID RAMSEY
5421	JUAN DELATORRE
5448	JAMES ANTHONY
5543	ADVANCED DRYWALL

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 1999

2606	BILLS CUSTOM MEAT SERVICE
2700	JULIA ARZATE
2800	OCCUPANT UNKNOWN
2806	BARNETT HEATING & AIR
	BARNETT INCORPORATED
	BARNETTS HEATING & AIR CONDITIONING
2906	DARRELL WRIGHT
	OCCUPANT UNKNOWN
3000	OCCUPANT UNKNOWN
3200	OCCUPANT UNKNOWN
3201	OCCUPANT UNKNOWN
3220	RICHARD FRITZ
3342	BILL OSBORN
3448	RENEE MCDANIEL
3466	EDWARD FERNANDES
3500	MOODY K M DR SYLVAN VETERINARY CLINIC INCORPORATED
	SYLVAN VETERINARY CLINIC INCORPORATED
3506	OCCUPANT UNKNOWN
3560	JOSE MUNOZ
3618	EVERETT JACKSON
	OCCUPANT UNKNOWN
3630	STEVE NORBECK
3706	DOUGLAS CLARK
3710	OCCUPANT UNKNOWN
3739	ELVIN NOLEN
3831	ALICIA BOMAN
	OCCUPANT UNKNOWN
3900	OCCUPANT UNKNOWN
	SHAW CHAO
3941	ELECTRIC WAREHOUSE THE
	TROMBETTA ELECTRICAL DISTRIBUTOR INCORPORATED
3943	OCCUPANT UNKNOWN
	THOMAS TROMBETTA
4012	OCCUPANT UNKNOWN
	RICHARD CERCLE
4106	FRED KEATHLEY
4123	ANABEL ZAMUDIO
	BEATRIZ MATOS
	TOM TROMBETTA
4154	ELECTRONIC GLASS & SUPPLY COMPANY
4454	DEREK HUDSON
4513	GERALD BRADFORD
4543	PAUL EMBREE
4789	LOUIS LUIS
4819	PAULINA LUIZ
4823	TERESA WEGNER
4919	EDGAR GUDINO-VARGUS
5054	GEORGE SMITH
5118	SCOTT PARKER
5230	CLYDE FRINGS

Target Street	Cross Street	Source
✓	-	Cole Information Services

ROSELLE AVE 1999 (Cont'd)

5306	KATHY WEAVER
5330	DARRELL BLAGG
5401	ZENAIDA ALBOR
5424	OCCUPANT UNKNOWN
	RICK WETHERINGTON
5442	SOMUTA NGUON
5531	LARRY ARNERICH

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

APPENDIX E

Prior Environmental Reports

Stanislaus County

Department of Environmental Resources

3800 Cornucopia Way, Suite C
Modesto, California 95358
FAX# (209) 525-6774
(209) 525-6700

September 15, 1998

Mr. Chuck McKenna
PO Box 577346
Modesto CA 95357

Certified Mail Z 348890 557

Dorothea Williams Trust
c/o Mr. Lewis Willson
347 Spring Beauty Court
Windsor CA 95492-0000

RE: Contamination Site PS000232- McKenna Residence, 3212 Claribel Road, Modesto, CA.

Dear Messrs McKenna and Willson:

The Department has received the M. J. Kloberdanz & Associates August 17, 1998 "Soil Boring Report" for the site. A technical memorandum reviewing the report is attached.

Diesel contamination associate with former underground storage tanks has been documented in soil at the farm site. On July 30, 1998, a soil boring was advanced to the groundwater table in the location of the former tanks. Soil and groundwater samples indicate that the release is limited to shallow soils and additional work is not warranted.

It is the opinion of the Department that any remaining contamination does not represent a threat to public health, safety or groundwater quality. Additional work will not be required. A site summary form (attached) has been prepared for submission to the California Regional Water Quality Control Board Central Valley Region for comment. The Regional Water Quality Control Board's Executive Officer has 30 days to comment on the proposed closure. The Department will proceed to close the site after the thirty day period has elapsed.

Please note our new address (above) and call me at (209) 525-6713 if you have any questions.

Sincerely,

Joseph D. Angulo
Hazardous Materials Specialist
Hazardous Materials Division

attachments

cc: Mr. Gordon L. Boggs - RWQCBCVR

Certified Mail Z 348 890 538

STANISLAUS COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES
HAZARDOUS MATERIALS DIVISION - SITE MITIGATION PROGRAM

Technical Memorandum

September 15, 1998

RE: Contamination Site PS000232- McKenna Residence, 3212 Claribel Road, Modesto, CA.

The Department has received the M. J. Kloberdanz & Associates August 17, 1998 "Soil Boring Report" for the site. Diesel contamination associated with former underground storage tanks (USTs) has been documented in soil at the above farm. The report documents the installation of a single soil boring on July 30, 1998.

The boring was advanced in the location of the former USTs. Soil samples were obtained at depths of 20, 35, and 50 feet below grade surface (bgs). The samples were analyzed for: Total Petroleum Hydrocarbons as Diesel (TPH-D); benzene, toluene, ethyl benzene, and xylene (BTEX). None of the samples contained contaminant concentrations above the laboratory reporting limits.

A groundwater sample was obtained from an abandoned well casing located approximately 10 feet from the former USTs. The sample was analyzed as above and did not contain contaminant concentrations above the laboratory reporting limits.

The contamination is limited to shallow soils (<20 feet bgs) and groundwater depth is at approximately 50 feet bgs. An impact to groundwater has not been recognized and the site warrants closure as low risk. Additional remedial action is not required.

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. Agency Information

Date: September 15, 1998

Agency name: Stanislaus Co. Dept. Environmental Resources	Address: 3800 Cornucopia Way, Suite C
City/State/Zip: Modesto, CA 95358	Phone: (209) 525-6700
Responsible staff person: Joseph D. Angulo	Title: Hazardous Materials Specialist

II. Case Information

Site facility name: McKenna Residence		
Site facility address:3212 Claribel Road, Modesto, CA 95357		
RB LUSTIS Case No:	Local Case No: PS00232	LOP Case No: PS000232
URF filling date: 6/5/98	SWEEPS No:	
Responsible Parties	**Address**	**Phone Numbers**
Mr. Chuck McKenna	PO Box 577346, Modesto, CA 95357	(209) 869-4704
Dorothea Williams Trust	347 Spring Beauty Court, Windsor CA	
c/o Mr. Lewis Willson	95492-0000	

Tank No	Size in Gal.	Contents	Closed in-Place/Removed?	Date
1	500	gasoline	removed	4/15/98
2	500	diesel	removed	4/15/98
3				

III. Release and site Characterization Information

Cause and type of release: Unknown / diesel		
Site characterization complete? Yes x No__	Date approved by oversight agency: 9/15/98	
Monitoring Wells Installed? Yes__ No x	Number:	Proper screened interval? Yes__ No_
Highest GW depth below ground surface: ~50 feet	Lowest depth: unknown	Flow direction: unknown
Most Sensitive Current Use: Potential drinking water source.		
Are drinking wells affected? Yes__ No x	Aquifer Name: N/A	
Is surface water affected? Yes__ No x	Nearest/affected SW name: N/A	
Off-site beneficial use impacts (addresses/locations): None		
Report(s) on file? Yes x No	Where is report(s) filed? SCDER and CVRWQCB	

Treatment and Disposal of Affected Material

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	2 - 500 gallon	disposal - Modesto Junk Co., 1403 Ninth St, Modesto, CA 95354	4/14/98
Piping	with USTs		
Free Product			
Soil			
Groundwater			
Barrels			

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. Release and Site Characterization Information (Continued)

Maximum Documented Contaminant Concentrations -- Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppm)		Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After		Before	After	Before	After
TPH (Gas)	ND(<1)				Xylene	0.0058		ND	
TPH (Diesel)	960		ND		Ethyl benzene	ND		ND	
Benzene	ND(<0.005)		ND		Oil & Grease				
Toluene	0.0056				Heavy Metals				
Other					Other				

Comments (Depth of Remediation, etc): Soil only low risk site. Lowest detectable contamination- 960 mg/kg TPH-D @ 13 feet bgs. Samples from 20, 35 and 50 feet bgs all ND. Groundwater in adjacent well - ND

IV. Closure

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes x No_

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes x No_

Does corrective action protect public health for current land use? Yes x No_

Site management requirements: none

Should corrective action be reviewed if land use changes? Yes_ No x

Monitoring wells Decommissioned: Yes_ No_ NA	Number Decommissioned:	Number Retained:

List enforcement actions taken: initial enforcement letter (type 1) 6/29/98

List enforcement actions rescinded: none

V. Local Agency Representative Data

Name: Gordon Dewers	Title: Director
Signature: [signature]	Date:September 15, 1998

VI. RWQCB Notification

Date Submitted to RB:	RB Response	
RWQCB Staff Name:	Title:	Date:

VII. Additional Comments, Data, etc.

Appendix H — *Construction Noise Memorandum* [for the] *Claribel Road at Roselle Avenue Intersection Improvements Project, Stanislaus County, California*

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Construction Noise Memorandum

To: Kyrsten Shields
Foothill Associates
590 Menlo Drive, Suite 5
Rocklin, CA 95765

Date: December 21, 2015

From: Paul Bollard
Bollard Acoustical Consultants, Inc.
3551 Bankhead Road
Loomis CA 95650

Subject: Claribel Road at Roselle Avenue Intersection Improvements Project – Stanislaus County, California

Pursuant to your request, Bollard Acoustical Consultants, Inc. (BAC) has assessed potential construction noise-related impacts for the Claribel Road at Roselle Avenue Intersection Improvements Project (project). This analysis was conducted to ensure that construction-related noise levels do not exceed the applicable Caltrans noise standards. This memorandum summarizes the results of our analysis.

Criteria for Acceptable Noise Exposure

The Caltrans Specifications with respect to construction noise are provided below:

> *Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements," of the Standard Specifications and these special provisions.*
>
> *The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 7:00 a.m., shall not exceed 86 dBA at a distance of 50 feet. This requirement shall not relieve the Contractor from responsibility for complying with local ordinances regulating noise level.*
>
> *The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety for the protection of personnel.*
>
> *Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.*

Existing Ambient Noise Conditions

The noise environment in the project vicinity is primarily defined by Claribel Road and Roselle Avenue traffic noise. To quantify existing ambient noise levels at the residences nearest to the proposed construction area, BAC conducted long-term (continuous) noise level measurements at the location shown in Appendix A on November 5, 2015.

A Larson-Davis Laboratories (LDL) 820 precision integrating sound level meter was used to complete the noise level measurement survey. The meter was calibrated before use with a LDL Model CAL200 acoustic calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The noise level measurement results are summarized below in Table 1. The measurement results indicate that ambient conditions in the immediate project vicinity are typical for semi-rural areas affected by local roadway noise.

Table 1
Summary of Long-Term Ambient Noise Measurement Results
Claribel Road and Roselle Avenue Intersection Project – November 5, 2015

	Average Measured Daytime Noise Levels (dBA)[2]			
Location[1]	**L_{eq}**	**L_{50}**	**L_{90}**	**L_{max}**
A	63	60	56	81

Notes: [1] See Appendix A for noise measurement location.
[2] See Appendices B & C for the ambient noise monitoring results spreadsheet and graph.
Source: Bollard Acoustical Consultants, Inc.

Evaluation of Construction Noise Generation

The Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) was utilized to model the various project equipment noise levels at the nearest noise-sensitive locations. Equipment assumptions were based on file data for similar projects. The RCMN results are summarized below in Table 2.

Table 2
Assumed Construction Equipment
Claribel Road and Roselle Avenue Intersection Improvements

Construction Equipment	L_{eq} at Nearest Property Line
Excavator	75.1
Compactor (ground)	74.7
Scraper	78.0
Grader	79.4
Paver	72.6
Concrete Mixer Truck	73.2
Total	**84.0**

Source: Bollard Acoustical Consultants, Inc.

The Table 2 results indicate that conservative estimates of project construction noise would be below the 86 dB Caltrans specification for nighttime operations and maximum construction noise levels would be consistent with measured ambient conditions. Although project construction activities would result in short-term periods of elevated ambient noise levels in the immediate project vicinity, construction activities are anticipated to be primarily (or completely) limited to daytime hours and short-term in nature. As a result, no adverse construction noise impacts are identified for this project.

Please contact BAC at (916) 663-0500 or paulb@bacnoise.com if you have any comments or questions regarding this memorandum.

Sincerely,

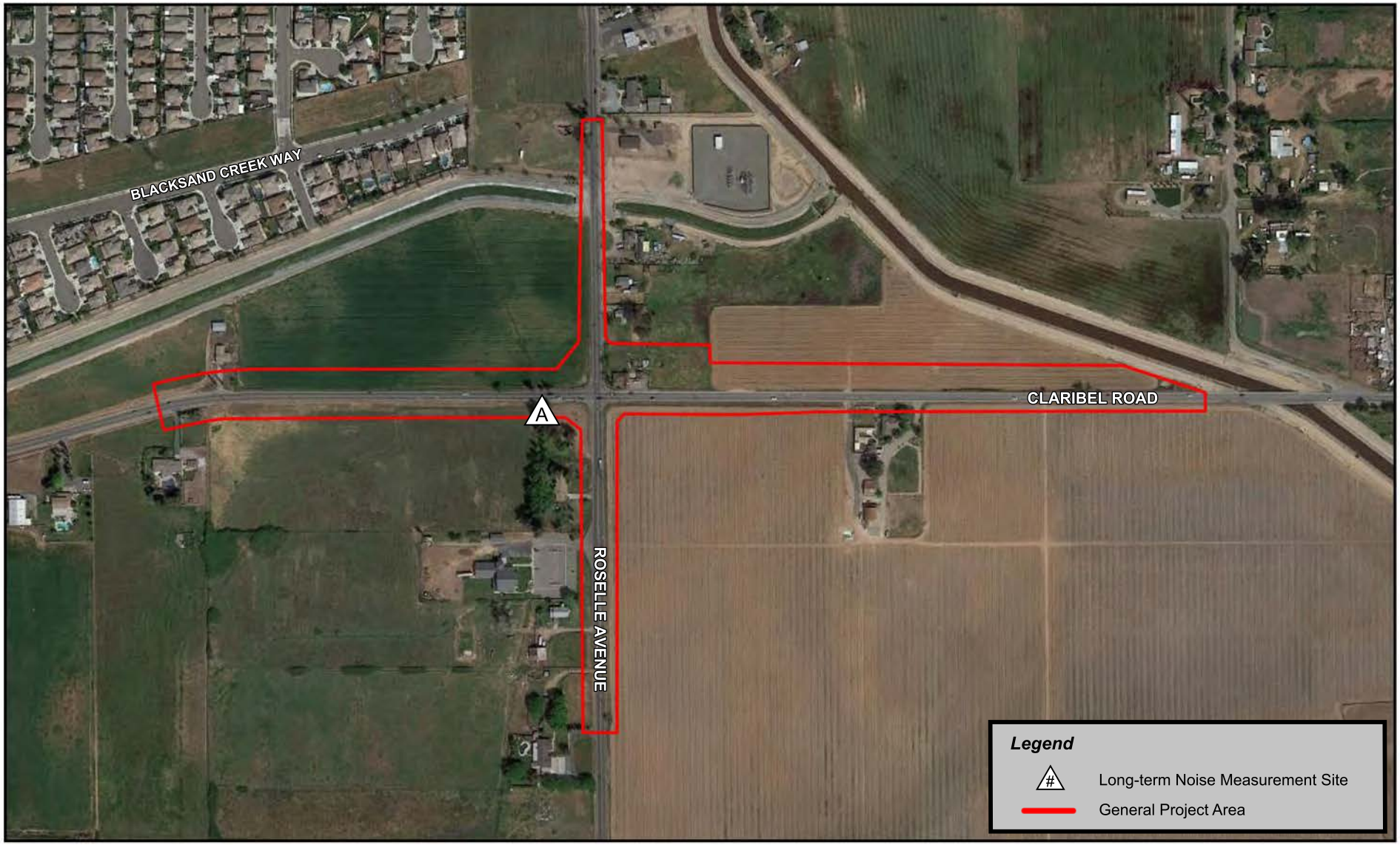
Bollard Acoustical Consultants, Inc.

Paul Bollard
President

Appendix A

Project Area and Noise Measurement Location

Claribel Road and Roselle Avenue Intersection Improvements - Stanislaus County, California



BOLLARD Acoustical Consultants

Scale (feet)

0 300 600

Appendix B
Claribel Road & Roselle Avenue Intersection
Ambient Noise Monitoring Results - Site A
Thursday, November 05, 2015

Hour	Leq	Lmax	L50	L90
0:00	57	71	53	45
1:00	57	77	52	46
2:00	57	79	48	40
3:00	56	77	46	40
4:00	53	72	46	40
5:00	58	78	52	44
6:00	61	81	57	52
7:00	62	84	60	54
8:00	63	82	61	57
9:00	66	83	61	56
10:00	62	75	60	55
11:00	62	77	59	53
12:00	61	78	58	53
13:00	61	82	59	54
14:00	61	74	59	55
15:00	62	82	60	56
16:00	65	90	61	57
17:00	64	85	61	57
18:00	62	80	60	56
19:00	63	79	61	57
20:00	64	88	61	57
21:00	63	79	61	57
22:00	63	86	60	54
23:00	60	78	56	50

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	66	61	63	63	53	59
Lmax (Maximum)	90	74	81	86	71	78
L50 (Median)	61	58	60	60	46	52
L90 (Background)	57	53	56	54	40	46

Computed Ldn, dB	66
% Daytime Energy	81%
% Nighttime Energy	19%

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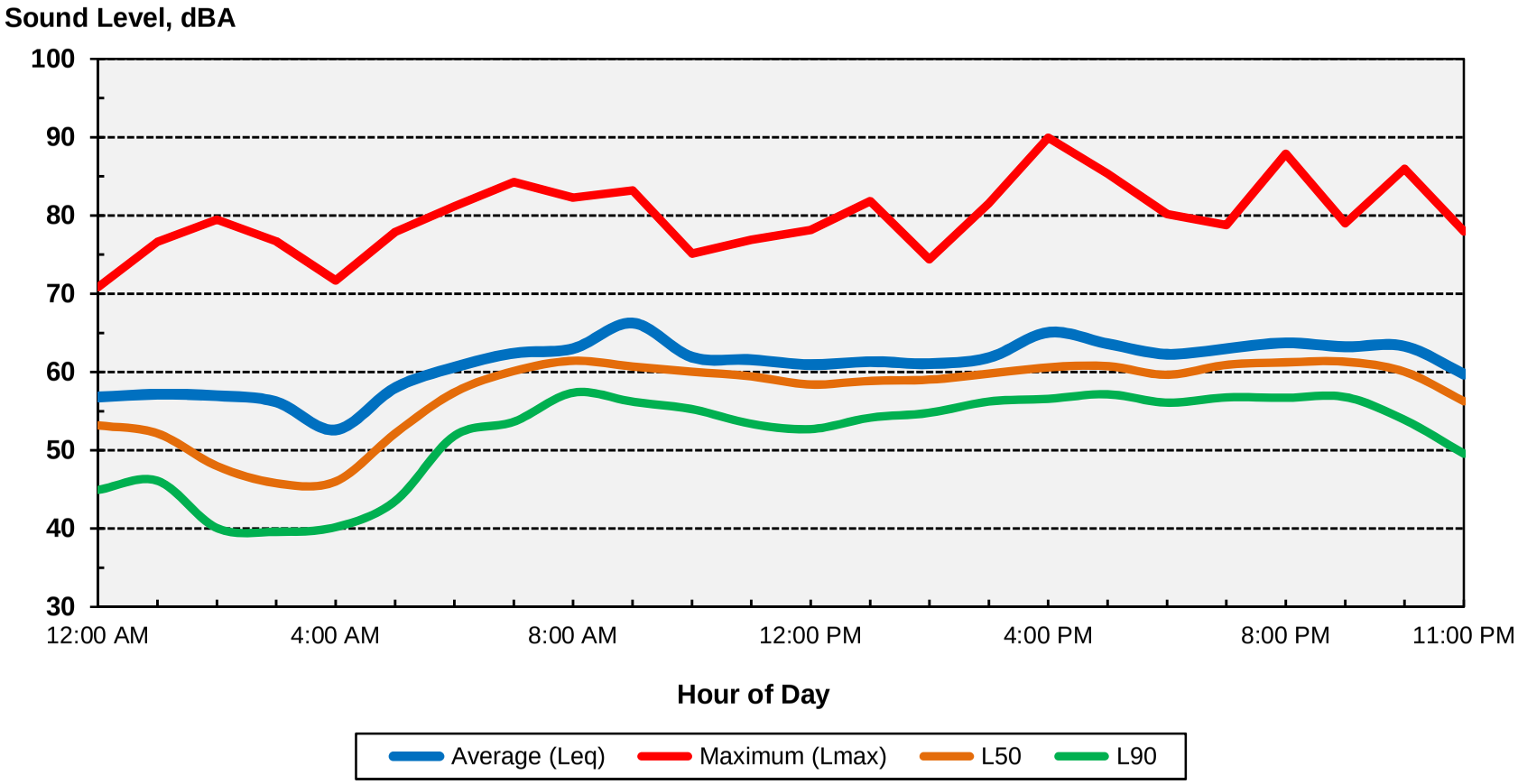
Appendix C
Claribel Road & Roselle Avenue Intersection
Ambient Noise Monitoring Results - Site A
Thursday, November 05, 2015



Ldn: 66 dB

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Appendix I — *Claribel Road/Roselle Avenue Intersection Control Evaluation*

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Claribel Road/Roselle Avenue Intersection Control Evaluation

Prepared for the

County of Stanislaus

Submitted by

Whitlock & Weinberger Transportation, Inc.

490 Mendocino Avenue
Suite 201
Santa Rosa, CA 95401

voice 707.542.9500

475 14th Street
Suite 290
Oakland, CA 94612

voice 510.444.2600

web www.w-trans.com

October 13, 2014

Balancing Functionality and Livability
Traffic Engineering • Transportation Planning

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A Collision Rate Calculations
B Traffic Counts
C Signalized Intersection Geometrics
D Roundabout Exhibits
E Level of Service Analysis
F Queuing Analysis
G Design Life Analysis

Introduction

This report presents a comparative analysis of existing and proposed intersection controls at the intersection of Claribel Road and Roselle Avenue in the County of Stanislaus. The analysis has been structured to determine the relative advantages, disadvantages, and safety characteristics associated with a roundabout at Claribel Road/Roselle Avenue in comparison to that achievable with a signalized intersection with improved lane geometrics. The traffic study was completed in accordance with the criteria published by Caltrans in the *Traffic Operations Policy Directive 13-02: Intersection Control Evaluation (ICE)* as well as assumptions discussed with the County of Stanislaus.

The study intersection is located in the County of Stanislaus, at the southern limit with the City of Riverbank.

Transportation Setting

Study Area

Study Intersection

The Claribel Road/Roselle Avenue intersection currently has all-way stop controls, with single travel lanes on all approaches. An overhead red flashing beacon currently exists, reinforcing the presence of the all-way stop controls to drivers approaching from all directions. Other than the flashing beacon, no lighting exists at the intersection.

Study Roadways

Claribel Road is an east-west major arterial which is planned to be a 6-lane expressway in the ultimate condition. Currently, the corridor includes one 12-foot lane in each direction and posted speed limit of 45 miles per hour (mph). Claribel Road provides east-west access between SR-99 to the west and Oakdale-Waterford Highway to the east. The Claribel Road corridor is split between the County of Stanislaus to the south and the City of Riverbank to the north. A signalized intersection at Squire Wells Way is located approximately 0.65 miles to the west, and an all-way stop-controlled intersection at Terminal Avenue is located approximately 0.60 miles to the east. The County is currently in the planning stages to develop a parallel "North County Corridor" (NCC) which would provide a higher capacity facility. Based on the *Traffic Demand Forecasts for North County Corridor PA/ED*, the corridor would be located approximately 1,000 feet to the south of the study intersection.

Roselle Avenue which runs in the north-south direction is planned to be a 4-lane major collector. Currently, the corridor includes one 12-foot lane in each direction, and a posted speed limit of 35 mph. Roselle Avenue provides north-south connectivity between the east side of Modesto and Riverbank. To the north approximately 0.50 miles in Riverbank, the next intersection with controls on Roselle Avenue is a signalized intersection at Crawford Road. To the south, Roselle Avenue provide north-south access within the eastern City of Modesto area and changes name to Lakewood Avenue south of Briggsmore Avenue. Approximately 1.5 miles to the south of Claribel Road, the intersection of Roselle Avenue/Sylvan Avenue is controlled by a multi-lane roundabout intersection.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 2008 through December 2012.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2010 Collision Data on California State Highways*, California Department of Transportation. The study intersection had twenty-five reported collisions over the five-year study period for a calculated collision rate of 0.84 collisions per million vehicle entering (c/mve). The statewide average collision rate for a four-legged intersection with stop controls is 0.60 c/mve. Therefore, the collision rate for this intersection is higher than the statewide average. The most common collision type is rear-end, followed by broadside. This is likely due to congestion and drivers approaching the stop controls from high-speed approaches. The collision analysis details are included in Appendix A.

Table 1
Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2008-2012)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
Claribel Rd/Roselle Ave	25	0.84	0.60

Note: c/mve = collisions per million vehicles entering

Alternative Modes

Pedestrian Facilities

No pedestrian facilities currently exist in the vicinity of Claribel Road/Roselle Avenue.

Bicycle Facilities

The *Highway Design Manual*, California Department of Transportation (Caltrans), 2012, classifies bikeways into three categories:

- *Class I Multi-Use Path*: a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- *Class II Bike Lane*: a striped and signed lane for one-way bike travel on a street or highway.
- *Class III Bike Route*: signing only for shared use with motor vehicles within the same travel lane on a street or highway.

Class I one-way buffered bike paths will be installed on Claribel Road from McHenry Avenue to Oakdale with Class II beyond. East of Claus Road, "Share the Road" signs are being installed. Table 2 summarizes the planned bicycle facilities in the project vicinity, as contained in the *Stanislaus Council of Governments (StanCOG) Non-Motorized Transportation Master Plan*, Fehr & Peers, 2013.

Table 2
Bicycle Facility Summary

Status Facility	Class	Length (miles)	Begin Point	End Point
Proposed				
Claribel Pathway	I	1.3	Squire Wells Way	Terminal Ave
Roselle Ave	I	n/a	Claribel Rd	Morrill Rd

Transit Facilities

Stanislaus Regional Transit (StaRT) provides fixed-route bus service in Stanislaus County, though there are no stops within one-half mile of the intersection.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. StaRT paratransit is designed to serve the needs of individuals with disabilities within the County.

Capacity Analysis Background

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

Claribel Road/Roselle Avenue was evaluated under the following intersection control alternatives:

- All-Way Stop Control
- Traffic Signal
- Roundabout

The intersection was analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

All-Way Stop-Control intersection control methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service.

Traffic Signal intersection control methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing.

Roundabout intersection control were evaluated using the FHWA Roundabout Method, also contained within the Unsignalized Methodology of the HCM. This methodology determines intersection operation using empirical formulas based on observations at United States roundabouts, using basic geometric and volume data to calculate entering and circulating flows. This information is then translated to an overall average vehicle delay. The LOS break points have been set at the same delays as used in the signalized methodology for the purpose of this study.

The ranges of peak hour delay associated with the various levels of service are indicated in Table 3.

Table 3
Peak Hour Intersection Level of Service Criteria

LOS	All-Way Stop-Controlled	Signalized	Roundabout
A	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.	Delay of 0 to 10 seconds.
B	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.	Delay of 10 to 20 seconds.
C	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.	Delay of 20 to 35 seconds.
D	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.	Delay of 35 to 55 seconds.
E	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.	Delay of 55 to 80 seconds.
F	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.	Delay of more than 80 seconds.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Traffic Operation Standards

Based on the most recent criteria published in the *Stanislaus County General Plan*, the County strives to maintain a Level of Service of C or better on roadways. No specific threshold for acceptable intersection LOS is specified in the General Plan; therefore, for the purpose of this study a Level of Service of D or better was considered to be acceptable which is common for most jurisdictions.

Analysis Time Periods

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts at the study intersection as well as the highest volumes on the local transportation network. The morning peak hour occurs within the period between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs within the time between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Traffic Volumes

Existing Volumes

The Existing (2014) Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. Vehicle traffic counts which included peak period turning movement counts at the study intersection and 24-hour road segment counts were collected on May 1, 2014. These counts, which are included in Appendix B, included the following:

- AM peak hour turning movements between 7:15-8:15 a.m. of 1,450 vehicles entering the intersection
- PM peak hour turning movements between 4:30-5:30 p.m. of 1,643 vehicles entering the intersection
- On Claribel Road, west of Roselle Avenue, a 24-hour volume of 13,009 vehicles per weekday
- On Roselle Avenue, north of Claribel Road, a 24-hour volume of 9,155 vehicles per weekday

Traffic Projections

Projections were acquired from the Fehr & Peers memorandum dated May 8, 2013, titled *Draft Year 2022 and 2042 Traffic Demand Forecasts for North County Corridor PA/ED*. The memorandum contains projected traffic demand forecasts for the NCC PA/ED for years 2022 and 2042. The Future (2042) volumes for this study were taken from the Alternative 2 alignment of the NCC as it had the highest volume projections for the Future (2042) scenario. Plate 1 depicts turning movement volumes during the a.m. and p.m. peak hours over the study period between years 2014 and 2042 while Figure 1 illustrates the total intersection peak hour volumes for the analysis scenarios.

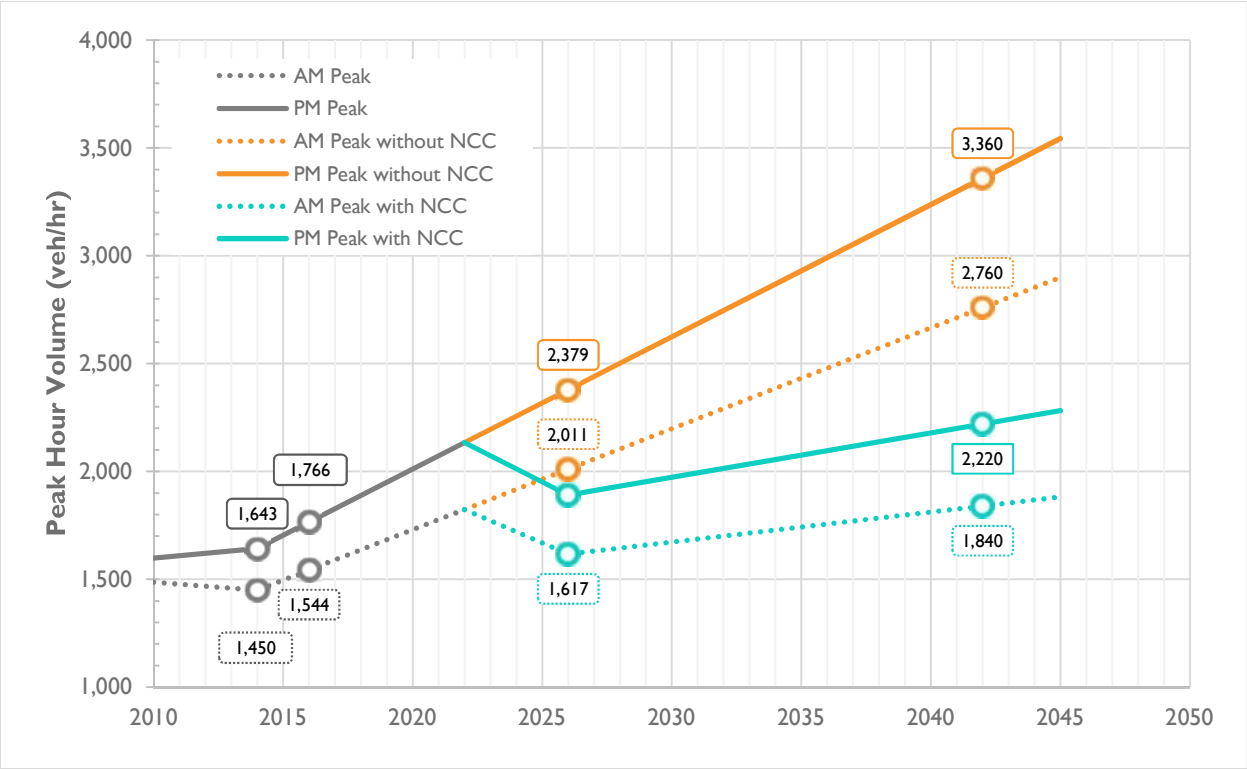
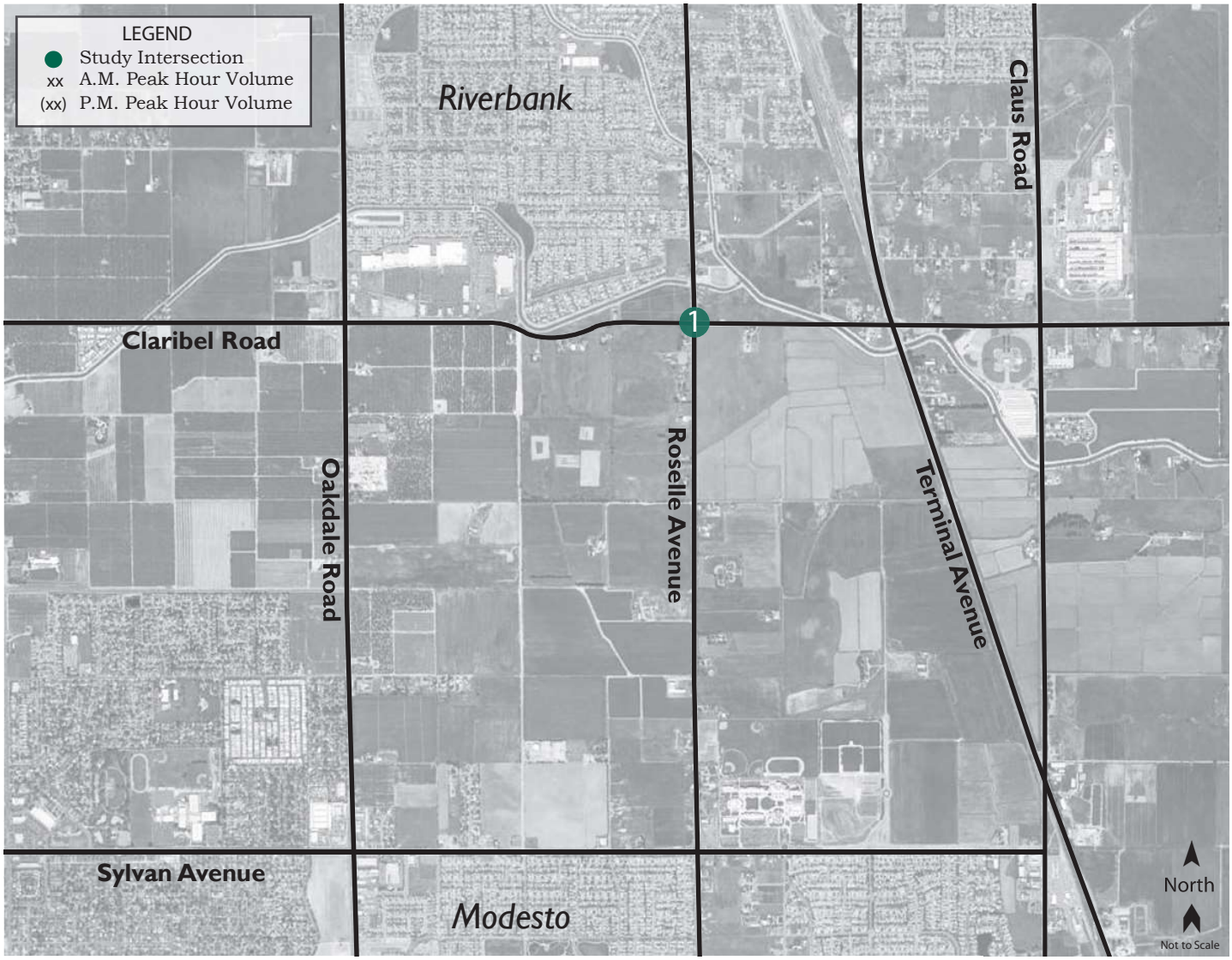
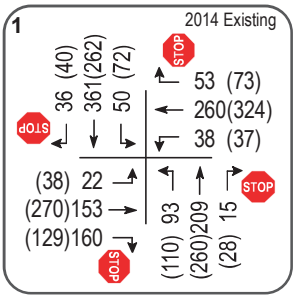
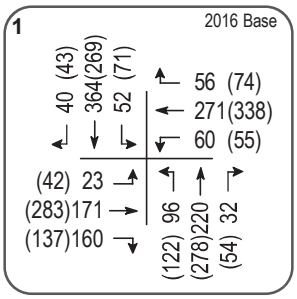


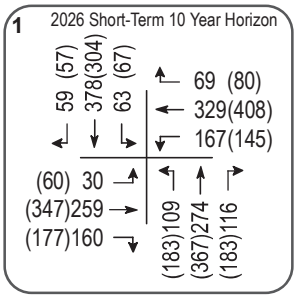
Plate 1: Intersection Peak Hour Volumes for Analysis Scenarios

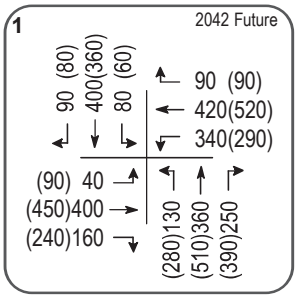


Without NCC Buildout

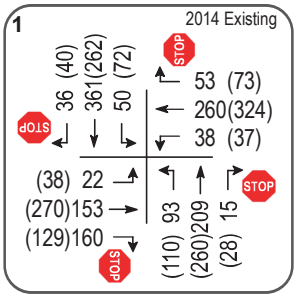


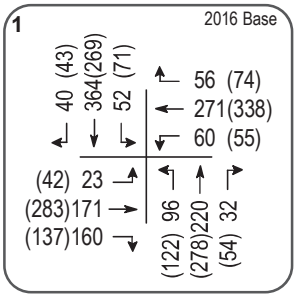


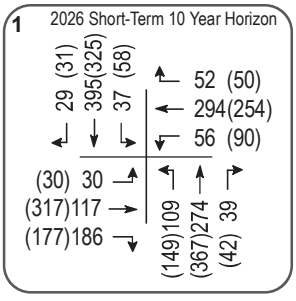


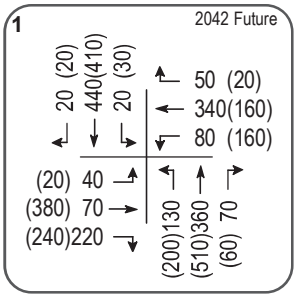


With NCC Buildout









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Claribel Road/Roselle Avenue Intersection Control Evaluation

Figure 1 – Traffic Volumes

w-trans

It should be noted that the volumes for the future (2042) scenario do show a decrease in volume for some turning movements, specifically because these traffic volumes would now be diverted to the built-out NCC. While the volumes do increase for other movements, these are due to general growth in the area. Since volumes for the intermediate scenarios were derived using straight-line interpolation, in each of these scenarios a decrease in volumes would be seen.

Base (2016) conditions were developed since this would represent the first year of a new intersection traffic control operation at the study intersections. Short Term (2026) represents a 10-year horizon after opening of the improved intersection. Base (2016) and Short Term (2026) traffic volumes were based on a straight-line interpolation using the recent counts and projections. As shown in Plate 1, p.m. peak hour conditions without the NCC represent the highest traffic volume conditions.

Intersection Control Schemes

Following are descriptions of the different traffic control schemes evaluated at the study intersection.

All-Way Stop Control

The intersection is currently controlled by stop signs on all four approaches. An "all-way stop" control allocates equal right-of-way to drivers on all approaches. This traffic control should be considered where volumes are balanced on all approaches and traffic volumes are relatively low. However, all-way stop control is the lowest capacity traffic control device and can result in substantial queuing and delay with moderate to high traffic volumes.

Traffic Signal

A traffic signal will significantly increase the capacity of the intersection due to its ability to be more demand-responsive and allow multiple vehicles to be served without stopping. The proposed traffic signal control alternative consists of protected left-turn phasing, with left-turn lanes on all approaches and a right-turn lane provided on the eastbound approach. The lane configuration and turn lane storage lengths used for the analysis are shown in Appendix C.

Roundabout

A roundabout is a form of a circular intersection in which traffic travels counterclockwise around a central island and in which entering traffic must yield to circulating traffic. Roundabouts can offer advantages over traffic signals in terms of safety, aesthetics, speed moderation, fuel consumption, air quality, and relative ease in making U-turns. A properly-designed modern roundabout includes state-of-the-practice safety considerations including speed moderation, speed consistency, and reduction in potential for vehicle conflicts.

For the purposes of this study, the roundabout geometrics assumed single-lane approaches which a layout which would be expandable to two-lane approaches in the future. The intersection layout and lane geometrics for the roundabout alternative are included in Appendix D. A secondary single-lane roundabout alternative was also considered which adds an eastbound right-turn lane and is identified as the "Modified Single Lane" alternative.

The various combinations of intersection control schemes and traffic volume scenarios evaluated at the intersection are summarized in Table 4.

Table 4
Traffic Volume and Intersection Control Alternatives

Analysis Scenario	Intersection Control				
	All-Way Stop Control	Traffic Signal	Roundabout		
			Single Lane	Modified Single Lane	Expanded Multi Lane
Existing (2014)	✓				
Base (2016)	✓	✓	✓		
Short-Term (2026)	✓	✓	✓	✓	✓
Future (2042)		✓	✓	✓	✓

Intersection Operation

Peak hour intersection Level of Service and queuing were evaluated for each of the traffic volume/intersection control scenarios for Claribel Road/Roselle Avenue. The Level of Service delay thresholds were assumed to be the same increments for the signalized intersection control and the roundabout control for consistency in comparing the two options.

The intersection level of service conditions were calculated using the *Synchro* software. The 95th percentile queuing estimates were calculated using the Synchro software (SimTraffic) and SIDRA software and used for the purposes of this analysis. Intersection Level of Service calculations are contained in Appendix E and queuing analysis is provided in Appendix F.

Existing (2014) Conditions

As summarized in Table 5, under Existing (2014) conditions with the existing all-way stop controls, the intersection operates unacceptably at LOS E during the p.m. peak hour.

Table 5
Existing (2014) Conditions Peak Hour Intersection Levels of Service

Intersection Control	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
All-Way Stop Control	34.2	D	**48.1**	**E**

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;
Bold text = deficient operation

The 95th percentile queue lengths for each approach was determined for conditions with the existing all-way stops. The results are summarized in Table 6. Since there are no existing turn lanes at the intersection, the queue lengths represent conditions within each approach lane to the nearest intersection.

Table 6
Existing (2014) Conditions Peak Hour Queuing

Intersection Control	95th Percentile Queue Length											
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
All-Way Stop Control	94 (210)			277 (254)			204 (350)			137 (259)		

Notes: Results shown as AM (PM) queue lengths in feet

Base (2016) Conditions

Under Base (2016) conditions, the study intersection under all-way stop control degrades to LOS E and F during the a.m. and p.m. peak hours, respectively. The intersection operates acceptably with LOS C under traffic signal control and LOS B under single lane roundabout control. Relative queue lengths for each of the traffic control alternatives would be acceptable. The roundabout would have the shortest through lane queues and the all-way stop would have the longest. The 95th percentile queuing for the traffic signal left-turn lanes would be contained within the provided storage.

The intersection levels of service are summarized in Table 7 and the 95th percentile queue lengths are summarized in Table 8.

Table 7
Base (2016) Peak Hour Intersection Levels of Service

Intersection Control	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
All-Way Stop Control	**35.6**	**E**	**53.6**	**F**
Traffic Signal	25.1	C	26.6	C
Roundabout – Single Lane	10.3	B	12.5	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; **Bold** text = deficient operation

Table 8
Base (2016) Conditions Peak Hour Queuing

Intersection Control	95th Percentile Queue Length			
	Northbound	Southbound	Eastbound	Westbound
All-Way Stop Control	314 (121)	230 (270)	373 (213)	303 (160)
Traffic Signal *	98/135 (119/181)	150/282 (76/191)	59/169 (136/220)	87/259 (88/209)
Roundabout – Single Lane	53 (91)	102 (84)	70 (100)	66 (110)

Notes: Results shown as AM (PM) queue lengths in feet; * Results reflected as left-turn lane queues/through lane queues

Short-Term (2026) Conditions

With NCC Buildout

As summarized in Table 9, under Short-Term (2026) conditions with the NCC, all-way stop controls would operate with an unacceptable LOS F during the p.m. peak hour. The intersection would operate acceptably with a LOS C under traffic signal control and LOS B under single lane roundabout control.

As shown in Table 10, relative queue lengths for each of the traffic control alternatives would be acceptable. The roundabout would have the shortest through lane queues and the all-way stop would have the longest. The queuing for the traffic signal left-turn lanes would be accommodated within the provided storage.

Without NCC Buildout

As summarized in Table 9, under Short-Term (2026) conditions without the NCC, all-way stop controls would operate with an unacceptable LOS F during both peak hours. The intersection would operate acceptably with LOS D or better under traffic signal control and under single lane roundabout control.

As shown in Table 10, relative queue lengths for the traffic signal and roundabout would be acceptable. The all-way stop would have unacceptable, excessively long queues. The roundabout would have the shortest through lane queues and the all-way stop would have the longest. The queuing for the traffic signal left-turn lanes would be accommodated within the provided storage.

Table 9
Short-Term (2026) Peak Hour Intersection Levels of Service

Intersection Control	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
With NCC Buildout				
All-Way Stop Control	34.4	D	**91.5**	**F**
Traffic Signal	25.0	C	26.6	C
Roundabout – Single Lane	10.9	B	15.2	B
Without NCC Buildout				
All-Way Stop Control	**84.7**	**F**	**165.9**	**F**
Traffic Signal	33.5	C	44.6	D
Roundabout – Single Lane	18.5	B	38.0	D

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; **Bold** text = deficient operation

Table 10
Short-Term (2026) Conditions Peak Hour Queuing

Intersection Control	95th Percentile Queue Length			
	Northbound	Southbound	Eastbound	Westbound
With NCC Buildout				
All-Way Stop Control	156 (540)	237 (266)	198 (913)	179 (203)
Traffic Signal*	95/171 (70/132)	137/376 (125/250)	60/114 (70/216)	97/249 (122/208)
Roundabout – Single Lane	62 (145)	110 (93)	64 (155)	80 (93)
Without NCC Buildout				
All-Way Stop Control	522 (1543)	485 (330)	503 (1013)	523 (905)
Traffic Signal*	125/179 (250/574)	184/452 (118/233)	100/249 (180/378)	206/257 (300/469)
Roundabout – Single Lane	113 (467)	179 (155)	140 (237)	170 (480)

Notes: Results shown as AM (PM) queue lengths in feet; **Bold** text = queue lengths exceeding 500 feet; * Results reflected as left-turn lane queues/through lane queues

Future (2042) Conditions

With NCC Buildout

As summarized in Table 11, under Future (2042) conditions with the NCC, the traffic signal, single lane roundabout, modified single lane roundabout and expanded roundabout would operate acceptably at LOS D or above during both peak hours. The existing all-way stop control would have deficient LOS E and LOS F conditions during the a.m. and p.m. peak hours, respectively.

As shown in Table 12, relative queue lengths are shown. For signalized intersections, the available storage length is the distance to the nearest intersection for through movements (link length), while it is the storage length of the proposed turn pockets for left/right-turn lanes. For roundabouts and stop-control, the available storage is the distance to the nearest intersection. The queue lengths for each of the traffic

control alternatives would be acceptable, except the all-way stop control during the p.m. peak. The expanded roundabout would have the shortest through lane queues and the single lane roundabout would have the longest. The queuing for the traffic signal left-turn lanes would be accommodated within the provided storage. The existing all-way stop control would have deficient excessive queueing.

Without NCC Buildout

As summarized in Table 11, under Future (2042) conditions without the NCC, the traffic signal and single lane roundabout configurations would operate deficiently at LOS E or F during both peak hours. The intersection would operate acceptably with a LOS B during the a.m. peak and LOS C during the p.m. peak under the expanded roundabout control. The all-way stop control would have deficient LOS F conditions.

As shown in Table 12, relative queue lengths are shown. For signalized intersections, the available storage length is the distance to the nearest intersection for through movements (link length), while it is the storage length of the proposed turn pockets for left/right-turn lanes. For roundabouts and stop-control, the available storage is the distance to the nearest intersection. The all-way stop control, single lane roundabout and modified single lane roundabout would have unacceptable, excessively long queues. The expanded roundabout would have acceptable queues.

Table 11
Future (2042) Peak Hour Intersection Levels of Service

Intersection Control	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
With NCC Buildout				
No Build – All Way Stop	**44.8**	**E**	**	**F**
Traffic Signal	29.4	C	44.5	D
Roundabout – Single Lane	13.8	B	38.0	D
Roundabout – Modified Single Lane	13.1	B	25.1	C
Roundabout – Expanded	8.4	A	13.0	B
Without NCC Buildout				
No Build – All Way Stop	**	**F**	**	**F**
Traffic Signal	**63.8**	**E**	**134.8**	**F**
Roundabout – Single Lane	**80.4**	**F**	**184.9**	**F**
Roundabout – Modified Single Lane	**64.7**	**E**	**181.5**	**F**
Roundabout – Expanded	16.6	B	33.3	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service;
Bold text = deficient operation; ** = Delay exceeds 120 seconds

Table 12
Future (2042) Conditions Peak Hour Queuing

Intersection Control	95th Percentile Queue Length			
	Northbound	Southbound	Eastbound	Westbound
With NCC Buildout				
No Build – All Way Stop	320 (1365)	257 (376)	222 (**2146**)	280 (155)
Traffic Signal *	115/236 (206/290)	155/344 (120/344)	84/112 (91/450)	205/374 (152/155)
Roundabout – Single Lane	85 (518)	141 (126)	68 (556)	131 (94)
Roundabout – Modified Single Lane	85 (518)	141 (126)	17 (109) 36 (45)	131 (94)
Roundabout – Expanded**	57 (196) 7 (7)	91 (83) 3 (3)	17 (72) 36 (72)	38 (32) 38 (32)
Without NCC Buildout				
No Build – All Way Stop	1109 (**3938**)	1210 (561)	**1216 (2146)**	1811 (2226)
Traffic Signal *	268/479 (310/473)	259/423 (221/496)	138/554 (235/908)	296/335 (382/739)
Roundabout – Single Lane	178 **(3954)**	496 (318)	902 (1752)	1626 (2412)
Roundabout – Modified Single Lane	198 **(4654)**	488 (318)	190 (273) 31 (48)	**1651 (2153)**
Roundabout – Expanded **	95 (488) 11 (83)	165 (173) 17 (18)	88 (115) 88 (115)	106 (260) 106 (260)

Notes: Results shown as AM (PM) queue lengths in feet; Queues of less than 25 feet represent a 1 vehicle queue for less than the full peak hour. **Bold** text = queue lengths exceed available storage; * Results reflected as left-turn lane queues/through lane queues; **Results reflected as queues for inside lane approach/outside lane approach.

Safety

Findings from the 2010 NCHRP report *Roundabouts: An Informational Guide* (NCHRP Report 672) indicate that signalized intersections that have been converted to roundabout control have been found to experience a 47.8 percent reduction in total collisions on average (potential reduction from 25 collisons in 5 years to 13 collisions). Injury and fatal collisions at the same studies intersections were found to reduce by 77.7 percent. These statistics provide compelling evidence that properly-designed roundabouts can be expected to have a significantly better safety performance than a signalized intersection at the same location.

The NCHRP report indicates that intersections which have been converted from all-way stop-controls to a roundabout have been found on average to result in statistically insignificant improvements to safety. Because Claribel Road/Roselle Avenue has encountered a collision rate that is substantially higher than the statewide average for all-way stop-controlled intersections, however, it is likely that the safety and capacity benefits created by a roundabout would result in a significant improvement in safety at this particular location.

In summary, implementation of a roundabout at Claribel Road/Roselle Avenue would be expected to result in a long-range safety performance that is substantially better than could be achieved with the current all-way stop-controls or installation of a traffic signal.

Traffic Control Comparison

Using a checklist of key operational, design and environmental criteria, the three traffic control alternatives for the study intersection were compared. The criteria and scoring is similar to the Intersection Control Evaluation that Caltrans District 10 used for the NCC evaluation. The results of the comparison which

is shown in Table 13, indicates that the Roundabout would best address the 20 point criteria followed by the traffic signal.

Table 13
Claribel Road/Roselle Avenue Intersection Control Evaluation Comparison

Criteria	All-Way Stop	Roundabout	Traffic Signal
1. Project Cost	5	3	2
2. Meet the Purpose and Need	1	5	4
3. Meet Driver Expectation	4	3	5
4. Reduce Accident Severity	4	**5**	3
5. Improve Pedestrian Safety	3	5	4
6. Improve Bicyclist Safety	3	4	4
7. Improve Level of Service	1	5	4
8. Minimize Queue	1	5	4
9. Vehicle Hours Traveled (VHT)	1	5	4
10. Vehicle Hours of Delay (VHD)	1	5	4
11. Create Gap in Traffic (for driveway access)	2	2	4
12. Accommodate STAA Trucks	5	5	5
13. Minimize Right of Way Impacts	5	3	3
14. Reduce Emission	1	4	5
15. Minimize Environmental Impacts	4	3	3
16. Accommodate Access to Surrounding Properties	3	5	4
17. Provide Aesthetic Opportunities	2	5	3
18. Reduce Maintenance Costs	5	4	2
19. Received Public/Stakeholder Support	0	4	4
20. Reduce Fuel Consumption	1	5	4
Total Points	**52**	**85**	**75**

Note: 5 = Best addresses criteria
3 = Somewhat addresses criteria
1 = Least addresses criteria
0 = Fatal Flaw

Roundabout Design Life

The design life of each roundabout design scheme was evaluated for Claribel Road/Roselle Avenue. The three design options include:

- Single-Lane Roundabout – single lanes on all approaches
- Modified Single-Lane Roundabout – single lanes on all approaches with an added eastbound right-turn lane
- Expanded Roundabout – two-lanes entries on all approaches

Plate 2 depicts the approximate year at which each of the roundabout configuration options reach its maximum capacity. The maximum capacity years are based on p.m. peak hour volumes, as these thresholds were met sooner than during the a.m. peak hour. Additionally, these thresholds represent the year in which the highest volume approach at the intersection falls below the acceptable LOS rather than considering only the intersection's overall operation.

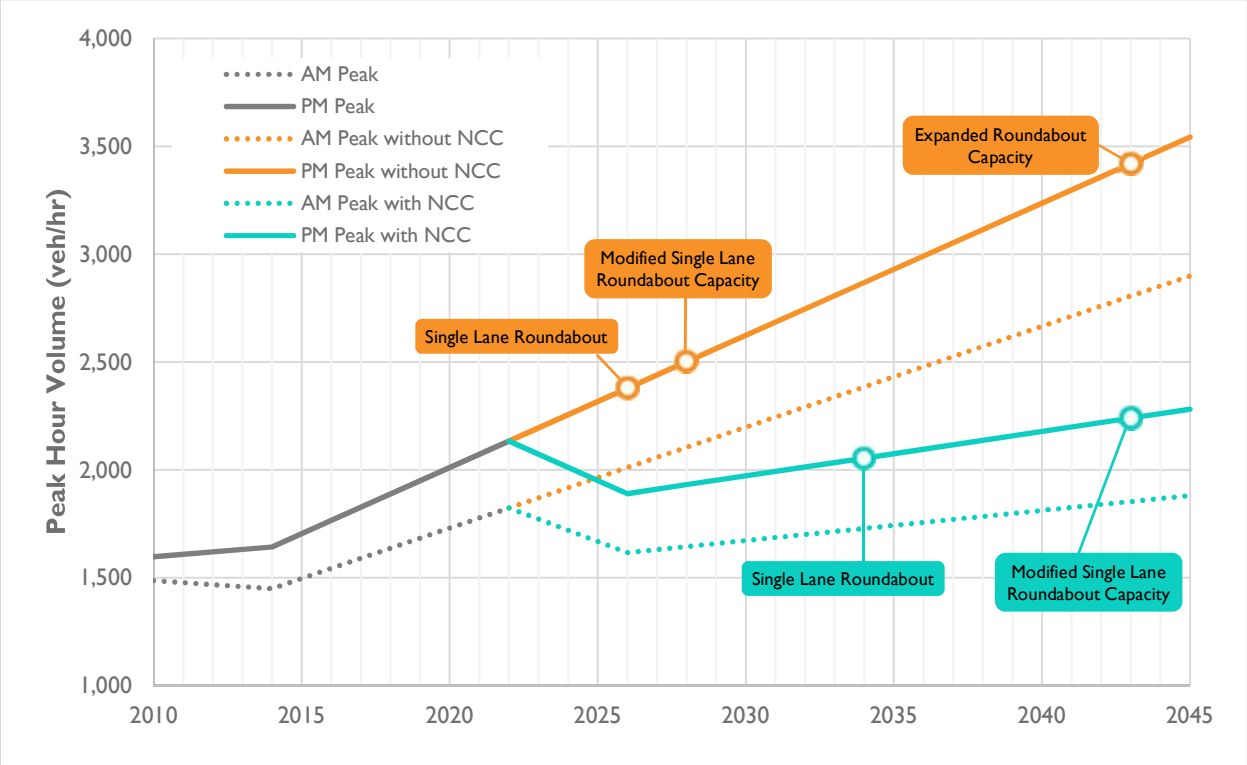

Plate 2: Peak Hour Volumes and Maximum Capacity Year

The single lane roundabout is expected to provide sufficient capacity without buildout of the NCC through the Year 2026. With buildout of the NCC, the single lane roundabout is expected to operate acceptably through the Year 2034.

Without the NCC, the modified single lane roundabout would extend the life of the roundabout to the year 2028. Assuming the addition of the NCC, the modified single lane roundabout is expected to reach capacity in 2043.

The expanded dual lane roundabout is expected to reach capacity in year 2043 if the NCC were not completed. The expanded roundabout maximum capacity design year with buildout of the NCC was not considered as the year was well beyond the long-term horizon year of this study.

The intersection calculations related to the design life of the roundabout are included in Appendix G.

Conclusions and Recommendations

Conclusions

Existing and Base Conditions

- All-Way Stop Control – The intersection would operate with an unacceptable LOS F during the p.m. peak hour.
- Traffic Signal – The intersection would operate at an acceptable LOS C and would have acceptable queuing.
- Single Lane Roundabout – The intersection would operate at an acceptable LOS B and would have acceptable queuing, with queues about half as long as would occur with a traffic signal.

With North County Corridor Buildout

- All-Way Stop Control – The intersection would continue to deteriorate to unacceptable LOS F.
- Traffic Signal – By 2026, the intersection would operate at an acceptable LOS D, and would have acceptable queuing. By 2042, the intersection would operate at an acceptable LOS D during the p.m. peak hour, and would have acceptable queuing.
- Roundabout – By 2026, the single lane roundabout would operate at an acceptable LOS B and would have acceptable queuing. By 2042, the intersection would operate at an acceptable LOS D during the p.m. peak hour, and still have acceptable queuing.

Without North County Corridor Buildout

- All-Way Stop Control – The intersection would continue to deteriorate to unacceptable LOS F conditions.
- Traffic Signal – By 2026, the intersection would operate at an acceptable LOS D; however, the northbound approach would begin experiencing queues of more than 500 feet. By 2042, the intersection would operate at an unacceptable LOS F during the p.m. peak hour, and several approaches would experience through lane queues of more than 500 feet.
- Roundabout – By 2026, the single lane roundabout would operate at an acceptable LOS D and would have acceptable queuing. By 2042, the intersection would operate at an unacceptable LOS F during the p.m. peak hour, and several approaches would experience through lane queues of more than 500 feet. In order for the roundabout to operate acceptably under 2042 conditions, it would need to be expanded to include dual-lane entries on all four approaches.

Recommendations

- Considering the lane utilization versus intersection capacity and queuing as well as other safety and operational features which a roundabout offers, it is recommended that the intersection of Claribel Road/Roselle Avenue be designed with roundabout traffic control.
- It is recommended that the roundabout be designed as a single lane roundabout which is expandable to a larger roundabout with dual-lane entries on all approaches. This design approach would serve traffic until at least 2026 with the single approach lanes, assuming that the NCC is not implemented, and would be sized to moderate traffic speeds and create the safety benefits that a roundabout offers.

Depending on the outcome of the NCC, the roundabout could then be expanded to the outside from the initial footprint and would serve traffic demand well beyond 30 years.

- An option was considered which included a single lane roundabout that could be modified in the future by adding an eastbound right-turn lane. This option has a smaller footprint than a single lane (expandable) design. However, this option is not recommended since its design life is limited to only 12 years without implementation of NCC and 18 years with implementation of NCC.

Study Participants and References

Study Participants

Principal in Charge:	Steve Weinberger, PE, PTOE
Roundabout Designer:	Zack Matley, AICP
Assistant Engineer:	Smadar Boardman, EIT
Technician/Graphics:	Deborah J. Mizell
Editing/Formatting:	Angela McCoy
Report Review:	Zack Matley, AICP

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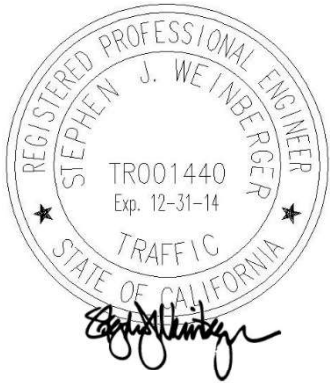


Appendix A

Collision Rate Calculations

Intersection Collision Rate Calculaions

County of Stanislaus

Intersection # 1: Claribel Rd & Roselle Ave

Date of Count: Thursday, May 01, 2014

Number of Collisions: 25
Number of Injuries: 10
Number of Fatalities: 0
ADT: 16400
Start Date: January 1, 2008
End Date: December 31, 2012
Number of Years: 5

Intersection Type: Four-Legged
Control Type: 4 Way Stop
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{25 \times 1{,}000{,}000}{16{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.84 c/mve**	**0.0%**	**40.0%**
Statewide Average*	**0.60 c/mve**	**0.8%**	**32.9%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2010 Collision Data on California State Highways, Caltrans

Appendix B

Traffic Counts

ALL TRAFFIC DATA

Stanislaus County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7274-001 Roselle Avenue-Claribel Road.ppd
Date : 5/1/2014

Unshifted Count = All Vehicles

	Roselle Avenue Southbound					Claribel Road Westbound					Roselle Avenue Northbound					Claribel Road Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	6	63	12	0	81	2	46	10	0	58	23	26	1	0	50	6	21	18	0	45	234	0
07:15	15	102	12	0	129	10	59	13	0	82	21	26	6	0	53	7	36	27	0	70	334	0
07:30	7	110	3	0	120	10	72	10	0	92	22	50	2	0	74	3	38	73	0	114	400	0
07:45	11	97	7	0	115	14	64	15	0	93	27	77	4	0	108	7	43	43	0	93	409	0
Total	39	372	34	0	445	36	241	48	0	325	93	179	13	0	285	23	138	161	0	322	1377	0
08:00	17	52	14	0	83	4	65	15	0	84	23	56	3	0	82	5	36	17	0	58	307	0
08:15	7	54	11	0	72	2	65	17	0	84	18	58	2	0	78	3	50	13	0	66	300	0
08:30	13	57	12	0	82	2	57	7	0	66	19	38	4	0	61	6	45	11	0	62	271	0
08:45	12	38	15	0	65	5	86	6	0	97	21	24	2	0	47	4	48	7	0	59	268	0
Total	49	201	52	0	302	13	273	45	0	331	81	176	11	0	268	18	179	48	0	245	1146	0
16:00	12	46	5	0	63	7	82	20	0	109	24	49	3	0	76	9	75	21	0	105	353	0
16:15	10	64	7	0	81	1	79	17	0	97	29	66	5	0	100	11	72	23	0	106	384	0
16:30	20	63	14	0	97	16	75	24	0	115	24	70	8	0	102	9	65	36	0	110	424	0
16:45	15	73	7	0	95	12	81	21	0	114	33	49	10	0	92	8	76	33	0	117	418	0
Total	57	246	33	0	336	36	317	82	0	435	110	234	26	0	370	37	288	113	0	438	1579	0
17:00	20	63	11	0	94	7	74	15	0	96	28	64	6	0	98	12	73	25	0	110	398	0
17:15	17	63	8	0	88	2	94	13	0	109	25	77	4	0	106	9	56	35	0	100	403	0
17:30	16	66	14	0	96	7	68	28	0	103	34	54	7	0	95	10	75	26	0	111	405	0
17:45	15	67	17	0	99	6	84	18	0	108	31	56	9	0	96	5	74	38	0	117	420	0
Total	68	259	50	0	377	22	320	74	0	416	118	251	26	0	395	36	278	124	0	438	1626	0
Grand Total	213	1078	169	0	1460	107	1151	249	0	1507	402	840	76	0	1318	114	883	446	0	1443	5728	0
Apprch %	14.6%	73.8%	11.6%	0.0%		7.1%	76.4%	16.5%	0.0%		30.5%	63.7%	5.8%	0.0%		7.9%	61.2%	30.9%	0.0%			
Total %	3.7%	18.8%	3.0%	0.0%	25.5%	1.9%	20.1%	4.3%	0.0%	26.3%	7.0%	14.7%	1.3%	0.0%	23.0%	2.0%	15.4%	7.8%	0.0%	25.2%	100.0%	

ALL TRAFFIC DATA

Stanislaus County
All Vehicles on Unshifted
Nothing on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7274-001 Roselle Avenue-Claribel Road.ppd
Date : 5/1/2014

Unshifted Count = All Vehicles

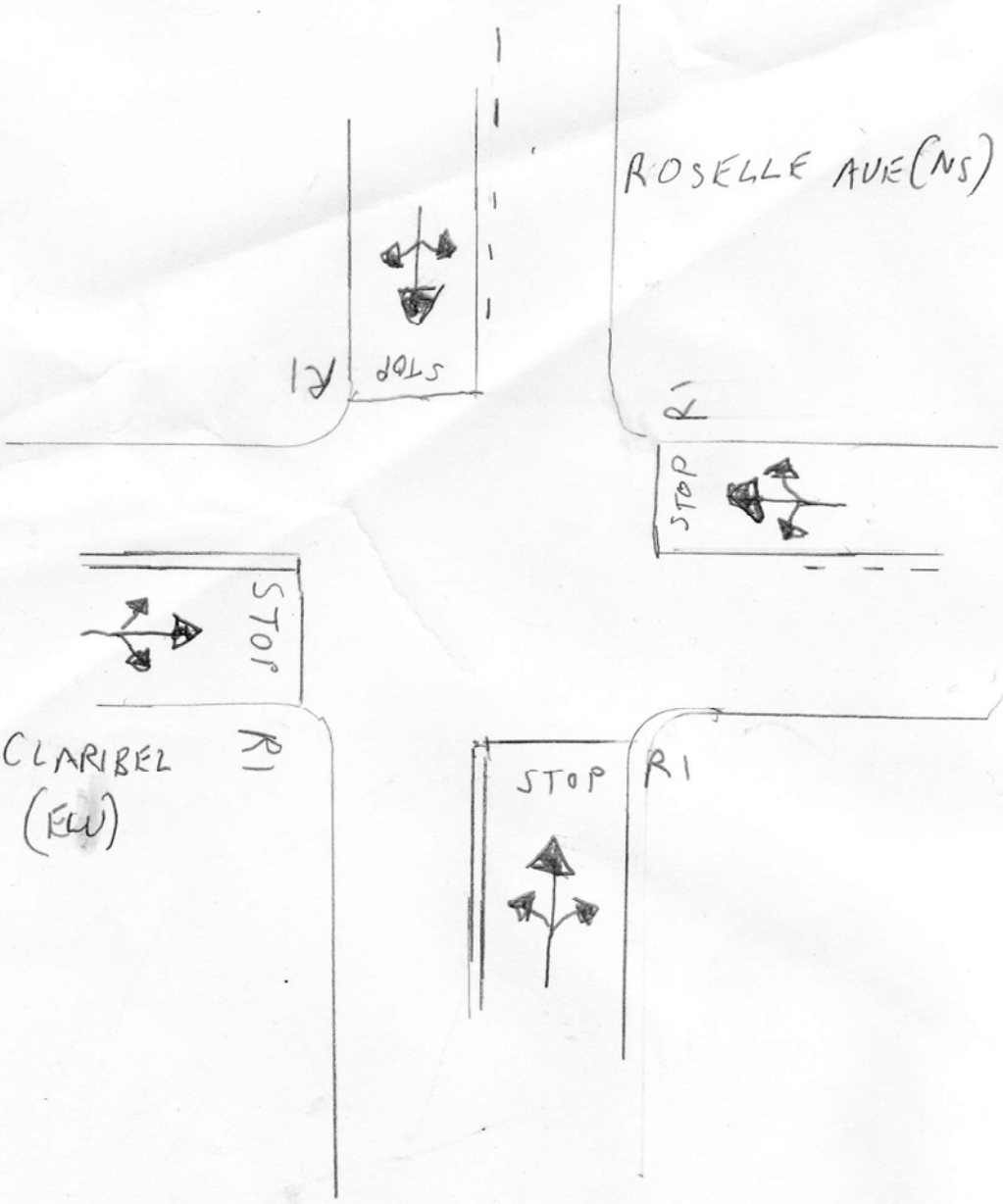
AM PEAK HOUR	Roselle Avenue Southbound					Claribel Road Westbound					Roselle Avenue Northbound					Claribel Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	15	102	12	0	129	10	59	13	0	82	21	26	6	0	53	7	36	27	0	70	334
07:30	7	110	3	0	120	10	72	10	0	92	22	50	2	0	74	3	38	73	0	114	400
07:45	11	97	7	0	115	14	64	15	0	93	27	77	4	0	108	7	43	43	0	93	409
08:00	17	52	14	0	83	4	65	15	0	84	23	56	3	0	82	5	36	17	0	58	307
Total Volume	50	361	36	0	447	38	260	53	0	351	93	209	15	0	317	22	153	160	0	335	1450
% App Total	11.2%	80.8%	8.1%	0.0%		10.8%	74.1%	15.1%	0.0%		29.3%	65.9%	4.7%	0.0%		6.6%	45.7%	47.8%	0.0%		
PHF	.735	.820	.643	.000	.866	.679	.903	.883	.000	.944	.861	.679	.625	.000	.734	.786	.890	.548	.000	.735	.886

PM PEAK HOUR	Roselle Avenue Southbound					Claribel Road Westbound					Roselle Avenue Northbound					Claribel Road Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	20	63	14	0	97	16	75	24	0	115	24	70	8	0	102	9	65	36	0	110	424
16:45	15	73	7	0	95	12	81	21	0	114	33	49	10	0	92	8	76	33	0	117	418
17:00	20	63	11	0	94	7	74	15	0	96	28	64	6	0	98	12	73	25	0	110	398
17:15	17	63	8	0	88	2	94	13	0	109	25	77	4	0	106	9	56	35	0	100	403
Total Volume	72	262	40	0	374	37	324	73	0	434	110	260	28	0	398	38	270	129	0	437	1643
% App Total	19.3%	70.1%	10.7%	0.0%		8.5%	74.7%	16.8%	0.0%		27.6%	65.3%	7.0%	0.0%		8.7%	61.8%	29.5%	0.0%		
PHF	.900	.897	.714	.000	.964	.578	.862	.760	.000	.943	.833	.844	.700	.000	.939	.792	.888	.896	.000	.934	.969

14-7274-001

5/1/14

N



Volumes for: Thursday, May 01, 2014 City: Stanislaus County Project #: 14-7275-001
Location: Claribel Road west of Roselle Avenue

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	20	94			3	115				
12:15	10	98			4	90				
12:30	13	119			5	98				
12:45	6	104	49	415	2	129	14	432	63	847
1:00	12	102			1	98				
1:15	6	117			4	63				
1:30	3	105			2	86				
1:45	7	119	28	443	4	101	11	348	39	791
2:00	4	123			3	104				
2:15	4	109			3	116				
2:30	5	107			4	100				
2:45	6	89	19	428	5	129	15	449	34	877
3:00	2	101			4	101				
3:15	1	112			3	92				
3:30	4	92			3	85				
3:45	6	107	13	412	21	131	31	409	44	821
4:00	8	108			14	111				
4:15	8	104			14	113				
4:30	10	109			15	111				
4:45	5	122	31	443	14	122	57	457	88	900
5:00	7	118			27	111				
5:15	19	96			21	125				
5:30	19	108			28	118				
5:45	19	120	64	442	52	134	128	488	192	930
6:00	24	129			34	127				
6:15	37	117			33	105				
6:30	44	102			60	109				
6:45	53	117	158	465	69	110	196	451	354	916
7:00	38	121			81	87				
7:15	71	114			91	101				
7:30	140	114			97	116				
7:45	74	120	323	469	98	92	367	396	690	865
8:00	61	106			103	71				
8:15	75	104			96	86				
8:30	50	90			91	89				
8:45	59	98	245	398	119	60	409	306	654	704
9:00	54	102			108	53				
9:15	58	77			87	46				
9:30	71	65			107	55				
9:45	74	62	257	306	119	42	421	196	678	502
10:00	88	53			106	29				
10:15	85	44			101	27				
10:30	90	43			108	24				
10:45	86	35	349	175	113	17	428	97	777	272
11:00	92	35			107	16				
11:15	102	26			109	16				
11:30	105	26			101	8				
11:45	98	14	397	101	109	7	426	47	823	148
Total	1933	4497	1933	4497	2503	4076	2503	4076	4436	8573
Combined Total	6430		6430		6579		6579		13009	
AM Peak	11:45 AM				10:30 AM					
Vol.	409				437					
P.H.F.	0.859				0.967					
PM Peak		5:30 PM				5:15 PM				
Vol.		474				504				
P.H.F.		0.919				0.940				
Percentage	30.1%	69.9%			38.0%	62.0%				

Volumes for: Thursday, May 01, 2014 City: Stanislaus County Project #: 14-7275-002
Location: Roselle Avenue north of Claribel Road

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	12	49			6	48				
12:15	9	46			2	46				
12:30	6	52			9	61				
12:45	3	50	30	197	6	57	23	212	53	409
1:00	13	40			7	80				
1:15	6	90			3	68				
1:30	5	80			5	78				
1:45	6	69	30	279	4	70	19	296	49	575
2:00	6	87			2	89				
2:15	7	103			3	89				
2:30	4	98			1	94				
2:45	2	84	19	372	5	98	11	370	30	742
3:00	6	91			3	79				
3:15	2	108			2	68				
3:30	5	50			6	74				
3:45	1	92	14	341	9	60	20	281	34	622
4:00	7	73			8	66				
4:15	7	98			16	81				
4:30	9	99			22	101				
4:45	4	76	27	346	21	89	67	337	94	683
5:00	8	90			13	100				
5:15	19	96			30	85				
5:30	17	93			50	91				
5:45	36	77	80	356	27	94	120	370	200	726
6:00	21	86			35	86				
6:15	34	69			56	74				
6:30	32	78			83	67				
6:45	45	75	132	308	83	62	257	289	389	597
7:00	43	89			89	55				
7:15	44	97			134	59				
7:30	64	73			112	50				
7:45	99	80	250	339	109	36	444	200	694	539
8:00	75	58			81	62				
8:15	74	63			72	48				
8:30	48	65			84	39				
8:45	34	42	231	228	69	34	306	183	537	411
9:00	32	56			57	32				
9:15	37	42			46	44				
9:30	41	49			46	29				
9:45	33	27	143	174	54	27	203	132	346	306
10:00	42	35			52	27				
10:15	34	28			41	23				
10:30	43	30			46	18				
10:45	41	36	160	129	46	16	185	84	345	213
11:00	43	24			46	21				
11:15	56	24			49	17				
11:30	59	17			55	20				
11:45	49	14	207	79	51	16	201	74	408	153
Total	1323	3148	1323	3148	1856	2828	1856	2828	3179	5976
Combined Total	4471		4471		4684		4684		9155	
AM Peak	7:30 AM				7:00 AM					
Vol.	312				444					
P.H.F.	0.788				0.828					
PM Peak		2:30 PM				4:30 PM				
Vol.		381				375				
P.H.F.		0.882				0.928				
Percentage	29.6%	70.4%			39.6%	60.4%				

Appendix C

Signalized Intersection Geometrics

ROSELLE AVE

CLARIBEL AVE

MID LATERAL No. 6

MID MAIN CANAL

40 MPH DESIGN SPEED

50 MPH DESIGN SPEED

50 MPH DESIGN SPEED

40 MPH DESIGN SPEED

245' HDM LANE TAPER L=WV²/60

160' AASHTO DECEL. LENGTH

100' AASHTO BAY TAPER

200' WTRANS STORAGE LENGTH

HDM MIN CURVE RADIUS 1200'

Ex R/W

100'

325'

180'

105+00

110+00

115+00

100+00

GEOMETRICS ALONG ROSELLE PUSHED WEST TO AVOID PROPERTY TAKES

180' WTRANS STORAGE LENGTH

425' AASHTO DECEL. LENGTH

480' REMAINING TRANSITION LENGTH

100' AASHTO BAY TAPER

TANGENT L>400'

CURVE R=2000'

Ex R/W

130+00

131+48

120+00

135+00

A

A

CURVE R=2000'

Ex R/W

APE LIMITS

CURVE R=2000'

100' AASHTO BAY TAPER

325' AASHTO DECEL. LENGTH

250' WTRANS STORAGE LENGTH

GEOMETRICS ALONG CLARIBEL PUSHED NORTH TO AVOID MID DITCH

250' WTRANS STORAGE LENGTH

275' AASHTO DECEL. LENGTH

100' AASHTO BAY TAPER

346' HDM LANE TAPER L=WV²/60

200+00

205+00

215+00

219+24

SCALE: 1"=100'

0ft 50ft 100ft 200ft

℄

6' 12' 12' 12' 6'

SECTION A-A

Stanislaus County

STANISLAUS COUNTY
CLARIBEL RD / ROSELLE AVE INTERSECTION PROJECT

MARK THOMAS & COMPANY

Appendix D

Roundabout Exhibits

w-trans
490 Mendocino Avenue, Suite 201
Santa Rosa, CA 95401
Ph: 707 542-9500

N

ROUNDABOUT LAYOUT

1" = 100'

COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT

REVISED BY	DATE

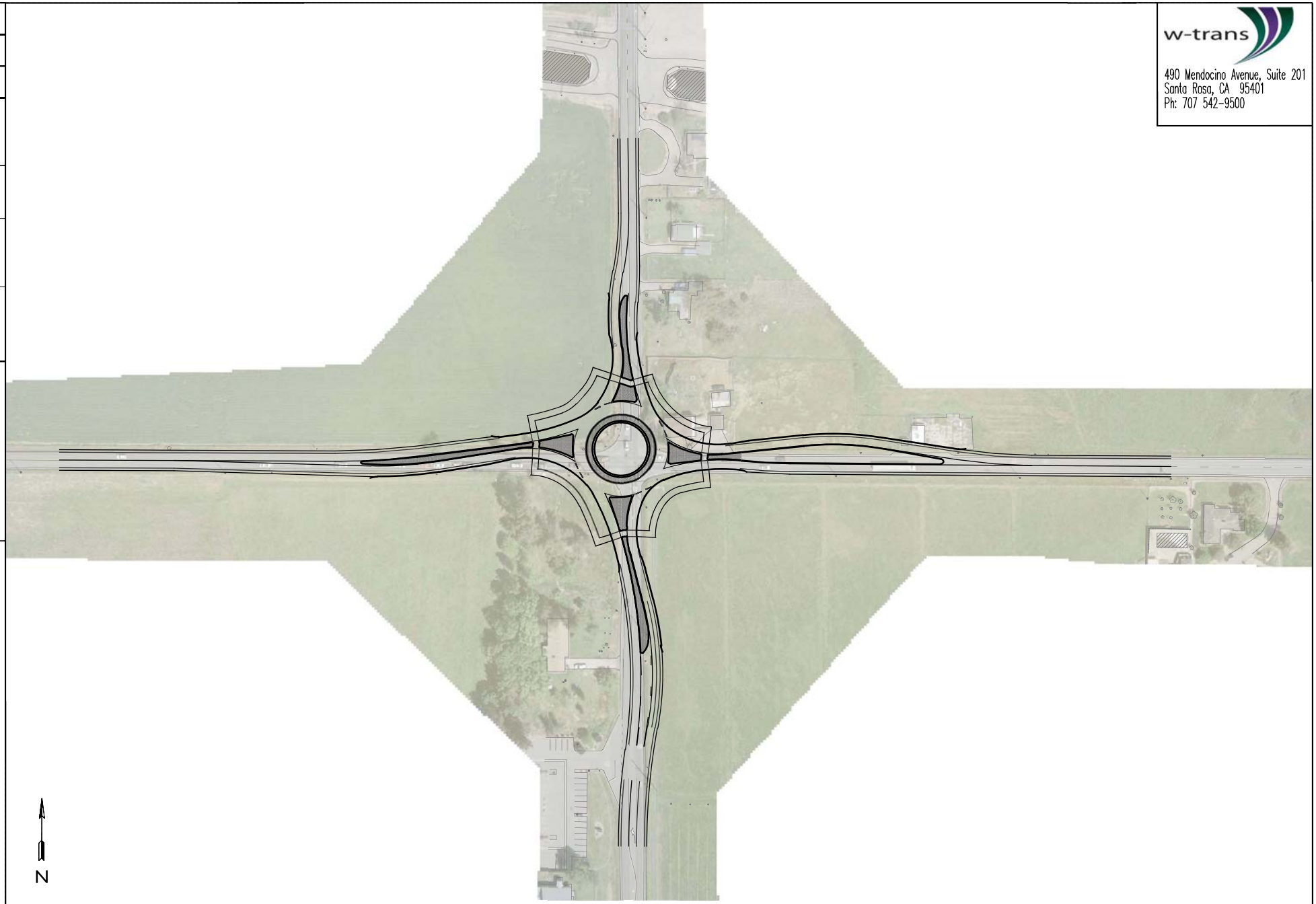
CALCULATED/DESIGNED BY
CHECKED BY

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: LAYOUT 100
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri - 10:27 am

LAST REVISION
6/27/2014



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COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT

	REVISED BY	DATE
CALCULATED/ DESIGNED BY		
CHECKED BY		

N

ROUNDABOUT LAYOUT
1" = 200'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: LAYOUT 200
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri - 10:27 am

LAST REVISION
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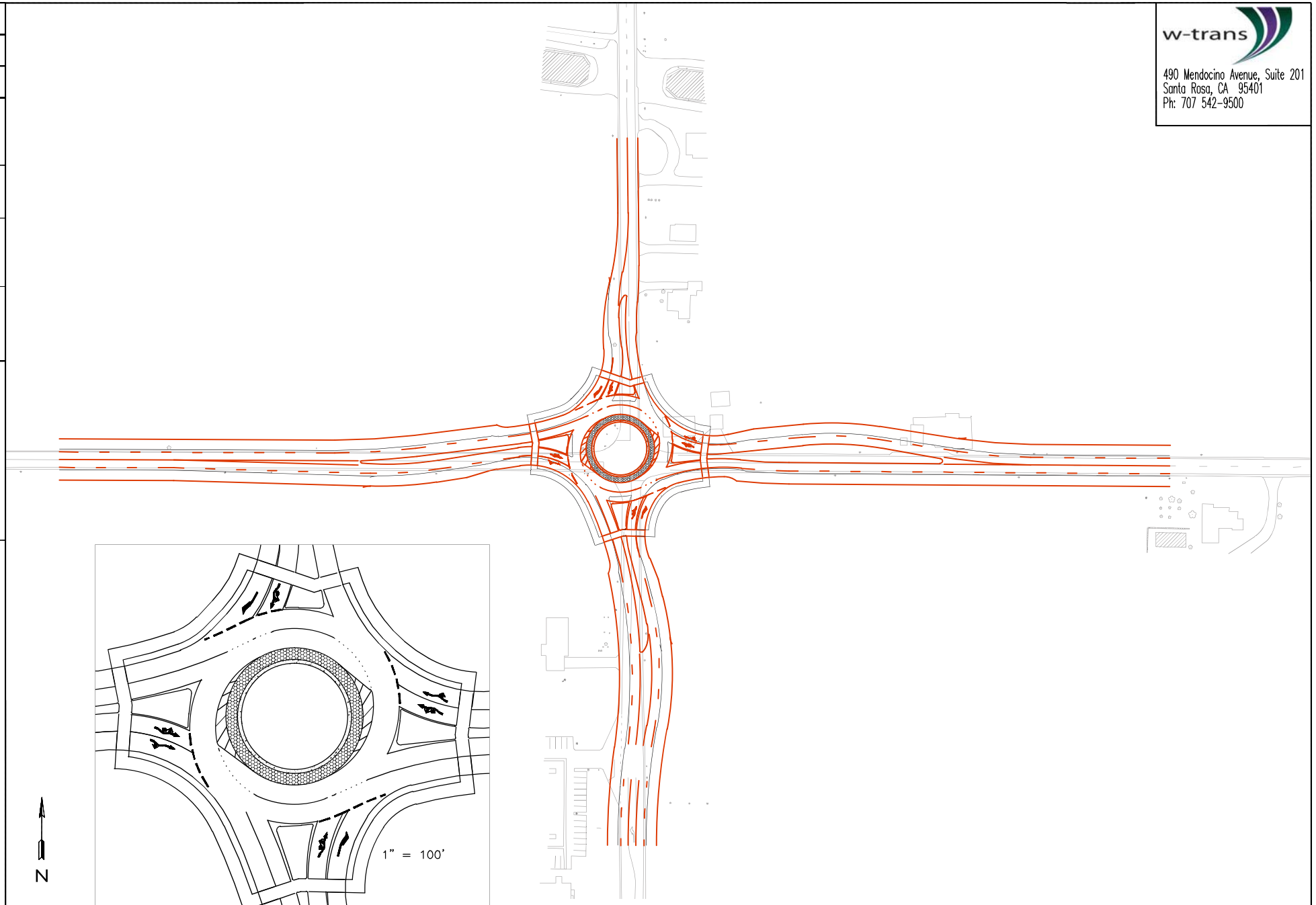
REVISED BY	DATE

CALCULATED/DESIGNED BY

CHECKED BY

COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT



EXPANDED LANE CONFIGURATION

N

FUTURE EXPANSION (YEAR 2026 WITHOUT NCC)
1" = 200'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: EXPANSION
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri - 10:27 am

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Ph: 707 542-9500

R1
21 mph

R3
28 mph

R2
17 mph

R5
21 mph

R5
20 mph

R3
28 mph

R2
17
mph

R4
15 mph

R1
22 mph
L=148

R2
18
mph

R1
23 mph

R5
21 mph

R3
25 mph

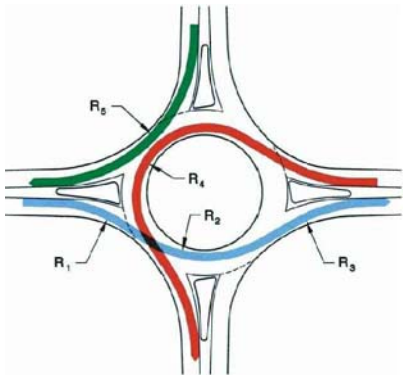
R2
17 mph

R5
19 mph

R1
22 mph

R3
30 mph

N



Source: Roundabouts: An Informational Guide, Second Edition, FHWA, 2010

FASTEST–PATH SPEEDS

1" = 60'

REVISED BY | DATE
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CHECKED BY

COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: SPEEDS
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri - 10:27 am

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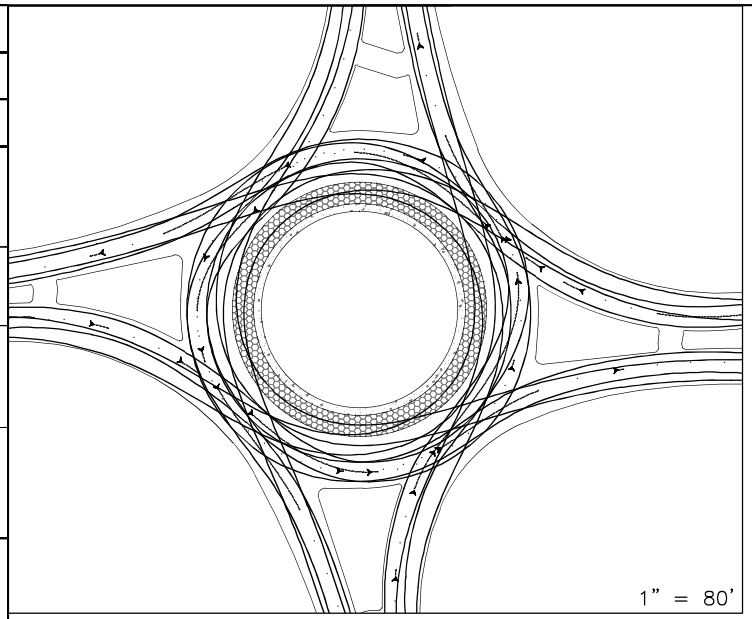

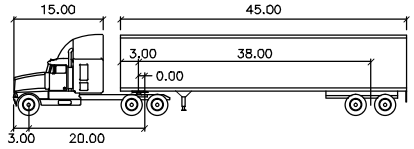

CA LEGAL – 65 Feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

VEHICLE MANEUVERABILITY – LEFT TURNS

1" = 120'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: Trucks LT
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri – 10:27 am

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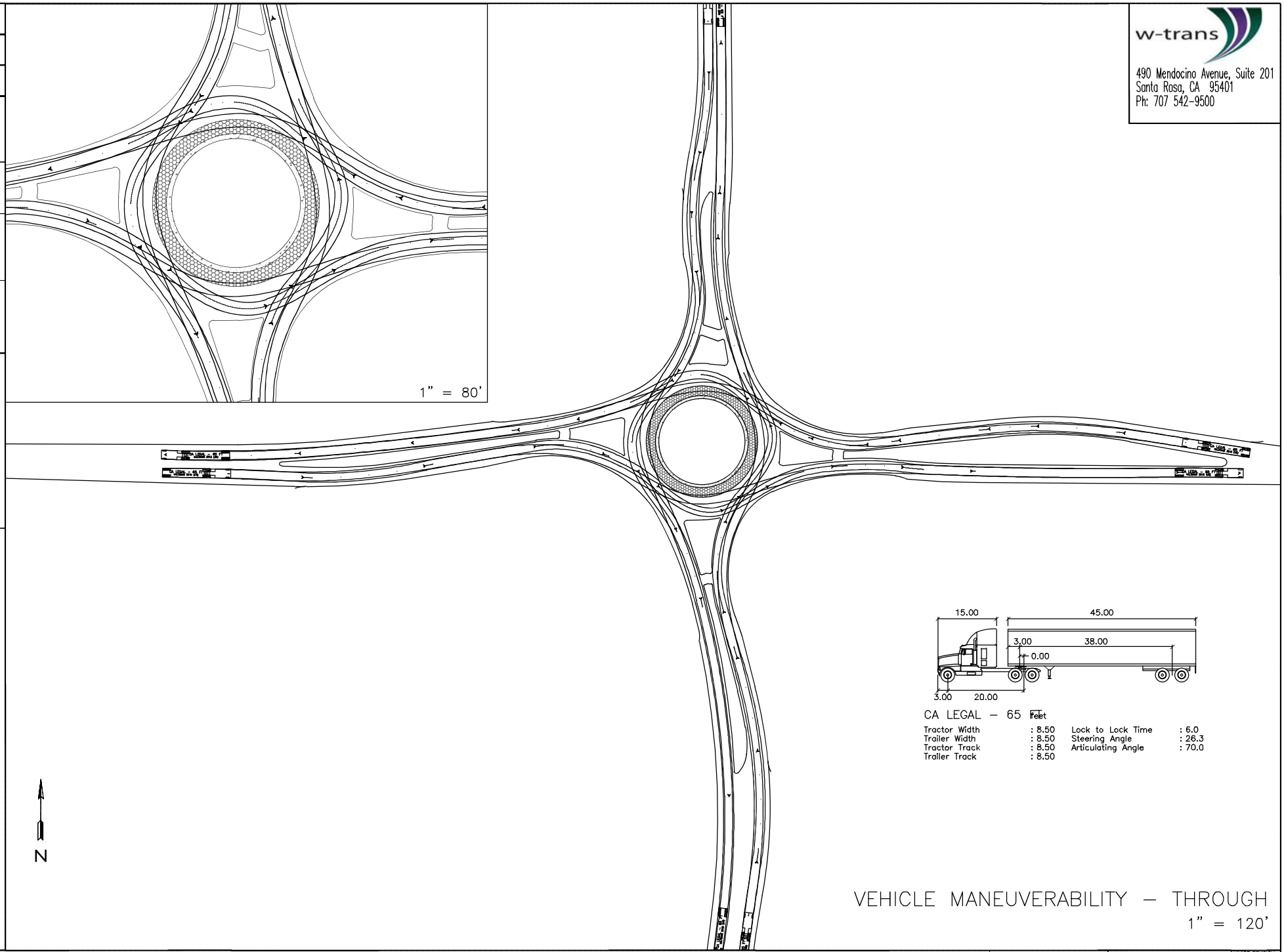
CALCULATED/DESIGNED BY

CHECKED BY

COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT



CA LEGAL – 65 Feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

VEHICLE MANEUVERABILITY – THROUGH

1" = 120'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: Trucks TH
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri – 10:27 am

LAST REVISION
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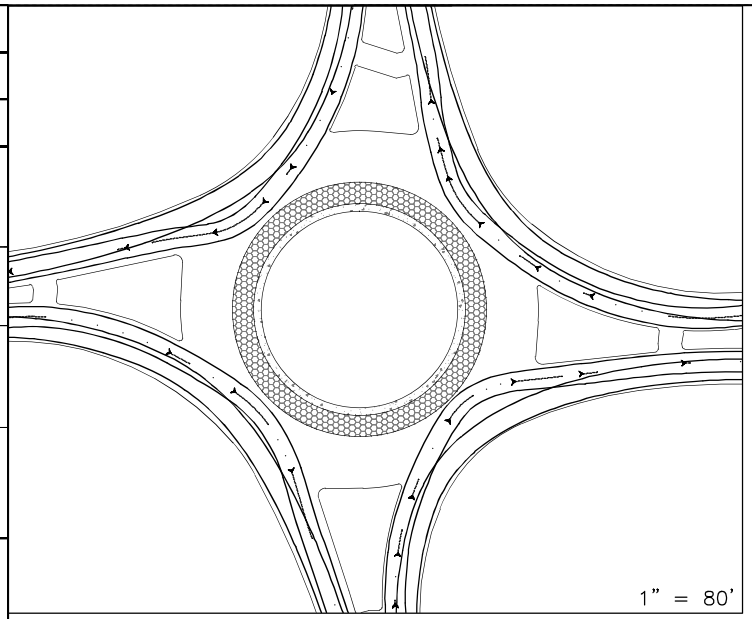

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REVISED BY	DATE

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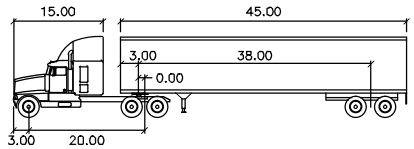
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT



CA LEGAL – 65 Feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

VEHICLE MANEUVERABILITY – RIGHT TURNS

1" = 120'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: Trucks RT
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri – 10:27 am

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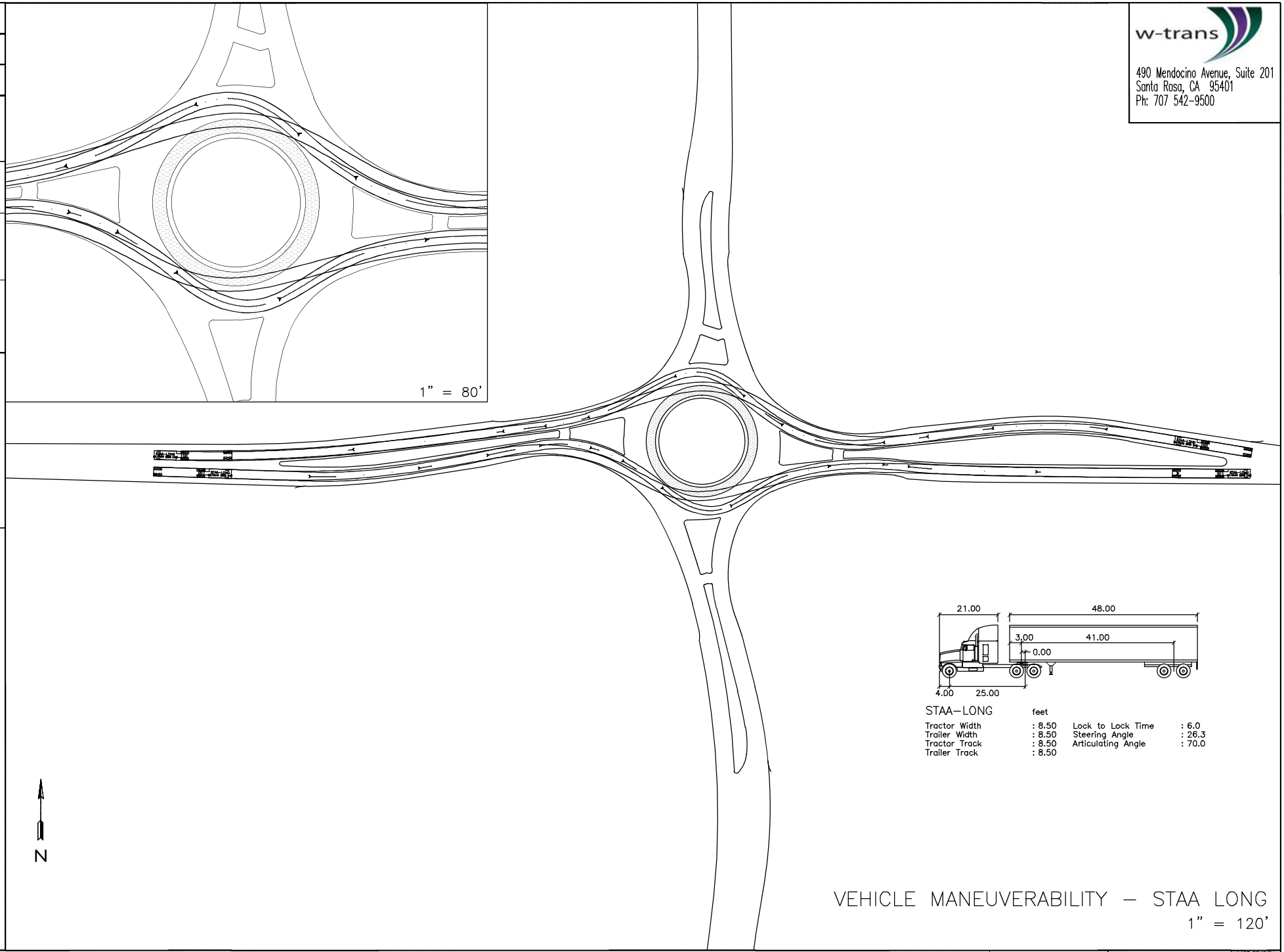

STAA–LONG feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

VEHICLE MANEUVERABILITY – STAA LONG

1" = 120'

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: Trucks STAA-L
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri – 10:27 am

LAST REVISION
6/27/2014

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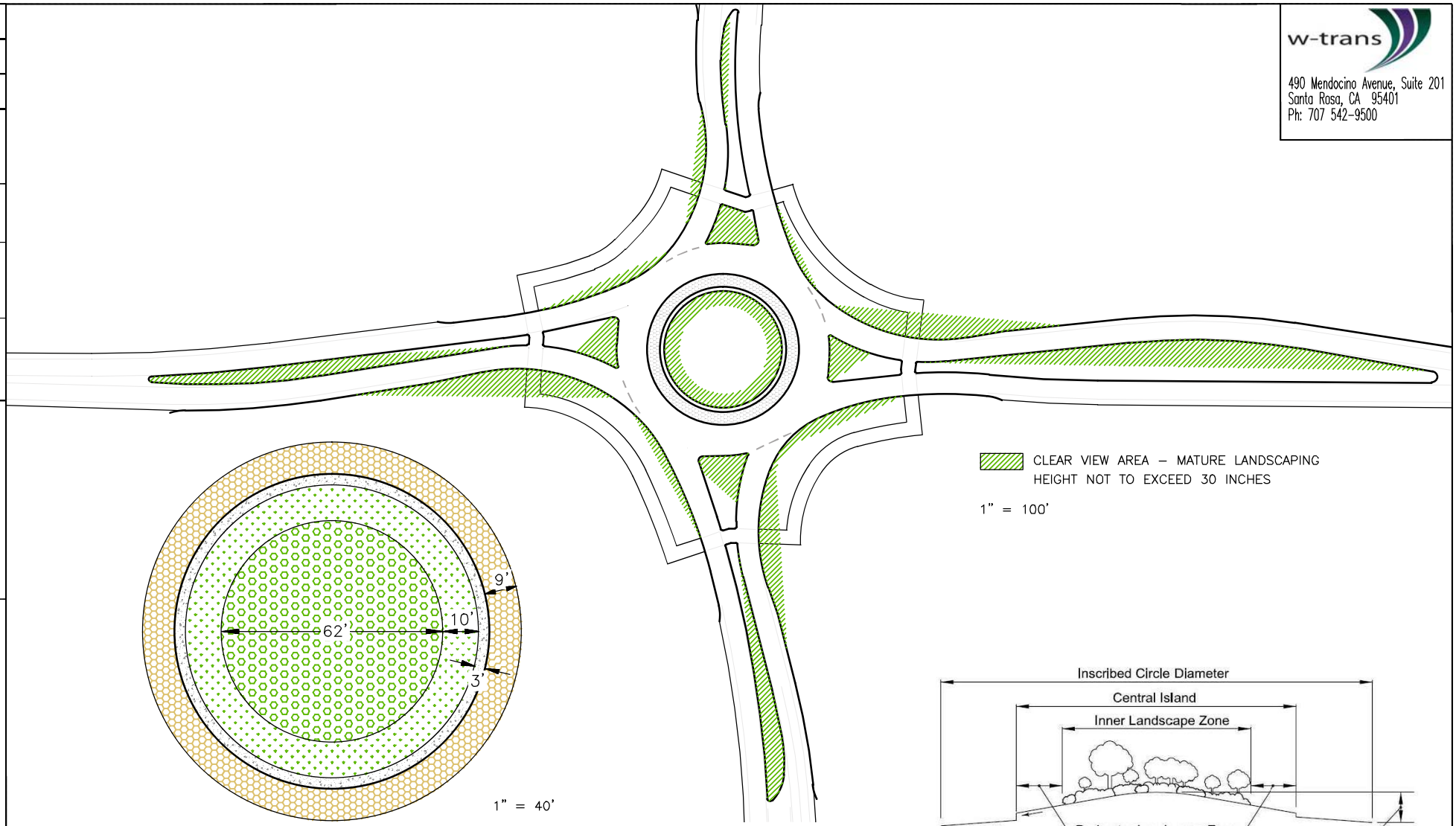
REVISED BY | DATE
CALCULATED/DESIGNED BY | CHECKED BY

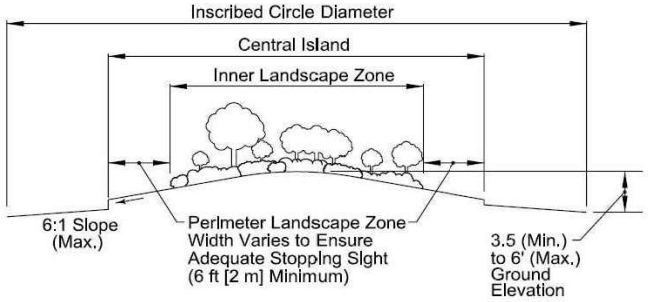
COUNTY OF STANISLAUS
CLARIBEL ROAD/ROSELLE AVENUE ROUNDABOUT



CLEAR VIEW AREA – MATURE LANDSCAPING HEIGHT NOT TO EXCEED 30 INCHES

1" = 100'

1" = 40'



Source: Roundabouts: An Informational Guide, Second Edition, FHWA, 2010

TRUCK APRON – TEXTURED AND COLORED CONCRETE WITH 1 TO 2% SLOPE

LANDSCAPE PAVING OR DRY GROUND COVER – MAXIMUM HEIGHT NOT TO EXCEED 2 FEET ABOVE CIRCULATING ROADWAY; MATERIAL DIFFERS FROM TRUCK APRON OR SIDEWALKS

INTERMEDIATE LANDSCAPING ZONE FREE OF FIXED OBJECTS; MAXIMUM HEIGHT NOT TO EXCEED 2 FEET ABOVE CIRCULATING ROADWAY; MAXIMUM SLOPE 6:1

MINIMUM PEAK GROUND HEIGHT OF 3.5 FT ABOVE CIRCULATING ROADWAY REQUIRED; FIXED OBJECTS INCLUDING LARGE TREES AND MONUMENTS ALLOWED

N

CLEAR VIEW ZONES AND CENTER ISLAND CONFIGURATION

Xrefs:
Path: N:\AAA\SSX\SSX003\ACAD\WT roundabout concepts\

Layout: SIGHT
DWG File: SLR 6-26 design.dwg

Plot Date: Jun 27, 2014
Plot Time: Fri – 10:27 am

LAST REVISION
6/27/2014

Appendix E

Level of Service Analysis

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2014 AM)

AM Peak Hour
Existing (2014) Conditions
Stop (All-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	104	5.0	0.627	19.4	LOS C	3.6	94.4	0.94	1.51	26.5
8	T1	235	5.0	0.627	19.4	LOS C	3.6	94.4	0.94	1.51	26.5
18	R2	17	5.0	0.627	19.4	LOS C	3.6	94.4	0.94	1.51	26.6
Approach		356	5.0	0.627	19.4	LOS C	3.6	94.4	0.94	1.51	26.5
East: WB Claribel Rd											
1	L2	41	8.0	0.728	26.1	LOS D	5.1	136.9	0.99	1.73	24.5
6	T1	283	8.0	0.728	26.1	LOS D	5.1	136.9	0.99	1.73	24.5
16	R2	58	8.0	0.728	26.1	LOS D	5.1	136.9	0.99	1.73	24.6
Approach		382	8.0	0.728	26.1	LOS D	5.1	136.9	0.99	1.73	24.5
North: SB Roselle Ave											
7	L2	54	5.0	0.913	46.4	LOS E	10.7	277.4	1.00	2.35	20.0
4	T1	392	5.0	0.913	46.4	LOS E	10.7	277.4	1.00	2.35	20.1
14	R2	39	5.0	0.913	46.4	LOS E	10.7	277.4	1.00	2.35	20.1
Approach		486	5.0	0.913	46.4	LOS E	10.7	277.4	1.00	2.35	20.1
West: EB Claribel Rd											
5	L2	25	8.0	0.839	40.8	LOS E	7.7	203.7	1.00	2.01	21.0
2	T1	172	8.0	0.839	40.8	LOS E	7.7	203.7	1.00	2.01	21.1
12	R2	180	8.0	0.839	40.8	LOS E	7.7	203.7	1.00	2.01	21.1
Approach		376	8.0	0.839	40.8	LOS E	7.7	203.7	1.00	2.01	21.1
All Vehicles		1600	6.4	0.913	34.2	LOS D	10.7	277.4	0.98	1.93	22.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2014 PM)

PM Peak Hour
Existing (2014) Conditions
Stop (All-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	113	5.0	0.849	39.8	LOS E	8.1	209.7	1.00	2.05	21.3
8	T1	268	5.0	0.849	39.8	LOS E	8.1	209.7	1.00	2.05	21.3
18	R2	29	5.0	0.849	39.8	LOS E	8.1	209.7	1.00	2.05	21.4
Approach		410	5.0	0.849	39.8	LOS E	8.1	209.7	1.00	2.05	21.3
East: WB Claribel Rd											
1	L2	40	8.0	0.891	43.0	LOS E	9.7	259.0	1.00	2.26	20.6
6	T1	352	8.0	0.891	43.0	LOS E	9.7	259.0	1.00	2.26	20.7
16	R2	79	8.0	0.891	43.0	LOS E	9.7	259.0	1.00	2.26	20.7
Approach		472	8.0	0.891	43.0	LOS E	9.7	259.0	1.00	2.26	20.7
North: SB Roselle Ave											
7	L2	78	5.0	0.902	50.0	LOS E	9.8	254.0	1.00	2.23	19.4
4	T1	285	5.0	0.902	50.0	LOS E	9.8	254.0	1.00	2.23	19.4
14	R2	43	5.0	0.902	50.0	LOS E	9.8	254.0	1.00	2.23	19.5
Approach		407	5.0	0.902	50.0	LOS E	9.8	254.0	1.00	2.23	19.4
West: EB Claribel Rd											
5	L2	43	8.0	0.966	58.4	LOS F	13.2	349.9	1.00	2.62	18.0
2	T1	303	8.0	0.966	58.4	LOS F	13.2	349.9	1.00	2.62	18.1
12	R2	145	8.0	0.966	58.4	LOS F	13.2	349.9	1.00	2.62	18.1
Approach		491	8.0	0.966	58.4	LOS F	13.2	349.9	1.00	2.62	18.1
All Vehicles		1780	6.6	0.966	48.1	LOS E	13.2	349.9	1.00	2.30	19.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2016 AM)

AM Peak Hour
Base (2016) Conditions
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	108	5.0	0.698	22.9	LOS C	4.6	120.6	0.97	1.65	25.4
8	T1	247	5.0	0.698	22.9	LOS C	4.6	120.6	0.97	1.65	25.5
18	R2	36	5.0	0.698	22.9	LOS C	4.6	120.6	0.97	1.65	25.6
Approach		391	5.0	0.698	22.9	LOS C	4.6	120.6	0.97	1.65	25.5
East: WB Claribel Rd											
1	L2	63	8.0	0.771	29.1	LOS D	6.0	160.4	1.00	1.84	23.7
6	T1	285	8.0	0.771	29.1	LOS D	6.0	160.4	1.00	1.84	23.7
16	R2	59	8.0	0.771	29.1	LOS D	6.0	160.4	1.00	1.84	23.8
Approach		407	8.0	0.771	29.1	LOS D	6.0	160.4	1.00	1.84	23.7
North: SB Roselle Ave											
7	L2	55	5.0	0.906	45.4	LOS E	10.4	269.6	1.00	2.31	20.2
4	T1	383	5.0	0.906	45.4	LOS E	10.4	269.6	1.00	2.31	20.2
14	R2	42	5.0	0.906	45.4	LOS E	10.4	269.6	1.00	2.31	20.3
Approach		480	5.0	0.906	45.4	LOS E	10.4	269.6	1.00	2.31	20.2
West: EB Claribel Rd											
5	L2	24	8.0	0.852	43.3	LOS E	8.0	212.8	1.00	2.05	20.5
2	T1	180	8.0	0.852	43.3	LOS E	8.0	212.8	1.00	2.05	20.6
12	R2	168	8.0	0.852	43.3	LOS E	8.0	212.8	1.00	2.05	20.6
Approach		373	8.0	0.852	43.3	LOS E	8.0	212.8	1.00	2.05	20.6
All Vehicles		1651	6.4	0.906	35.6	LOS E	10.4	269.6	0.99	1.98	22.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2016 PM)

PM Peak Hour
Base (2016) Conditions
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	126	5.0	0.948	55.5	LOS F	12.1	314.0	1.00	2.48	18.5
8	T1	287	5.0	0.948	55.5	LOS F	12.1	314.0	1.00	2.48	18.5
18	R2	56	5.0	0.948	55.5	LOS F	12.1	314.0	1.00	2.48	18.6
Approach		468	5.0	0.948	55.5	LOS F	12.1	314.0	1.00	2.48	18.5
East: WB Claribel Rd											
1	L2	58	8.0	0.928	49.3	LOS E	11.4	302.7	1.00	2.44	19.5
6	T1	356	8.0	0.928	49.3	LOS E	11.4	302.7	1.00	2.44	19.5
16	R2	78	8.0	0.928	49.3	LOS E	11.4	302.7	1.00	2.44	19.6
Approach		492	8.0	0.928	49.3	LOS E	11.4	302.7	1.00	2.44	19.5
North: SB Roselle Ave											
7	L2	75	5.0	0.875	44.9	LOS E	8.8	229.8	1.00	2.13	20.3
4	T1	283	5.0	0.875	44.9	LOS E	8.8	229.8	1.00	2.13	20.3
14	R2	45	5.0	0.875	44.9	LOS E	8.8	229.8	1.00	2.13	20.4
Approach		403	5.0	0.875	44.9	LOS E	8.8	229.8	1.00	2.13	20.3
West: EB Claribel Rd											
5	L2	44	8.0	0.984	63.5	LOS F	14.0	372.7	1.00	2.70	17.3
2	T1	298	8.0	0.984	63.5	LOS F	14.0	372.7	1.00	2.70	17.3
12	R2	144	8.0	0.984	63.5	LOS F	14.0	372.7	1.00	2.70	17.4
Approach		486	8.0	0.984	63.5	LOS F	14.0	372.7	1.00	2.70	17.3
All Vehicles		1849	6.6	0.984	53.6	LOS F	14.0	372.7	1.00	2.45	18.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	171	160	60	271	56	96	220	32	52	364	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	26	192	58	67	304	63	108	247	36	58	409	45
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	40	423	352	82	374	78	137	545	80	73	506	56
Arrive On Green	0.02	0.24	0.24	0.05	0.27	0.27	0.08	0.35	0.35	0.04	0.32	0.32
Sat Flow, veh/h	1675	1759	1464	1675	1409	292	1723	1541	225	1723	1599	176
Grp Volume(v), veh/h	26	192	58	67	0	367	108	0	283	58	0	454
Grp Sat Flow(s),veh/h/ln	1675	1759	1464	1675	0	1701	1723	0	1766	1723	0	1775
Q Serve(g_s), s	0.9	5.3	1.8	2.3	0.0	11.6	3.5	0.0	7.0	1.9	0.0	13.4
Cycle Q Clear(g_c), s	0.9	5.3	1.8	2.3	0.0	11.6	3.5	0.0	7.0	1.9	0.0	13.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.13	1.00		0.10
Lane Grp Cap(c), veh/h	40	423	352	82	0	452	137	0	625	73	0	562
V/C Ratio(X)	0.66	0.45	0.16	0.82	0.00	0.81	0.79	0.00	0.45	0.80	0.00	0.81
Avail Cap(c_a), veh/h	120	532	443	155	0	551	196	0	701	202	0	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.7	18.5	17.2	26.9	0.0	19.7	25.8	0.0	14.2	27.1	0.0	17.9
Incr Delay (d2), s/veh	16.8	0.8	0.2	17.4	0.0	7.6	12.8	0.0	0.5	17.8	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.6	0.7	1.4	0.0	6.4	2.2	0.0	3.5	1.3	0.0	7.4
LnGrp Delay(d),s/veh	44.5	19.3	17.4	44.4	0.0	27.2	38.6	0.0	14.7	44.9	0.0	23.4
LnGrp LOS	D	B	B	D		C	D		B	D		C
Approach Vol, veh/h		276			434			391			512	
Approach Delay, s/veh		21.3			29.9			21.3			25.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	24.7	7.3	18.2	9.0	22.6	5.9	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.7	22.7	5.3	17.3	6.5	22.9	4.1	18.5
Max Q Clear Time (g_c+I1), s	3.9	9.0	4.3	7.3	5.5	15.4	2.9	13.6
Green Ext Time (p_c), s	0.0	3.8	0.0	2.4	0.0	2.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	283	137	55	338	74	122	278	54	71	269	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	44	298	29	58	356	78	128	293	57	75	283	45
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	59	513	429	71	416	91	162	427	83	94	382	61
Arrive On Green	0.04	0.29	0.29	0.04	0.30	0.30	0.09	0.29	0.29	0.05	0.25	0.25
Sat Flow, veh/h	1675	1759	1470	1675	1394	305	1723	1468	286	1723	1519	242
Grp Volume(v), veh/h	44	298	29	58	0	434	128	0	350	75	0	328
Grp Sat Flow(s),veh/h/ln	1675	1759	1470	1675	0	1699	1723	0	1753	1723	0	1761
Q Serve(g_s), s	1.5	8.1	0.8	1.9	0.0	13.5	4.1	0.0	9.9	2.4	0.0	9.6
Cycle Q Clear(g_c), s	1.5	8.1	0.8	1.9	0.0	13.5	4.1	0.0	9.9	2.4	0.0	9.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.16	1.00		0.14
Lane Grp Cap(c), veh/h	59	513	429	71	0	507	162	0	510	94	0	443
V/C Ratio(X)	0.74	0.58	0.07	0.82	0.00	0.86	0.79	0.00	0.69	0.80	0.00	0.74
Avail Cap(c_a), veh/h	122	568	474	134	0	560	200	0	600	160	0	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	16.9	14.4	26.6	0.0	18.5	24.9	0.0	17.6	26.2	0.0	19.3
Incr Delay (d2), s/veh	16.5	1.2	0.1	19.6	0.0	11.5	15.8	0.0	2.6	14.4	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.1	0.3	1.3	0.0	7.9	2.6	0.0	5.1	1.5	0.0	5.1
LnGrp Delay(d),s/veh	43.3	18.2	14.4	46.3	0.0	30.0	40.7	0.0	20.3	40.6	0.0	23.2
LnGrp LOS	D	B	B	D		C	D		C	D		C
Approach Vol, veh/h		371			492			478			403	
Approach Delay, s/veh		20.9			31.9			25.7			26.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	20.8	6.9	20.9	9.8	18.6	6.5	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.2	19.2	4.5	18.1	6.5	17.9	4.1	18.5
Max Q Clear Time (g_c+I1), s	4.4	11.9	3.9	10.1	6.1	11.6	3.5	15.5
Green Ext Time (p_c), s	0.0	2.4	0.0	2.7	0.0	2.2	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2016 AM)

AM Peak Hour
Base (2016) Conditions
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	108	5.0	0.377	7.4	LOS A	2.0	52.6	0.52	0.41	33.3
8	T1	247	5.0	0.377	7.4	LOS A	2.0	52.6	0.52	0.41	33.2
18	R2	36	5.0	0.377	7.4	LOS A	2.0	52.6	0.52	0.41	32.3
Approach		391	5.0	0.377	7.4	LOS A	2.0	52.6	0.52	0.41	33.1
East: WB Claribel Rd											
1	L2	63	8.0	0.456	9.6	LOS A	2.5	65.8	0.63	0.58	32.5
6	T1	285	8.0	0.456	9.6	LOS A	2.5	65.8	0.63	0.58	32.4
16	R2	59	8.0	0.456	9.6	LOS A	2.5	65.8	0.63	0.58	31.5
Approach		407	8.0	0.456	9.6	LOS A	2.5	65.8	0.63	0.58	32.3
North: SB Roselle Ave											
7	L2	55	5.0	0.572	12.7	LOS B	3.9	102.4	0.74	0.80	31.3
4	T1	383	5.0	0.572	12.7	LOS B	3.9	102.4	0.74	0.80	31.2
14	R2	42	5.0	0.572	12.7	LOS B	3.9	102.4	0.74	0.80	30.4
Approach		480	5.0	0.572	12.7	LOS B	3.9	102.4	0.74	0.80	31.2
West: EB Claribel Rd											
5	L2	24	8.0	0.475	11.0	LOS B	2.6	69.5	0.69	0.73	32.0
2	T1	180	8.0	0.475	11.0	LOS B	2.6	69.5	0.69	0.73	32.0
12	R2	168	8.0	0.475	11.0	LOS B	2.6	69.5	0.69	0.73	31.1
Approach		373	8.0	0.475	11.0	LOS B	2.6	69.5	0.69	0.73	31.6
All Vehicles		1651	6.4	0.572	10.3	LOS B	3.9	102.4	0.65	0.64	32.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2016 PM)

PM Peak Hour
Base (2016) Conditions
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	126	5.0	0.535	11.4	LOS B	3.5	90.8	0.71	0.72	31.5
8	T1	287	5.0	0.535	11.4	LOS B	3.5	90.8	0.71	0.72	31.4
18	R2	56	5.0	0.535	11.4	LOS B	3.5	90.8	0.71	0.72	30.6
Approach		468	5.0	0.535	11.4	LOS B	3.5	90.8	0.71	0.72	31.3
East: WB Claribel Rd											
1	L2	58	8.0	0.597	13.6	LOS B	4.1	110.3	0.75	0.81	30.8
6	T1	356	8.0	0.597	13.6	LOS B	4.1	110.3	0.75	0.81	30.8
16	R2	78	8.0	0.597	13.6	LOS B	4.1	110.3	0.75	0.81	29.9
Approach		492	8.0	0.597	13.6	LOS B	4.1	110.3	0.75	0.81	30.7
North: SB Roselle Ave											
7	L2	75	5.0	0.525	12.4	LOS B	3.2	83.5	0.74	0.80	31.3
4	T1	283	5.0	0.525	12.4	LOS B	3.2	83.5	0.74	0.80	31.2
14	R2	45	5.0	0.525	12.4	LOS B	3.2	83.5	0.74	0.80	30.4
Approach		403	5.0	0.525	12.4	LOS B	3.2	83.5	0.74	0.80	31.1
West: EB Claribel Rd											
5	L2	44	8.0	0.566	12.3	LOS B	3.8	100.4	0.71	0.73	31.4
2	T1	298	8.0	0.566	12.3	LOS B	3.8	100.4	0.71	0.73	31.4
12	R2	144	8.0	0.566	12.3	LOS B	3.8	100.4	0.71	0.73	30.5
Approach		486	8.0	0.566	12.3	LOS B	3.8	100.4	0.71	0.73	31.1
All Vehicles		1849	6.6	0.597	12.5	LOS B	4.1	110.3	0.72	0.77	31.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) with NCC

AM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	118	5.0	0.768	26.2	LOS D	6.0	156.5	0.99	1.83	24.5
8	T1	298	5.0	0.768	26.2	LOS D	6.0	156.5	0.99	1.83	24.6
18	R2	42	5.0	0.768	26.2	LOS D	6.0	156.5	0.99	1.83	24.6
Approach		459	5.0	0.768	26.2	LOS D	6.0	156.5	0.99	1.83	24.6
East: WB Claribel Rd											
1	L2	59	8.0	0.800	31.7	LOS D	6.7	179.2	1.00	1.92	23.0
6	T1	309	8.0	0.800	31.7	LOS D	6.7	179.2	1.00	1.92	23.1
16	R2	55	8.0	0.800	31.7	LOS D	6.7	179.2	1.00	1.92	23.2
Approach		423	8.0	0.800	31.7	LOS D	6.7	179.2	1.00	1.92	23.1
North: SB Roselle Ave											
7	L2	39	5.0	0.874	39.0	LOS E	9.1	237.3	1.00	2.18	21.5
4	T1	416	5.0	0.874	39.0	LOS E	9.1	237.3	1.00	2.18	21.5
14	R2	31	5.0	0.874	39.0	LOS E	9.1	237.3	1.00	2.18	21.6
Approach		485	5.0	0.874	39.0	LOS E	9.1	237.3	1.00	2.18	21.5
West: EB Claribel Rd											
5	L2	32	8.0	0.835	42.2	LOS E	7.4	197.9	1.00	1.98	20.7
2	T1	123	8.0	0.835	42.2	LOS E	7.4	197.9	1.00	1.98	20.8
12	R2	196	8.0	0.835	42.2	LOS E	7.4	197.9	1.00	1.98	20.8
Approach		351	8.0	0.835	42.2	LOS E	7.4	197.9	1.00	1.98	20.8
All Vehicles		1718	6.4	0.874	34.4	LOS D	9.1	237.3	1.00	1.98	22.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) with NCC

PM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	154	5.0	1.072	85.1	LOS F	20.8	539.8	1.00	3.38	14.8
8	T1	378	5.0	1.072	85.1	LOS F	20.8	539.8	1.00	3.38	14.8
18	R2	43	5.0	1.072	85.1	LOS F	20.8	539.8	1.00	3.38	14.9
Approach		575	5.0	1.072	85.1	LOS F	20.8	539.8	1.00	3.38	14.8
East: WB Claribel Rd											
1	L2	95	8.0	0.834	37.0	LOS E	7.6	202.8	1.00	2.02	21.8
6	T1	267	8.0	0.834	37.0	LOS E	7.6	202.8	1.00	2.02	21.9
16	R2	53	8.0	0.834	37.0	LOS E	7.6	202.8	1.00	2.02	21.9
Approach		415	8.0	0.834	37.0	LOS E	7.6	202.8	1.00	2.02	21.9
North: SB Roselle Ave											
7	L2	61	5.0	0.910	49.3	LOS E	10.2	266.5	1.00	2.29	19.5
4	T1	342	5.0	0.910	49.3	LOS E	10.2	266.5	1.00	2.29	19.5
14	R2	33	5.0	0.910	49.3	LOS E	10.2	266.5	1.00	2.29	19.6
Approach		436	5.0	0.910	49.3	LOS E	10.2	266.5	1.00	2.29	19.5
West: EB Claribel Rd											
5	L2	32	8.0	1.290	172.4	LOS F	34.3	913.3	1.00	4.39	9.3
2	T1	334	8.0	1.290	172.4	LOS F	34.3	913.3	1.00	4.39	9.3
12	R2	186	8.0	1.290	172.4	LOS F	34.3	913.3	1.00	4.39	9.4
Approach		552	8.0	1.290	172.4	LOS F	34.3	913.3	1.00	4.39	9.4
All Vehicles		1977	6.5	1.290	91.5	LOS F	34.3	913.3	1.00	3.13	14.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	117	186	56	294	52	109	274	39	37	395	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	32	123	81	59	309	55	115	288	41	39	416	31
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	47	428	357	71	375	67	146	571	81	56	527	39
Arrive On Green	0.03	0.24	0.24	0.04	0.26	0.26	0.08	0.37	0.37	0.03	0.32	0.32
Sat Flow, veh/h	1675	1759	1465	1675	1450	258	1723	1547	220	1723	1662	124
Grp Volume(v), veh/h	32	123	81	59	0	364	115	0	329	39	0	447
Grp Sat Flow(s),veh/h/ln	1675	1759	1465	1675	0	1708	1723	0	1767	1723	0	1785
Q Serve(g_s), s	1.1	3.3	2.6	2.0	0.0	11.6	3.8	0.0	8.3	1.3	0.0	13.1
Cycle Q Clear(g_c), s	1.1	3.3	2.6	2.0	0.0	11.6	3.8	0.0	8.3	1.3	0.0	13.1
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.12	1.00		0.07
Lane Grp Cap(c), veh/h	47	428	357	71	0	441	146	0	652	56	0	566
V/C Ratio(X)	0.69	0.29	0.23	0.83	0.00	0.83	0.79	0.00	0.50	0.70	0.00	0.79
Avail Cap(c_a), veh/h	119	510	424	142	0	519	194	0	776	153	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	17.7	17.5	27.4	0.0	20.1	25.9	0.0	14.1	27.6	0.0	17.9
Incr Delay (d2), s/veh	16.4	0.4	0.3	20.5	0.0	9.2	14.5	0.0	0.6	14.9	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.6	1.1	1.3	0.0	6.6	2.4	0.0	4.1	0.8	0.0	7.1
LnGrp Delay(d),s/veh	44.1	18.1	17.8	47.9	0.0	29.3	40.3	0.0	14.7	42.5	0.0	22.3
LnGrp LOS	D	B	B	D		C	D		B	D		C
Approach Vol, veh/h		236			423			444			486	
Approach Delay, s/veh		21.5			31.9			21.3			23.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	25.8	7.0	18.5	9.4	22.8	6.1	19.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	25.3	4.9	16.7	6.5	23.9	4.1	17.5
Max Q Clear Time (g_c+I1), s	3.3	10.3	4.0	5.3	5.8	15.1	3.1	13.6
Green Ext Time (p_c), s	0.0	4.2	0.0	2.3	0.0	3.1	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	317	177	90	254	50	149	367	42	58	325	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	32	334	71	95	267	53	157	386	44	61	342	33
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	46	423	352	119	404	80	196	548	62	75	444	43
Arrive On Green	0.03	0.24	0.24	0.07	0.28	0.28	0.11	0.34	0.34	0.04	0.27	0.27
Sat Flow, veh/h	1675	1759	1464	1675	1421	282	1723	1593	182	1723	1622	157
Grp Volume(v), veh/h	32	334	71	95	0	320	157	0	430	61	0	375
Grp Sat Flow(s),veh/h/ln	1675	1759	1464	1675	0	1704	1723	0	1774	1723	0	1778
Q Serve(g_s), s	1.1	10.6	2.3	3.3	0.0	9.9	5.3	0.0	12.6	2.1	0.0	11.6
Cycle Q Clear(g_c), s	1.1	10.6	2.3	3.3	0.0	9.9	5.3	0.0	12.6	2.1	0.0	11.6
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	46	423	352	119	0	484	196	0	610	75	0	486
V/C Ratio(X)	0.69	0.79	0.20	0.80	0.00	0.66	0.80	0.00	0.70	0.81	0.00	0.77
Avail Cap(c_a), veh/h	115	485	404	182	0	538	245	0	721	135	0	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	21.3	18.1	27.4	0.0	18.9	25.8	0.0	17.0	28.3	0.0	20.0
Incr Delay (d2), s/veh	16.9	7.6	0.3	13.0	0.0	2.6	13.8	0.0	2.5	18.1	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.0	1.0	2.0	0.0	5.0	3.3	0.0	6.5	1.4	0.0	6.3
LnGrp Delay(d),s/veh	45.7	28.9	18.4	40.4	0.0	21.5	39.7	0.0	19.5	46.5	0.0	24.7
LnGrp LOS	D	C	B	D		C	D		B	D		C
Approach Vol, veh/h		437			415			587			436	
Approach Delay, s/veh		28.4			25.8			24.9			27.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	25.1	8.8	18.9	11.3	20.9	6.1	21.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.7	24.3	6.5	16.5	8.5	20.5	4.1	18.9
Max Q Clear Time (g_c+I1), s	4.1	14.6	5.3	12.6	7.3	13.6	3.1	11.9
Green Ext Time (p_c), s	0.0	3.5	0.0	1.4	0.0	2.7	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) with NCC

AM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	118	5.0	0.412	7.6	LOS A	2.4	62.2	0.48	0.34	33.3
8	T1	298	5.0	0.412	7.6	LOS A	2.4	62.2	0.48	0.34	33.2
18	R2	42	5.0	0.412	7.6	LOS A	2.4	62.2	0.48	0.34	32.3
Approach		459	5.0	0.412	7.6	LOS A	2.4	62.2	0.48	0.34	33.1
East: WB Claribel Rd											
1	L2	59	8.0	0.509	11.3	LOS B	3.0	80.4	0.69	0.71	31.8
6	T1	309	8.0	0.509	11.3	LOS B	3.0	80.4	0.69	0.71	31.7
16	R2	55	8.0	0.509	11.3	LOS B	3.0	80.4	0.69	0.71	30.8
Approach		423	8.0	0.509	11.3	LOS B	3.0	80.4	0.69	0.71	31.6
North: SB Roselle Ave											
7	L2	39	5.0	0.597	13.8	LOS B	4.2	110.4	0.77	0.85	30.9
4	T1	416	5.0	0.597	13.8	LOS B	4.2	110.4	0.77	0.85	30.9
14	R2	31	5.0	0.597	13.8	LOS B	4.2	110.4	0.77	0.85	30.0
Approach		485	5.0	0.597	13.8	LOS B	4.2	110.4	0.77	0.85	30.8
West: EB Claribel Rd											
5	L2	32	8.0	0.452	10.7	LOS B	2.4	63.6	0.68	0.72	32.1
2	T1	123	8.0	0.452	10.7	LOS B	2.4	63.6	0.68	0.72	32.1
12	R2	196	8.0	0.452	10.7	LOS B	2.4	63.6	0.68	0.72	31.2
Approach		351	8.0	0.452	10.7	LOS B	2.4	63.6	0.68	0.72	31.6
All Vehicles		1718	6.4	0.597	10.9	LOS B	4.2	110.4	0.65	0.65	31.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) with NCC

PM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	154	5.0	0.665	15.3	LOS B	5.6	145.0	0.80	0.89	29.9
8	T1	378	5.0	0.665	15.3	LOS B	5.6	145.0	0.80	0.89	29.8
18	R2	43	5.0	0.665	15.3	LOS B	5.6	145.0	0.80	0.89	29.1
Approach		575	5.0	0.665	15.3	LOS B	5.6	145.0	0.80	0.89	29.8
East: WB Claribel Rd											
1	L2	95	8.0	0.563	13.8	LOS B	3.5	93.3	0.75	0.83	30.5
6	T1	267	8.0	0.563	13.8	LOS B	3.5	93.3	0.75	0.83	30.5
16	R2	53	8.0	0.563	13.8	LOS B	3.5	93.3	0.75	0.83	29.6
Approach		415	8.0	0.563	13.8	LOS B	3.5	93.3	0.75	0.83	30.4
North: SB Roselle Ave											
7	L2	61	5.0	0.553	12.8	LOS B	3.6	93.1	0.75	0.82	31.2
4	T1	342	5.0	0.553	12.8	LOS B	3.6	93.1	0.75	0.82	31.1
14	R2	33	5.0	0.553	12.8	LOS B	3.6	93.1	0.75	0.82	30.3
Approach		436	5.0	0.553	12.8	LOS B	3.6	93.1	0.75	0.82	31.1
West: EB Claribel Rd											
5	L2	32	8.0	0.701	18.1	LOS B	5.8	155.2	0.83	0.96	29.2
2	T1	334	8.0	0.701	18.1	LOS B	5.8	155.2	0.83	0.96	29.1
12	R2	186	8.0	0.701	18.1	LOS B	5.8	155.2	0.83	0.96	28.4
Approach		552	8.0	0.701	18.1	LOS B	5.8	155.2	0.83	0.96	28.9
All Vehicles		1977	6.5	0.701	15.2	LOS B	5.8	155.2	0.79	0.88	29.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) without NCC

AM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	118	5.0	1.072	87.1	LOS F	20.1	521.8	1.00	3.29	14.6
8	T1	298	5.0	1.072	87.1	LOS F	20.1	521.8	1.00	3.29	14.6
18	R2	126	5.0	1.072	87.1	LOS F	20.1	521.8	1.00	3.29	14.7
Approach		542	5.0	1.072	87.1	LOS F	20.1	521.8	1.00	3.29	14.6
East: WB Claribel Rd											
1	L2	176	8.0	1.051	76.8	LOS F	19.7	523.0	1.00	3.31	15.7
6	T1	346	8.0	1.051	76.8	LOS F	19.7	523.0	1.00	3.31	15.7
16	R2	73	8.0	1.051	76.8	LOS F	19.7	523.0	1.00	3.31	15.7
Approach		595	8.0	1.051	76.8	LOS F	19.7	523.0	1.00	3.31	15.7
North: SB Roselle Ave											
7	L2	66	5.0	1.055	82.3	LOS F	18.7	484.9	1.00	3.15	15.1
4	T1	398	5.0	1.055	82.3	LOS F	18.7	484.9	1.00	3.15	15.1
14	R2	62	5.0	1.055	82.3	LOS F	18.7	484.9	1.00	3.15	15.2
Approach		526	5.0	1.055	82.3	LOS F	18.7	484.9	1.00	3.15	15.1
West: EB Claribel Rd											
5	L2	32	8.0	1.078	94.3	LOS F	18.9	502.9	1.00	3.15	13.9
2	T1	273	8.0	1.078	94.3	LOS F	18.9	502.9	1.00	3.15	14.0
12	R2	168	8.0	1.078	94.3	LOS F	18.9	502.9	1.00	3.15	14.0
Approach		473	8.0	1.078	94.3	LOS F	18.9	502.9	1.00	3.15	14.0
All Vehicles		2136	6.5	1.078	84.7	LOS F	20.1	523.0	1.00	3.23	14.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) without NCC

PM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	189	5.0	1.490	250.4	LOS F	59.3	1542.7	1.00	6.15	7.0
8	T1	378	5.0	1.490	250.4	LOS F	59.3	1542.7	1.00	6.15	7.0
18	R2	189	5.0	1.490	250.4	LOS F	59.3	1542.7	1.00	6.15	7.0
Approach		756	5.0	1.490	250.4	LOS F	59.3	1542.7	1.00	6.15	7.0
East: WB Claribel Rd											
1	L2	153	8.0	1.213	134.2	LOS F	34.0	905.2	1.00	4.59	11.1
6	T1	429	8.0	1.213	134.2	LOS F	34.0	905.2	1.00	4.59	11.1
16	R2	84	8.0	1.213	134.2	LOS F	34.0	905.2	1.00	4.59	11.2
Approach		666	8.0	1.213	134.2	LOS F	34.0	905.2	1.00	4.59	11.1
North: SB Roselle Ave											
7	L2	71	5.0	0.965	61.1	LOS F	12.7	330.0	1.00	2.54	17.7
4	T1	320	5.0	0.965	61.1	LOS F	12.7	330.0	1.00	2.54	17.7
14	R2	60	5.0	0.965	61.1	LOS F	12.7	330.0	1.00	2.54	17.7
Approach		451	5.0	0.965	61.1	LOS F	12.7	330.0	1.00	2.54	17.7
West: EB Claribel Rd											
5	L2	63	8.0	1.300	173.2	LOS F	38.1	1013.0	1.00	4.76	9.3
2	T1	365	8.0	1.300	173.2	LOS F	38.1	1013.0	1.00	4.76	9.3
12	R2	186	8.0	1.300	173.2	LOS F	38.1	1013.0	1.00	4.76	9.3
Approach		615	8.0	1.300	173.2	LOS F	38.1	1013.0	1.00	4.76	9.3
All Vehicles		2487	6.5	1.490	165.9	LOS F	59.3	1542.7	1.00	4.74	9.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	259	160	167	329	69	109	274	116	63	378	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	33	282	56	182	358	75	118	298	126	68	411	64
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	46	365	302	220	438	92	148	422	178	86	479	75
Arrive On Green	0.03	0.21	0.21	0.13	0.31	0.31	0.09	0.35	0.35	0.05	0.31	0.31
Sat Flow, veh/h	1675	1759	1459	1675	1407	295	1723	1203	508	1723	1526	238
Grp Volume(v), veh/h	33	282	56	182	0	433	118	0	424	68	0	475
Grp Sat Flow(s),veh/h/ln	1675	1759	1459	1675	0	1702	1723	0	1711	1723	0	1763
Q Serve(g_s), s	1.3	10.4	2.2	7.3	0.0	16.2	4.6	0.0	14.8	2.7	0.0	17.4
Cycle Q Clear(g_c), s	1.3	10.4	2.2	7.3	0.0	16.2	4.6	0.0	14.8	2.7	0.0	17.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.30	1.00		0.13
Lane Grp Cap(c), veh/h	46	365	302	220	0	530	148	0	600	86	0	554
V/C Ratio(X)	0.72	0.77	0.19	0.83	0.00	0.82	0.79	0.00	0.71	0.80	0.00	0.86
Avail Cap(c_a), veh/h	100	411	341	255	0	555	162	0	623	132	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.3	25.8	22.5	29.2	0.0	21.9	30.9	0.0	19.3	32.4	0.0	22.2
Incr Delay (d2), s/veh	19.4	7.9	0.3	17.5	0.0	8.9	21.7	0.0	3.5	16.5	0.0	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.8	0.9	4.5	0.0	8.9	3.1	0.0	7.5	1.7	0.0	10.1
LnGrp Delay(d),s/veh	52.7	33.8	22.8	46.6	0.0	30.9	52.6	0.0	22.8	48.9	0.0	33.1
LnGrp LOS	D	C	C	D		C	D		C	D		C
Approach Vol, veh/h		371			615			542			543	
Approach Delay, s/veh		33.8			35.5			29.3			35.1	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	28.7	13.6	18.8	10.4	26.2	6.4	26.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.3	25.1	10.5	16.1	6.5	23.9	4.1	22.5
Max Q Clear Time (g_c+I1), s	4.7	16.8	9.3	12.4	6.6	19.4	3.3	18.2
Green Ext Time (p_c), s	0.0	3.6	0.1	1.5	0.0	2.2	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	347	177	145	408	80	183	367	183	67	304	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	62	358	0	149	421	82	189	378	189	69	313	59
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	78	458	389	180	458	89	223	419	210	87	430	81
Arrive On Green	0.05	0.26	0.00	0.11	0.32	0.32	0.13	0.37	0.37	0.05	0.29	0.29
Sat Flow, veh/h	1675	1759	1495	1675	1427	278	1723	1134	567	1723	1476	278
Grp Volume(v), veh/h	62	358	0	149	0	503	189	0	567	69	0	372
Grp Sat Flow(s),veh/h/ln	1675	1759	1495	1675	0	1705	1723	0	1700	1723	0	1755
Q Serve(g_s), s	3.1	16.1	0.0	7.4	0.0	24.1	9.1	0.0	26.8	3.4	0.0	16.2
Cycle Q Clear(g_c), s	3.1	16.1	0.0	7.4	0.0	24.1	9.1	0.0	26.8	3.4	0.0	16.2
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.33	1.00		0.16
Lane Grp Cap(c), veh/h	78	458	389	180	0	548	223	0	629	87	0	511
V/C Ratio(X)	0.80	0.78	0.00	0.83	0.00	0.92	0.85	0.00	0.90	0.79	0.00	0.73
Avail Cap(c_a), veh/h	91	489	415	187	0	572	233	0	680	99	0	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.1	29.2	0.0	37.2	0.0	27.8	36.2	0.0	25.3	39.9	0.0	27.1
Incr Delay (d2), s/veh	34.0	7.6	0.0	24.8	0.0	19.5	23.4	0.0	14.6	30.4	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.7	0.0	4.7	0.0	14.3	5.8	0.0	15.0	2.3	0.0	8.5
LnGrp Delay(d),s/veh	74.1	36.8	0.0	61.9	0.0	47.3	59.6	0.0	39.9	70.3	0.0	31.3
LnGrp LOS	E	D		E		D	E		D	E		C
Approach Vol, veh/h		420			652			756			441	
Approach Delay, s/veh		42.3			50.7			44.8			37.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	35.9	13.6	26.6	15.5	29.2	8.4	31.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.9	34.0	9.5	23.6	11.5	27.4	4.6	28.5
Max Q Clear Time (g_c+I1), s	5.4	28.8	9.4	18.1	11.1	18.2	5.1	26.1
Green Ext Time (p_c), s	0.0	2.6	0.0	2.4	0.0	4.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) no NCC

AM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	118	5.0	0.590	12.3	LOS B	4.4	113.4	0.72	0.73	31.2
8	T1	298	5.0	0.590	12.3	LOS B	4.4	113.4	0.72	0.73	31.1
18	R2	126	5.0	0.590	12.3	LOS B	4.4	113.4	0.72	0.73	30.3
Approach		542	5.0	0.590	12.3	LOS B	4.4	113.4	0.72	0.73	31.0
East: WB Claribel Rd											
1	L2	176	8.0	0.716	18.0	LOS B	6.4	169.7	0.83	0.96	28.8
6	T1	346	8.0	0.716	18.0	LOS B	6.4	169.7	0.83	0.96	28.7
16	R2	73	8.0	0.716	18.0	LOS B	6.4	169.7	0.83	0.96	28.0
Approach		595	8.0	0.716	18.0	LOS B	6.4	169.7	0.83	0.96	28.6
North: SB Roselle Ave											
7	L2	66	5.0	0.765	24.0	LOS C	6.9	178.6	0.90	1.11	27.1
4	T1	398	5.0	0.765	24.0	LOS C	6.9	178.6	0.90	1.11	27.0
14	R2	62	5.0	0.765	24.0	LOS C	6.9	178.6	0.90	1.11	26.4
Approach		526	5.0	0.765	24.0	LOS C	6.9	178.6	0.90	1.11	27.0
West: EB Claribel Rd											
5	L2	32	8.0	0.699	20.2	LOS C	5.3	140.1	0.84	1.00	28.4
2	T1	273	8.0	0.699	20.2	LOS C	5.3	140.1	0.84	1.00	28.3
12	R2	168	8.0	0.699	20.2	LOS C	5.3	140.1	0.84	1.00	27.6
Approach		473	8.0	0.699	20.2	LOS C	5.3	140.1	0.84	1.00	28.1
All Vehicles		2136	6.5	0.765	18.5	LOS B	6.9	178.6	0.82	0.95	28.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) no NCC

PM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.2
8	T1	378	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.1
18	R2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	21.7
Approach		756	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.0
East: WB Claribel Rd											
1	L2	153	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.2
6	T1	429	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.2
16	R2	84	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	19.8
Approach		666	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.1
North: SB Roselle Ave											
7	L2	71	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.5
4	T1	320	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
14	R2	60	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	25.8
Approach		451	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
West: EB Claribel Rd											
5	L2	63	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	26.1
2	T1	365	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	26.1
12	R2	186	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	25.5
Approach		615	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	25.9
All Vehicles		2487	6.5	0.972	38.0	LOS D	18.0	479.9	0.96	1.42	23.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	134	5.0	0.935	45.9	LOS E	12.3	319.6	1.00	2.54	20.1
8	T1	371	5.0	0.935	45.9	LOS E	12.3	319.6	1.00	2.54	20.1
18	R2	72	5.0	0.935	45.9	LOS E	12.3	319.6	1.00	2.54	20.2
Approach		577	5.0	0.935	45.9	LOS E	12.3	319.6	1.00	2.54	20.1
East: WB Claribel Rd											
1	L2	84	8.0	0.908	44.9	LOS E	10.5	280.4	1.00	2.35	20.2
6	T1	358	8.0	0.908	44.9	LOS E	10.5	280.4	1.00	2.35	20.3
16	R2	53	8.0	0.908	44.9	LOS E	10.5	280.4	1.00	2.35	20.3
Approach		495	8.0	0.908	44.9	LOS E	10.5	280.4	1.00	2.35	20.3
North: SB Roselle Ave											
7	L2	21	5.0	0.891	41.0	LOS E	9.9	257.0	1.00	2.27	21.1
4	T1	463	5.0	0.891	41.0	LOS E	9.9	257.0	1.00	2.27	21.1
14	R2	21	5.0	0.891	41.0	LOS E	9.9	257.0	1.00	2.27	21.2
Approach		505	5.0	0.891	41.0	LOS E	9.9	257.0	1.00	2.27	21.1
West: EB Claribel Rd											
5	L2	42	8.0	0.868	48.5	LOS E	8.3	221.5	1.00	2.07	19.6
2	T1	74	8.0	0.868	48.5	LOS E	8.3	221.5	1.00	2.07	19.6
12	R2	232	8.0	0.868	48.5	LOS E	8.3	221.5	1.00	2.07	19.7
Approach		347	8.0	0.868	48.5	LOS E	8.3	221.5	1.00	2.07	19.6
All Vehicles		1925	6.3	0.935	44.8	LOS E	12.3	319.6	1.00	2.33	20.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	206	5.0	1.366	194.4	LOS F	52.5	1365.1	1.00	5.96	8.5
8	T1	526	5.0	1.366	194.4	LOS F	52.5	1365.1	1.00	5.96	8.6
18	R2	62	5.0	1.366	194.4	LOS F	52.5	1365.1	1.00	5.96	8.6
Approach		794	5.0	1.366	194.4	LOS F	52.5	1365.1	1.00	5.96	8.6
East: WB Claribel Rd											
1	L2	168	8.0	0.763	31.4	LOS D	5.8	154.6	1.00	1.81	23.1
6	T1	168	8.0	0.763	31.4	LOS D	5.8	154.6	1.00	1.81	23.1
16	R2	21	8.0	0.763	31.4	LOS D	5.8	154.6	1.00	1.81	23.2
Approach		358	8.0	0.763	31.4	LOS D	5.8	154.6	1.00	1.81	23.1
North: SB Roselle Ave											
7	L2	42	5.0	0.991	64.8	LOS F	14.5	376.4	1.00	2.73	17.2
4	T1	432	5.0	0.991	64.8	LOS F	14.5	376.4	1.00	2.73	17.2
14	R2	21	5.0	0.991	64.8	LOS F	14.5	376.4	1.00	2.73	17.2
Approach		495	5.0	0.991	64.8	LOS F	14.5	376.4	1.00	2.73	17.2
West: EB Claribel Rd											
5	L2	21	8.0	2.100	529.8	LOS F	80.7	2146.0	1.00	6.01	3.7
2	T1	400	8.0	2.100	529.8	LOS F	80.7	2146.0	1.00	6.01	3.7
12	R2	253	8.0	2.100	529.8	LOS F	80.7	2146.0	1.00	6.01	3.7
Approach		674	8.0	2.100	529.8	LOS F	80.7	2146.0	1.00	6.01	3.7
All Vehicles		2320	6.3	2.100	239.0	LOS F	80.7	2146.0	1.00	4.65	7.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	70	220	80	340	50	130	360	70	20	440	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	42	74	117	84	358	53	137	379	74	21	463	21
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	54	428	357	106	410	61	172	605	118	33	570	26
Arrive On Green	0.03	0.24	0.24	0.06	0.27	0.27	0.10	0.41	0.41	0.02	0.33	0.33
Sat Flow, veh/h	1675	1759	1465	1675	1494	221	1723	1468	287	1723	1717	78
Grp Volume(v), veh/h	42	74	117	84	0	411	137	0	453	21	0	484
Grp Sat Flow(s),veh/h/ln	1675	1759	1465	1675	0	1715	1723	0	1755	1723	0	1794
Q Serve(g_s), s	1.7	2.3	4.5	3.4	0.0	15.7	5.3	0.0	14.1	0.8	0.0	17.0
Cycle Q Clear(g_c), s	1.7	2.3	4.5	3.4	0.0	15.7	5.3	0.0	14.1	0.8	0.0	17.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.16	1.00		0.04
Lane Grp Cap(c), veh/h	54	428	357	106	0	471	172	0	724	33	0	596
V/C Ratio(X)	0.78	0.17	0.33	0.80	0.00	0.87	0.80	0.00	0.63	0.63	0.00	0.81
Avail Cap(c_a), veh/h	100	469	390	178	0	537	213	0	827	100	0	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.0	20.5	21.4	31.8	0.0	23.8	30.3	0.0	16.0	33.5	0.0	21.0
Incr Delay (d2), s/veh	21.2	0.2	0.5	12.6	0.0	13.5	15.6	0.0	1.2	18.3	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	1.9	1.9	0.0	9.2	3.3	0.0	7.0	0.6	0.0	9.3
LnGrp Delay(d),s/veh	54.2	20.7	21.9	44.3	0.0	37.3	45.9	0.0	17.2	51.8	0.0	26.8
LnGrp LOS	D	C	C	D		D	D		B	D		C
Approach Vol, veh/h		233			495			590			505	
Approach Delay, s/veh		27.4			38.5			23.9			27.8	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	32.8	8.8	21.2	11.3	27.3	6.7	23.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.0	32.4	7.3	18.3	8.5	27.9	4.1	21.5
Max Q Clear Time (g_c+I1), s	2.8	16.1	5.4	6.5	7.3	19.0	3.7	17.7
Green Ext Time (p_c), s	0.0	5.5	0.0	2.5	0.0	3.9	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	380	240	160	160	20	200	510	60	40	410	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	21	400	138	168	168	21	211	537	63	42	432	21
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	31	436	363	199	534	67	244	632	74	52	490	24
Arrive On Green	0.02	0.25	0.25	0.12	0.35	0.35	0.14	0.40	0.40	0.03	0.29	0.29
Sat Flow, veh/h	1675	1759	1465	1675	1531	191	1723	1588	186	1723	1710	83
Grp Volume(v), veh/h	21	400	138	168	0	189	211	0	600	42	0	453
Grp Sat Flow(s),veh/h/ln	1675	1759	1465	1675	0	1722	1723	0	1774	1723	0	1793
Q Serve(g_s), s	1.1	19.4	6.9	8.6	0.0	7.0	10.5	0.0	27.0	2.1	0.0	21.2
Cycle Q Clear(g_c), s	1.1	19.4	6.9	8.6	0.0	7.0	10.5	0.0	27.0	2.1	0.0	21.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.10	1.00		0.05
Lane Grp Cap(c), veh/h	31	436	363	199	0	600	244	0	706	52	0	513
V/C Ratio(X)	0.69	0.92	0.38	0.84	0.00	0.31	0.86	0.00	0.85	0.81	0.00	0.88
Avail Cap(c_a), veh/h	107	451	376	200	0	600	245	0	706	81	0	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.8	32.1	27.4	37.9	0.0	20.9	36.8	0.0	24.0	42.3	0.0	29.9
Incr Delay (d2), s/veh	23.8	23.2	0.7	26.3	0.0	0.3	25.7	0.0	9.7	27.7	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.3	2.8	5.4	0.0	3.4	6.7	0.0	15.1	1.4	0.0	12.6
LnGrp Delay(d),s/veh	66.6	55.3	28.1	64.2	0.0	21.2	62.6	0.0	33.7	70.1	0.0	45.1
LnGrp LOS	E	E	C	E		C	E		C	E		D
Approach Vol, veh/h		559			357			811			495	
Approach Delay, s/veh		49.0			41.4			41.2			47.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	39.4	14.9	26.3	16.9	29.6	6.1	35.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.1	34.9	10.5	22.5	12.5	26.5	5.6	27.4
Max Q Clear Time (g_c+I1), s	4.1	29.0	10.6	21.4	12.5	23.2	3.1	9.0
Green Ext Time (p_c), s	0.0	3.2	0.0	0.3	0.0	2.0	0.0	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	134	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	33.0
8	T1	371	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.9
18	R2	72	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.0
Approach		577	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.8
East: WB Claribel Rd											
1	L2	84	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.4
6	T1	358	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.4
16	R2	53	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	28.6
Approach		495	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.3
North: SB Roselle Ave											
7	L2	21	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
4	T1	463	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
14	R2	21	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	28.5
Approach		505	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
West: EB Claribel Rd											
5	L2	42	8.0	0.475	11.7	LOS B	2.6	68.2	0.71	0.76	31.6
2	T1	74	8.0	0.475	11.7	LOS B	2.6	68.2	0.71	0.76	31.6
12	R2	232	8.0	0.475	11.7	LOS B	2.6	68.2	0.71	0.76	30.7
Approach		347	8.0	0.475	11.7	LOS B	2.6	68.2	0.71	0.76	31.0
All Vehicles		1925	6.3	0.685	13.8	LOS B	5.4	141.2	0.69	0.72	30.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	206	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.9
8	T1	526	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.9
18	R2	62	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.5
Approach		794	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.9
East: WB Claribel Rd											
1	L2	168	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.7
6	T1	168	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.7
16	R2	21	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.0
Approach		358	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.7
North: SB Roselle Ave											
7	L2	42	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	30.0
4	T1	432	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.9
14	R2	21	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.1
Approach		495	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.9
West: EB Claribel Rd											
5	L2	21	8.0	0.998	58.8	LOS E	20.9	556.3	1.00	1.85	19.1
2	T1	400	8.0	0.998	58.8	LOS E	20.9	556.3	1.00	1.85	19.1
12	R2	253	8.0	0.998	58.8	LOS E	20.9	556.3	1.00	1.85	18.8
Approach		674	8.0	0.998	58.8	LOS E	20.9	556.3	1.00	1.85	19.0
All Vehicles		2320	6.3	0.998	38.0	LOS D	20.9	556.3	0.93	1.41	23.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	134	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	33.0
8	T1	371	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.9
18	R2	72	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.0
Approach		577	5.0	0.488	8.4	LOS A	3.3	84.6	0.45	0.29	32.8
East: WB Claribel Rd											
1	L2	84	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.4
6	T1	358	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.4
16	R2	53	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	28.6
Approach		495	8.0	0.661	17.0	LOS B	4.9	131.0	0.81	0.93	29.3
North: SB Roselle Ave											
7	L2	21	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
4	T1	463	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
14	R2	21	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	28.5
Approach		505	5.0	0.685	18.2	LOS B	5.4	141.2	0.84	0.98	29.2
West: EB Claribel Rd											
5	L2	42	8.0	0.159	6.7	LOS A	0.6	16.5	0.59	0.55	33.3
2	T1	74	8.0	0.159	6.7	LOS A	0.6	16.5	0.59	0.55	33.3
12	R2	232	8.0	0.318	8.8	LOS A	1.4	36.2	0.64	0.64	32.0
Approach		347	8.0	0.318	8.1	LOS A	1.4	36.2	0.62	0.61	32.5
All Vehicles		1925	6.3	0.685	13.1	LOS B	5.4	141.2	0.68	0.69	30.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	206	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.9
8	T1	526	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.8
18	R2	62	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.4
Approach		794	5.0	0.955	43.2	LOS D	19.9	518.2	1.00	1.57	21.8
East: WB Claribel Rd											
1	L2	168	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.6
6	T1	168	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.6
16	R2	21	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	27.9
Approach		358	8.0	0.593	17.2	LOS B	3.5	93.5	0.79	0.91	28.6
North: SB Roselle Ave											
7	L2	42	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.9
4	T1	432	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.9
14	R2	21	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.1
Approach		495	5.0	0.645	16.1	LOS B	4.9	126.3	0.81	0.92	29.8
West: EB Claribel Rd											
5	L2	21	8.0	0.626	17.0	LOS B	4.1	109.4	0.80	0.91	29.5
2	T1	400	8.0	0.626	17.0	LOS B	4.1	109.4	0.80	0.91	29.6
12	R2	253	8.0	0.375	10.4	LOS B	1.7	45.3	0.69	0.71	31.2
Approach		674	8.0	0.626	14.5	LOS B	4.1	109.4	0.76	0.84	30.1
All Vehicles		2320	6.3	0.955	25.1	LOS C	19.9	518.2	0.86	1.12	26.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Expanded
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	134	5.0	0.373	6.1	LOS A	2.2	56.9	0.37	0.22	33.9
8	T1	371	5.0	0.373	6.1	LOS A	2.2	56.9	0.37	0.22	33.9
18	R2	72	5.0	0.054	3.1	LOS A	0.3	6.6	0.30	0.14	35.0
Approach		577	5.0	0.373	5.7	LOS A	2.2	56.9	0.36	0.21	34.0
East: WB Claribel Rd											
1	L2	84	8.0	0.332	8.9	LOS A	1.4	38.4	0.64	0.64	32.3
6	T1	358	8.0	0.332	8.9	LOS A	1.4	38.4	0.64	0.64	32.8
16	R2	53	8.0	0.332	8.9	LOS A	1.4	38.4	0.64	0.64	32.1
Approach		495	8.0	0.332	8.9	LOS A	1.4	38.4	0.64	0.64	32.6
North: SB Roselle Ave											
7	L2	21	5.0	0.544	11.5	LOS B	3.5	91.4	0.75	0.81	32.0
4	T1	463	5.0	0.544	11.5	LOS B	3.5	91.4	0.75	0.81	31.9
14	R2	21	5.0	0.025	4.5	LOS A	0.1	2.7	0.58	0.43	34.2
Approach		505	5.0	0.544	11.2	LOS B	3.5	91.4	0.74	0.80	32.0
West: EB Claribel Rd											
5	L2	42	8.0	0.159	6.7	LOS A	0.6	16.5	0.59	0.55	33.3
2	T1	74	8.0	0.159	6.7	LOS A	0.6	16.5	0.59	0.55	33.3
12	R2	232	8.0	0.318	8.8	LOS A	1.4	36.2	0.64	0.64	31.9
Approach		347	8.0	0.318	8.1	LOS A	1.4	36.2	0.62	0.61	32.4
All Vehicles		1925	6.3	0.544	8.4	LOS A	3.5	91.4	0.58	0.55	32.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Expanded
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	206	5.0	0.739	16.9	LOS B	7.5	196.0	0.87	0.99	29.3
8	T1	526	5.0	0.739	16.9	LOS B	7.5	196.0	0.87	0.99	29.2
18	R2	62	5.0	0.066	4.4	LOS A	0.3	7.4	0.54	0.42	34.3
Approach		794	5.0	0.739	15.9	LOS B	7.5	196.0	0.84	0.95	29.5
East: WB Claribel Rd											
1	L2	168	8.0	0.297	10.0	LOS A	1.2	31.5	0.68	0.68	30.4
6	T1	168	8.0	0.297	10.0	LOS A	1.2	31.5	0.68	0.68	32.5
16	R2	21	8.0	0.297	10.0	LOS A	1.2	31.5	0.68	0.68	31.6
Approach		358	8.0	0.297	10.0	LOS A	1.2	31.5	0.68	0.68	31.4
North: SB Roselle Ave											
7	L2	42	5.0	0.514	10.5	LOS B	3.2	83.2	0.72	0.77	32.3
4	T1	432	5.0	0.514	10.5	LOS B	3.2	83.2	0.72	0.77	32.2
14	R2	21	5.0	0.024	4.4	LOS A	0.1	2.6	0.56	0.41	34.3
Approach		495	5.0	0.514	10.3	LOS B	3.2	83.2	0.71	0.75	32.3
West: EB Claribel Rd											
5	L2	21	8.0	0.500	13.1	LOS B	2.7	72.3	0.74	0.80	31.1
2	T1	400	8.0	0.500	13.1	LOS B	2.7	72.3	0.74	0.80	31.1
12	R2	253	8.0	0.500	13.1	LOS B	2.7	72.3	0.74	0.80	30.1
Approach		674	8.0	0.500	13.1	LOS B	2.7	72.3	0.74	0.80	30.7
All Vehicles		2320	6.3	0.739	13.0	LOS B	7.5	196.0	0.76	0.82	30.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) without NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	93	5.0	1.398	216.9	LOS F	42.7	1109.2	1.00	4.89	7.9
8	T1	412	5.0	1.398	216.9	LOS F	42.7	1109.2	1.00	4.89	7.9
18	R2	82	5.0	1.398	216.9	LOS F	42.7	1109.2	1.00	4.89	7.9
Approach		588	5.0	1.398	216.9	LOS F	42.7	1109.2	1.00	4.89	7.9
East: WB Claribel Rd											
1	L2	358	8.0	1.479	241.6	LOS F	68.1	1810.9	1.00	7.05	7.2
6	T1	442	8.0	1.479	241.6	LOS F	68.1	1810.9	1.00	7.05	7.2
16	R2	95	8.0	1.479	241.6	LOS F	68.1	1810.9	1.00	7.05	7.2
Approach		895	8.0	1.479	241.6	LOS F	68.1	1810.9	1.00	7.05	7.2
North: SB Roselle Ave											
7	L2	84	5.0	1.452	240.3	LOS F	46.5	1209.5	1.00	5.09	7.3
4	T1	421	5.0	1.452	240.3	LOS F	46.5	1209.5	1.00	5.09	7.3
14	R2	95	5.0	1.452	240.3	LOS F	46.5	1209.5	1.00	5.09	7.3
Approach		600	5.0	1.452	240.3	LOS F	46.5	1209.5	1.00	5.09	7.3
West: EB Claribel Rd											
5	L2	42	8.0	1.405	217.5	LOS F	45.7	1216.1	1.00	5.21	7.8
2	T1	421	8.0	1.405	217.5	LOS F	45.7	1216.1	1.00	5.21	7.8
12	R2	168	8.0	1.405	217.5	LOS F	45.7	1216.1	1.00	5.21	7.9
Approach		632	8.0	1.405	217.5	LOS F	45.7	1216.1	1.00	5.21	7.8
All Vehicles		2714	6.7	1.479	230.4	LOS F	68.1	1810.9	1.00	5.72	7.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) without NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Stop (All-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	289	5.0	2.313	612.4	LOS F	151.5	3938.0	1.00	9.63	3.3
8	T1	526	5.0	2.313	612.4	LOS F	151.5	3938.0	1.00	9.63	3.3
18	R2	402	5.0	2.313	612.4	LOS F	151.5	3938.0	1.00	9.63	3.3
Approach		1216	5.0	2.313	612.4	LOS F	151.5	3938.0	1.00	9.63	3.3
East: WB Claribel Rd											
1	L2	299	8.0	1.653	318.9	LOS F	83.7	2226.3	1.00	7.68	5.8
6	T1	536	8.0	1.653	318.9	LOS F	83.7	2226.3	1.00	7.68	5.8
16	R2	93	8.0	1.653	318.9	LOS F	83.7	2226.3	1.00	7.68	5.8
Approach		928	8.0	1.653	318.9	LOS F	83.7	2226.3	1.00	7.68	5.8
North: SB Roselle Ave											
7	L2	62	5.0	1.106	101.0	LOS F	21.6	560.8	1.00	3.40	13.4
4	T1	371	5.0	1.106	101.0	LOS F	21.6	560.8	1.00	3.40	13.4
14	R2	82	5.0	1.106	101.0	LOS F	21.6	560.8	1.00	3.40	13.4
Approach		515	5.0	1.106	101.0	LOS F	21.6	560.8	1.00	3.40	13.4
West: EB Claribel Rd											
5	L2	93	8.0	1.782	380.3	LOS F	80.7	2145.9	1.00	6.95	5.0
2	T1	464	8.0	1.782	380.3	LOS F	80.7	2145.9	1.00	6.95	5.0
12	R2	247	8.0	1.782	380.3	LOS F	80.7	2145.9	1.00	6.95	5.0
Approach		804	8.0	1.782	380.3	LOS F	80.7	2145.9	1.00	6.95	5.0
All Vehicles		3464	6.5	2.313	403.8	LOS F	151.5	3938.0	1.00	7.56	4.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	400	160	340	420	90	90	400	82	80	400	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	42	421	53	358	442	95	95	421	86	84	421	95
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	52	440	366	373	619	133	111	444	91	100	426	96
Arrive On Green	0.03	0.25	0.25	0.22	0.44	0.44	0.06	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1675	1759	1465	1675	1401	301	1723	1454	297	1723	1425	322
Grp Volume(v), veh/h	42	421	53	358	0	537	95	0	507	84	0	516
Grp Sat Flow(s),veh/h/ln	1675	1759	1465	1675	0	1702	1723	0	1751	1723	0	1746
Q Serve(g_s), s	2.7	26.0	3.1	23.2	0.0	28.3	6.0	0.0	31.1	5.3	0.0	32.3
Cycle Q Clear(g_c), s	2.7	26.0	3.1	23.2	0.0	28.3	6.0	0.0	31.1	5.3	0.0	32.3
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	52	440	366	373	0	752	111	0	535	100	0	522
V/C Ratio(X)	0.80	0.96	0.14	0.96	0.00	0.71	0.85	0.00	0.95	0.84	0.00	0.99
Avail Cap(c_a), veh/h	79	440	366	373	0	752	111	0	535	100	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	40.7	32.1	42.3	0.0	25.1	50.9	0.0	37.3	51.3	0.0	38.4
Incr Delay (d2), s/veh	28.3	32.1	0.2	35.9	0.0	3.2	43.8	0.0	26.4	43.4	0.0	36.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	16.5	1.3	14.5	0.0	14.0	4.2	0.0	19.0	3.7	0.0	20.9
LnGrp Delay(d),s/veh	81.2	72.7	32.3	78.2	0.0	28.3	94.7	0.0	63.7	94.6	0.0	74.5
LnGrp LOS	F	E	C	E		C	F		E	F		E
Approach Vol, veh/h		516			895			602			600	
Approach Delay, s/veh		69.3			48.3			68.6			77.3	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	38.1	29.0	32.0	11.6	37.4	7.9	53.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.4	33.6	24.5	27.5	7.1	32.9	5.2	46.8
Max Q Clear Time (g_c+I1), s	7.3	33.1	25.2	28.0	8.0	34.3	4.7	30.3
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.0	0.0	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	63.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	450	240	290	520	90	280	510	390	60	360	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	175.9	175.9	175.9	175.9	175.9	190.0	181.0	181.0	190.0	181.0	181.0	190.0
Adj Flow Rate, veh/h	95	474	138	305	547	95	295	537	411	63	379	84
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	8	8	8	8	8	5	5	5	5	5	5
Cap, veh/h	90	396	329	245	463	80	309	443	339	55	459	102
Arrive On Green	0.05	0.22	0.22	0.15	0.32	0.32	0.18	0.47	0.47	0.03	0.32	0.32
Sat Flow, veh/h	1675	1759	1462	1675	1457	253	1723	947	725	1723	1431	317
Grp Volume(v), veh/h	95	474	138	305	0	642	295	0	948	63	0	463
Grp Sat Flow(s),veh/h/ln	1675	1759	1462	1675	0	1710	1723	0	1672	1723	0	1748
Q Serve(g_s), s	7.5	31.5	11.3	20.5	0.0	44.5	23.7	0.0	65.5	4.5	0.0	34.3
Cycle Q Clear(g_c), s	7.5	31.5	11.3	20.5	0.0	44.5	23.7	0.0	65.5	4.5	0.0	34.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.43	1.00		0.18
Lane Grp Cap(c), veh/h	90	396	329	245	0	543	309	0	782	55	0	561
V/C Ratio(X)	1.06	1.20	0.42	1.24	0.00	1.18	0.95	0.00	1.21	1.14	0.00	0.83
Avail Cap(c_a), veh/h	90	396	329	245	0	543	309	0	782	55	0	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.3	54.3	46.4	59.8	0.0	47.8	56.9	0.0	37.3	67.8	0.0	43.9
Incr Delay (d2), s/veh	111.7	110.9	0.9	139.0	0.0	99.3	39.1	0.0	107.0	163.5	0.0	9.9
Initial Q Delay(d3),s/veh	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	27.5	4.7	18.9	0.0	36.0	14.7	0.0	53.5	4.7	0.0	18.1
LnGrp Delay(d),s/veh	178.9	165.2	47.3	198.7	0.0	147.0	96.0	0.0	144.2	232.0	0.0	53.8
LnGrp LOS	F	F	D	F		F	F		F	F		D
Approach Vol, veh/h		707			947			1243			526	
Approach Delay, s/veh		144.0			163.7			132.8			75.1	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	70.0	25.0	36.0	29.6	49.4	12.0	49.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.5	65.5	20.5	31.5	25.1	44.9	7.5	44.5
Max Q Clear Time (g_c+I1), s	6.5	67.5	22.5	33.5	25.7	36.3	9.5	46.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	134.8
HCM 2010 LOS	F

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	93	5.0	0.734	19.5	LOS B	6.8	177.6	0.87	1.03	28.5
8	T1	412	5.0	0.734	19.5	LOS B	6.8	177.6	0.87	1.03	28.5
18	R2	82	5.0	0.734	19.5	LOS B	6.8	177.6	0.87	1.03	27.8
Approach		588	5.0	0.734	19.5	LOS B	6.8	177.6	0.87	1.03	28.4
East: WB Claribel Rd											
1	L2	358	8.0	1.190	118.7	LOS F	61.1	1625.7	1.00	3.27	12.7
6	T1	442	8.0	1.190	118.7	LOS F	61.1	1625.7	1.00	3.27	12.7
16	R2	95	8.0	1.190	118.7	LOS F	61.1	1625.7	1.00	3.27	12.6
Approach		895	8.0	1.190	118.7	LOS F	61.1	1625.7	1.00	3.27	12.7
North: SB Roselle Ave											
7	L2	84	5.0	0.998	62.5	LOS E	19.1	496.3	1.00	1.85	18.6
4	T1	421	5.0	0.998	62.5	LOS E	19.1	496.3	1.00	1.85	18.6
14	R2	95	5.0	0.998	62.5	LOS E	19.1	496.3	1.00	1.85	18.3
Approach		600	5.0	0.998	62.5	LOS E	19.1	496.3	1.00	1.85	18.5
West: EB Claribel Rd											
5	L2	42	8.0	1.116	99.7	LOS F	33.9	901.7	1.00	2.61	14.2
2	T1	421	8.0	1.116	99.7	LOS F	33.9	901.7	1.00	2.61	14.2
12	R2	168	8.0	1.116	99.7	LOS F	33.9	901.7	1.00	2.61	14.1
Approach		632	8.0	1.116	99.7	LOS F	33.9	901.7	1.00	2.61	14.2
All Vehicles		2714	6.7	1.190	80.4	LOS F	61.1	1625.7	0.97	2.32	16.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	289	5.0	1.550	269.2	LOS F	152.1	3953.6	1.00	5.50	6.9
8	T1	526	5.0	1.550	269.2	LOS F	152.1	3953.6	1.00	5.50	6.9
18	R2	402	5.0	1.550	269.2	LOS F	152.1	3953.6	1.00	5.50	6.9
Approach		1216	5.0	1.550	269.2	LOS F	152.1	3953.6	1.00	5.50	6.9
East: WB Claribel Rd											
1	L2	305	8.0	1.346	183.7	LOS F	90.7	2412.3	1.00	4.34	9.4
6	T1	547	8.0	1.346	183.7	LOS F	90.7	2412.3	1.00	4.34	9.4
16	R2	95	8.0	1.346	183.7	LOS F	90.7	2412.3	1.00	4.34	9.3
Approach		947	8.0	1.346	183.7	LOS F	90.7	2412.3	1.00	4.34	9.3
North: SB Roselle Ave											
7	L2	63	5.0	0.931	49.5	LOS D	12.2	318.1	0.97	1.53	20.8
4	T1	379	5.0	0.931	49.5	LOS D	12.2	318.1	0.97	1.53	20.8
14	R2	84	5.0	0.931	49.5	LOS D	12.2	318.1	0.97	1.53	20.4
Approach		526	5.0	0.931	49.5	LOS D	12.2	318.1	0.97	1.53	20.7
West: EB Claribel Rd											
5	L2	95	8.0	1.256	148.2	LOS F	65.9	1752.3	1.00	3.69	10.9
2	T1	474	8.0	1.256	148.2	LOS F	65.9	1752.3	1.00	3.69	10.9
12	R2	253	8.0	1.256	148.2	LOS F	65.9	1752.3	1.00	3.69	10.8
Approach		821	8.0	1.256	148.2	LOS F	65.9	1752.3	1.00	3.69	10.9
All Vehicles		3511	6.5	1.550	184.9	LOS F	152.1	3953.6	1.00	4.17	9.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Modified Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	93	5.0	0.773	22.8	LOS C	7.6	197.9	0.90	1.11	27.4
8	T1	412	5.0	0.773	22.8	LOS C	7.6	197.9	0.90	1.11	27.4
18	R2	82	5.0	0.773	22.8	LOS C	7.6	197.9	0.90	1.11	26.7
Approach		588	5.0	0.773	22.8	LOS C	7.6	197.9	0.90	1.11	27.3
East: WB Claribel Rd											
1	L2	358	8.0	1.195	121.0	LOS F	62.1	1650.8	1.00	3.31	12.5
6	T1	442	8.0	1.195	121.0	LOS F	62.1	1650.8	1.00	3.31	12.5
16	R2	95	8.0	1.195	121.0	LOS F	62.1	1650.8	1.00	3.31	12.4
Approach		895	8.0	1.195	121.0	LOS F	62.1	1650.8	1.00	3.31	12.5
North: SB Roselle Ave											
7	L2	84	5.0	0.995	61.5	LOS E	18.8	487.7	1.00	1.83	18.7
4	T1	421	5.0	0.995	61.5	LOS E	18.8	487.7	1.00	1.83	18.7
14	R2	95	5.0	0.995	61.5	LOS E	18.8	487.7	1.00	1.83	18.4
Approach		600	5.0	0.995	61.5	LOS E	18.8	487.7	1.00	1.83	18.7
West: EB Claribel Rd											
5	L2	42	8.0	0.817	32.7	LOS C	7.1	189.9	0.90	1.20	24.6
2	T1	421	8.0	0.817	32.7	LOS C	7.1	189.9	0.90	1.20	24.5
12	R2	168	8.0	0.297	10.5	LOS B	1.2	31.2	0.69	0.70	31.3
Approach		632	8.0	0.817	26.8	LOS C	7.1	189.9	0.85	1.06	26.0
All Vehicles		2714	6.7	1.195	64.7	LOS E	62.1	1650.8	0.94	1.98	18.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Modified Single Lane
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	289	5.0	1.754	361.1	LOS F	179.0	4654.4	1.00	6.25	5.4
8	T1	526	5.0	1.754	361.1	LOS F	179.0	4654.4	1.00	6.25	5.4
18	R2	402	5.0	1.754	361.1	LOS F	179.0	4654.4	1.00	6.25	5.4
Approach		1216	5.0	1.754	361.1	LOS F	179.0	4654.4	1.00	6.25	5.4
East: WB Claribel Rd											
1	L2	305	8.0	1.284	156.7	LOS F	80.9	2153.0	1.00	3.95	10.5
6	T1	547	8.0	1.284	156.7	LOS F	80.9	2153.0	1.00	3.95	10.5
16	R2	95	8.0	1.284	156.7	LOS F	80.9	2153.0	1.00	3.95	10.4
Approach		947	8.0	1.284	156.7	LOS F	80.9	2153.0	1.00	3.95	10.5
North: SB Roselle Ave											
7	L2	63	5.0	0.930	49.1	LOS D	12.2	318.3	0.98	1.53	20.8
4	T1	379	5.0	0.930	49.1	LOS D	12.2	318.3	0.98	1.53	20.8
14	R2	84	5.0	0.930	49.1	LOS D	12.2	318.3	0.98	1.53	20.4
Approach		526	5.0	0.930	49.1	LOS D	12.2	318.3	0.98	1.53	20.7
West: EB Claribel Rd											
5	L2	95	8.0	0.878	36.9	LOS D	10.3	272.7	0.95	1.35	23.3
2	T1	474	8.0	0.878	36.9	LOS D	10.3	272.7	0.95	1.35	23.4
12	R2	253	8.0	0.390	11.0	LOS B	1.8	47.8	0.70	0.73	30.9
Approach		821	8.0	0.878	28.9	LOS C	10.3	272.7	0.88	1.16	25.2
All Vehicles		3511	6.5	1.754	181.5	LOS F	179.0	4654.4	0.97	3.73	9.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	93	5.0	0.552	11.4	LOS B	3.7	95.3	0.75	0.81	31.7
8	T1	412	5.0	0.552	11.4	LOS B	3.7	95.3	0.75	0.81	31.6
18	R2	82	5.0	0.096	5.1	LOS A	0.4	10.8	0.59	0.50	33.9
Approach		588	5.0	0.552	10.6	LOS B	3.7	95.3	0.72	0.77	31.9
East: WB Claribel Rd											
1	L2	358	8.0	0.600	14.8	LOS B	4.0	105.9	0.77	0.86	28.9
6	T1	442	8.0	0.600	14.8	LOS B	4.0	105.9	0.77	0.86	30.1
16	R2	95	8.0	0.600	14.8	LOS B	4.0	105.9	0.77	0.86	29.6
Approach		895	8.0	0.600	14.8	LOS B	4.0	105.9	0.77	0.86	29.6
North: SB Roselle Ave											
7	L2	84	5.0	0.769	25.1	LOS C	6.3	165.0	0.90	1.14	26.7
4	T1	421	5.0	0.769	25.1	LOS C	6.3	165.0	0.90	1.14	26.6
14	R2	95	5.0	0.159	8.0	LOS A	0.7	16.9	0.70	0.70	32.5
Approach		600	5.0	0.769	22.4	LOS C	6.3	165.0	0.87	1.07	27.4
West: EB Claribel Rd											
5	L2	42	8.0	0.593	19.1	LOS B	3.3	88.1	0.80	0.92	28.6
2	T1	421	8.0	0.593	19.1	LOS B	3.3	88.1	0.80	0.92	28.7
12	R2	168	8.0	0.593	19.1	LOS B	3.3	88.1	0.80	0.92	27.9
Approach		632	8.0	0.593	19.1	LOS B	3.3	88.1	0.80	0.92	28.5
All Vehicles		2714	6.7	0.769	16.6	LOS B	6.3	165.0	0.79	0.90	29.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	289	5.0	0.954	42.4	LOS D	18.8	487.8	1.00	1.64	22.0
8	T1	526	5.0	0.954	42.4	LOS D	18.8	487.8	1.00	1.64	22.0
18	R2	402	5.0	0.503	11.5	LOS B	3.2	82.7	0.78	0.84	30.9
Approach		1216	5.0	0.954	32.2	LOS C	18.8	487.8	0.93	1.37	24.2
East: WB Claribel Rd											
1	L2	299	8.0	0.905	47.7	LOS D	9.8	259.5	0.94	1.42	20.7
6	T1	536	8.0	0.905	47.7	LOS D	9.8	259.5	0.94	1.42	21.0
16	R2	93	8.0	0.905	47.7	LOS D	9.8	259.5	0.94	1.42	20.7
Approach		928	8.0	0.905	47.7	LOS D	9.8	259.5	0.94	1.42	20.9
North: SB Roselle Ave											
7	L2	62	5.0	0.820	34.9	LOS C	6.7	173.1	0.90	1.22	24.0
4	T1	371	5.0	0.820	34.9	LOS C	6.7	173.1	0.90	1.22	23.9
14	R2	82	5.0	0.176	10.2	LOS B	0.7	17.9	0.74	0.74	31.5
Approach		515	5.0	0.820	30.9	LOS C	6.7	173.1	0.87	1.14	24.9
West: EB Claribel Rd											
5	L2	93	8.0	0.658	19.8	LOS B	4.3	115.4	0.82	0.97	28.2
2	T1	464	8.0	0.658	19.8	LOS B	4.3	115.4	0.82	0.97	28.3
12	R2	247	8.0	0.658	19.8	LOS B	4.3	115.4	0.82	0.97	27.7
Approach		804	8.0	0.658	19.8	LOS B	4.3	115.4	0.82	0.97	28.1
All Vehicles		3464	6.5	0.954	33.3	LOS C	18.8	487.8	0.90	1.26	24.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

Appendix F

Queuing Analysis

QUEUE DISTANCE (%ILE)

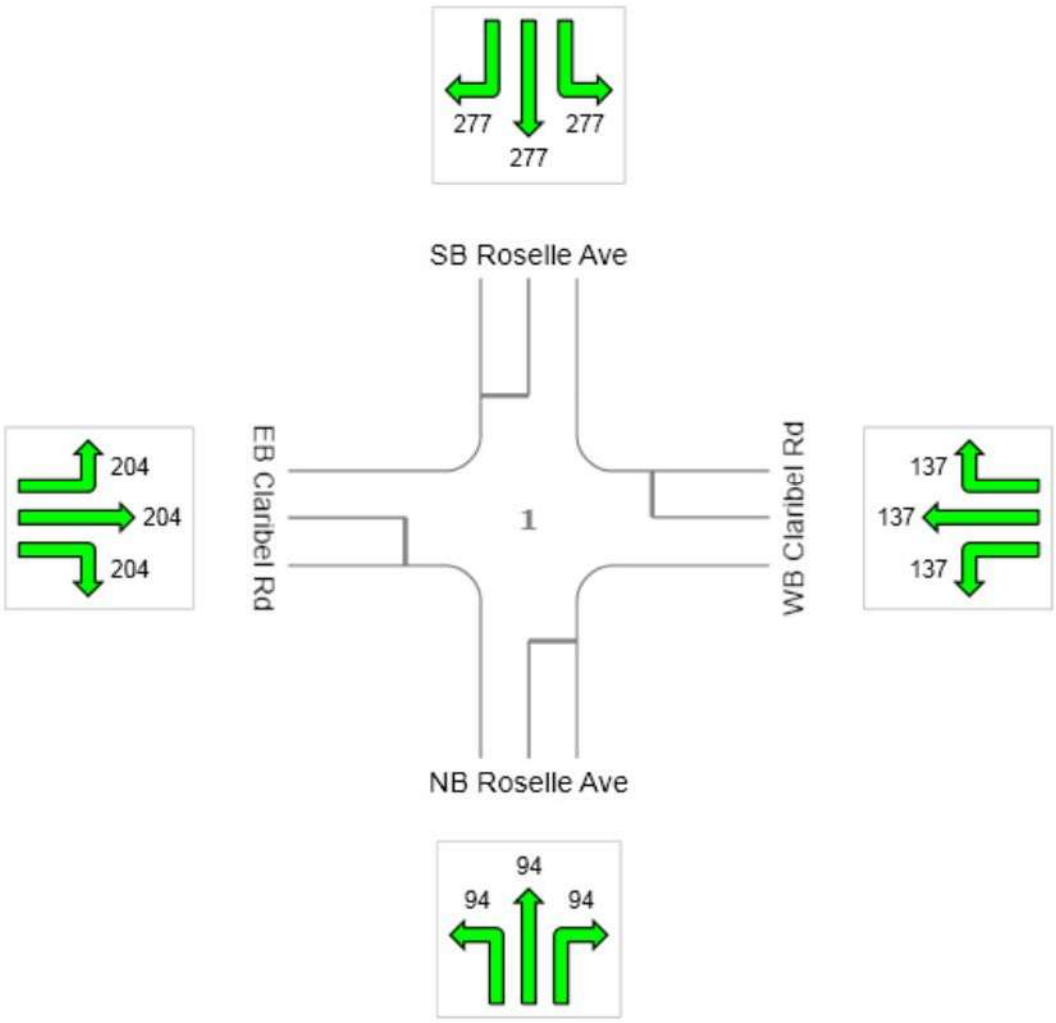
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2014 AM)

AM Peak Hour
Existing (2014) Conditions
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	94	137	277	204	277



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

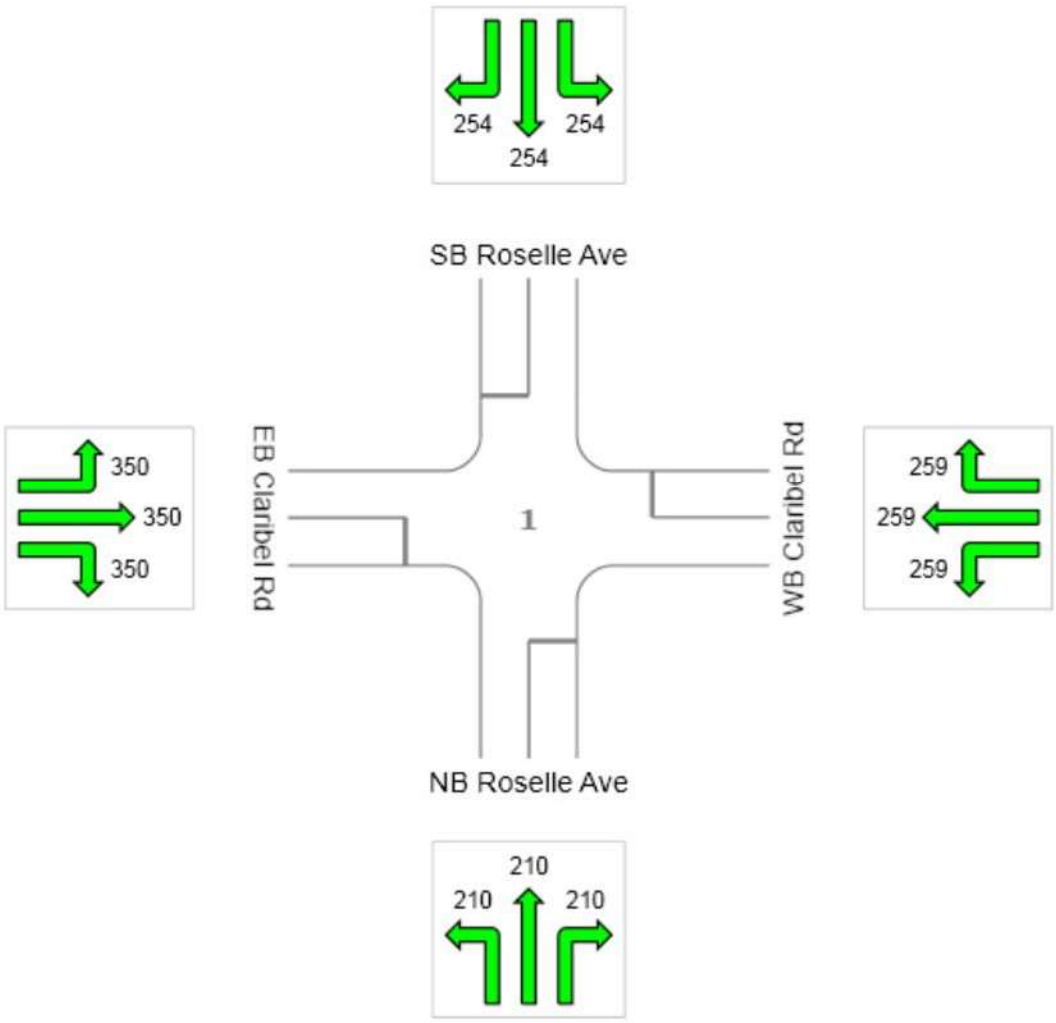
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2014 PM)

PM Peak Hour
Existing (2014) Conditions
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	210	259	254	350	350



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

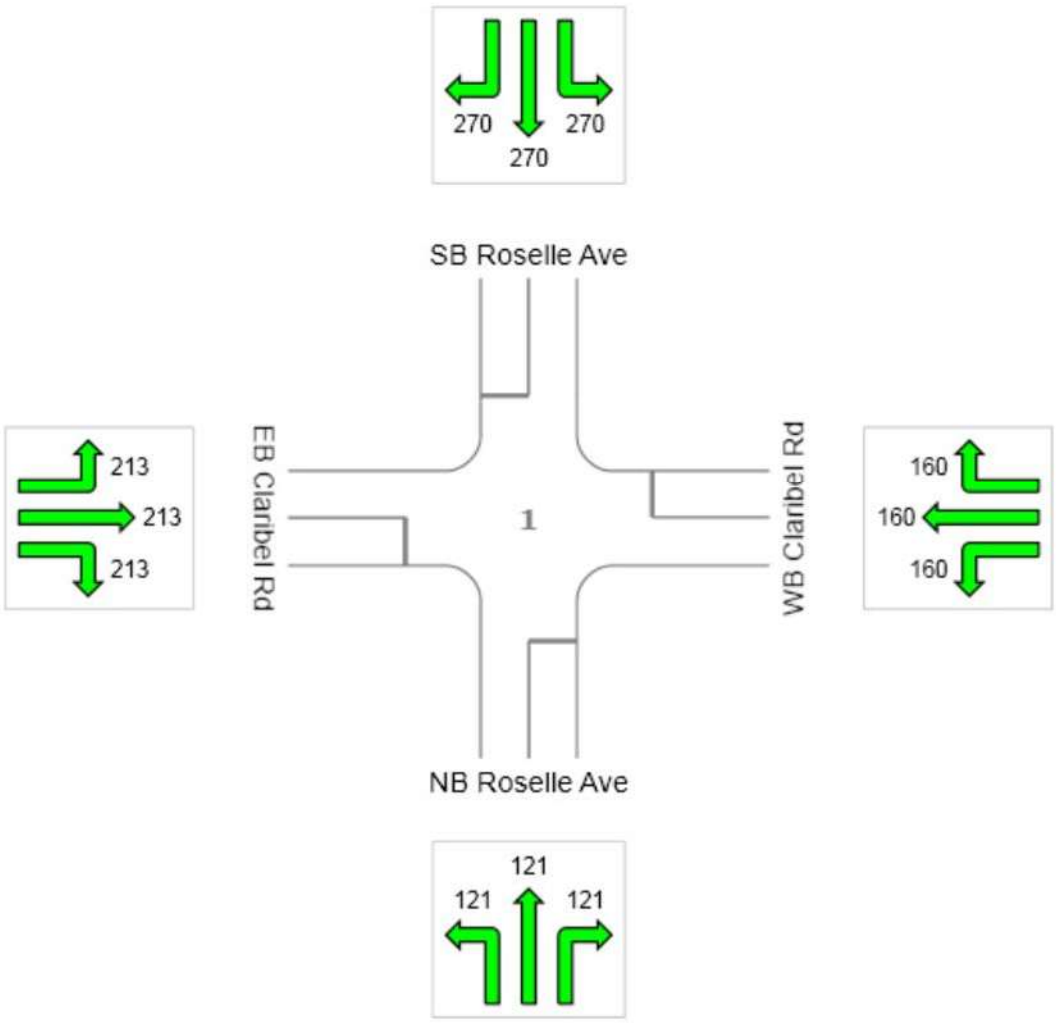
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2016 AM)

AM Peak Hour
Base (2016) Conditions
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	121	160	270	213	270



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

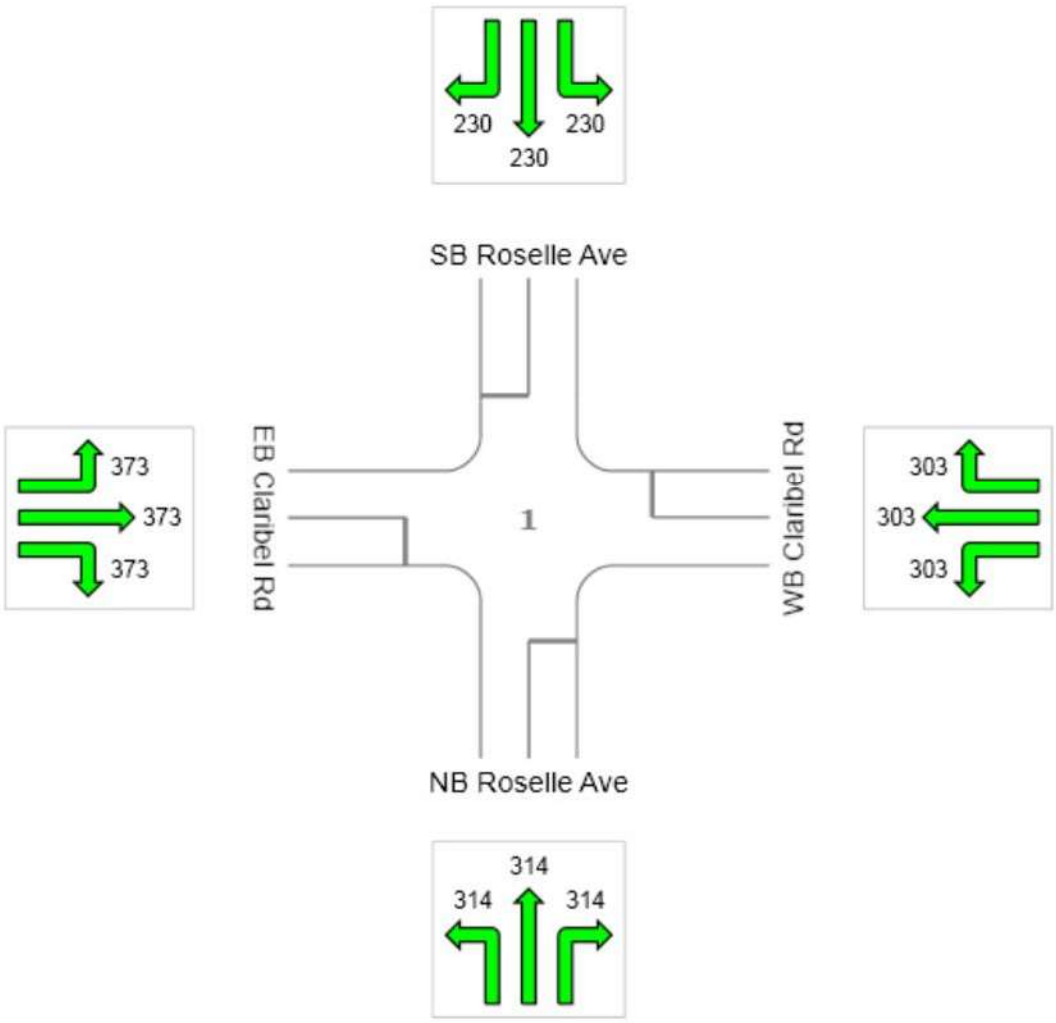
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2016 PM)

PM Peak Hour
Base (2016) Conditions
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	314	303	230	373	373



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	40	120	93	77	219	78	121	134	230
Average Queue (ft)	21	83	56	44	145	48	80	59	162
95th Queue (ft)	59	169	99	87	259	98	135	150	282
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		3			0				6
Queuing Penalty (veh)		6			0				3

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	118	212	76	70	197	113	165	65	179
Average Queue (ft)	49	119	46	48	131	66	100	45	131
95th Queue (ft)	136	220	91	88	209	119	181	76	191
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)	0	2							0
Queuing Penalty (veh)	0	4							0

QUEUE DISTANCE (%ILE)

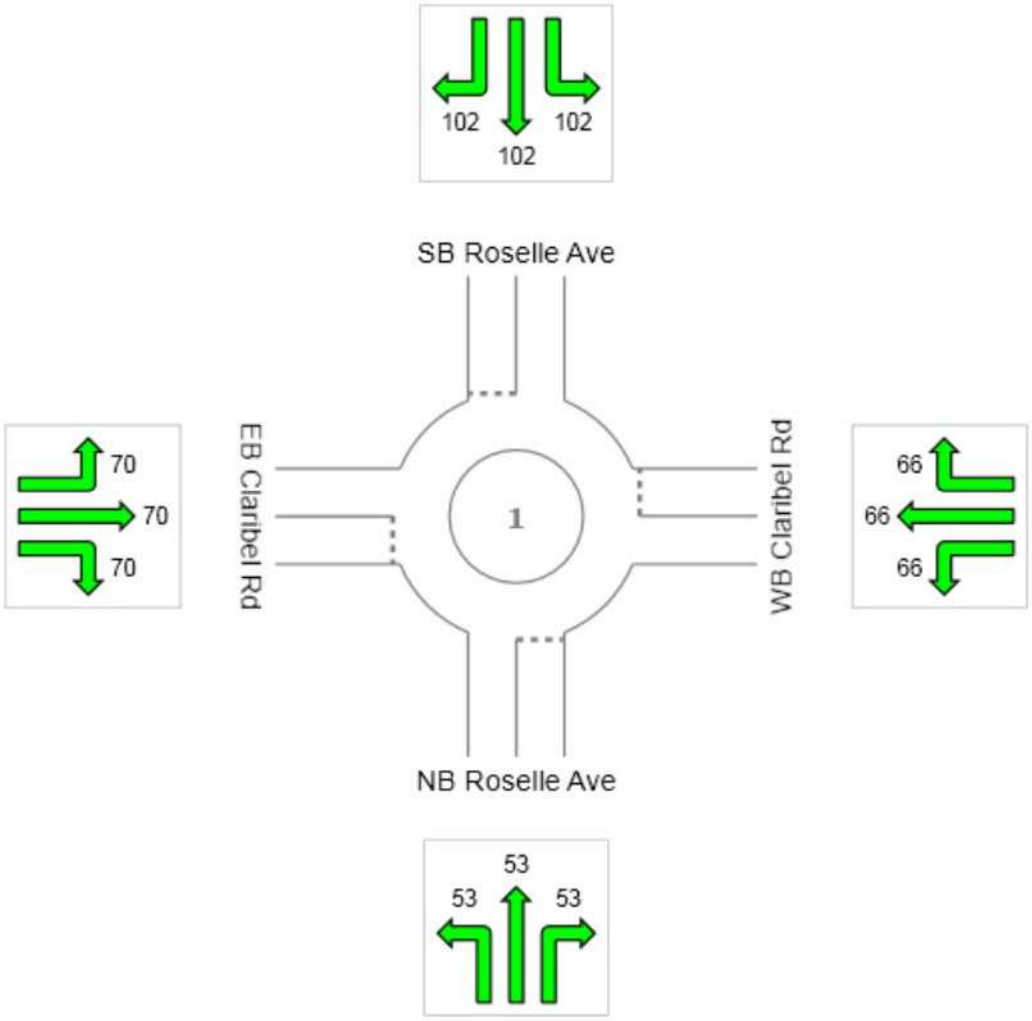
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2016 AM)

AM Peak Hour
Base (2016) Conditions
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	53	66	102	70	102



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

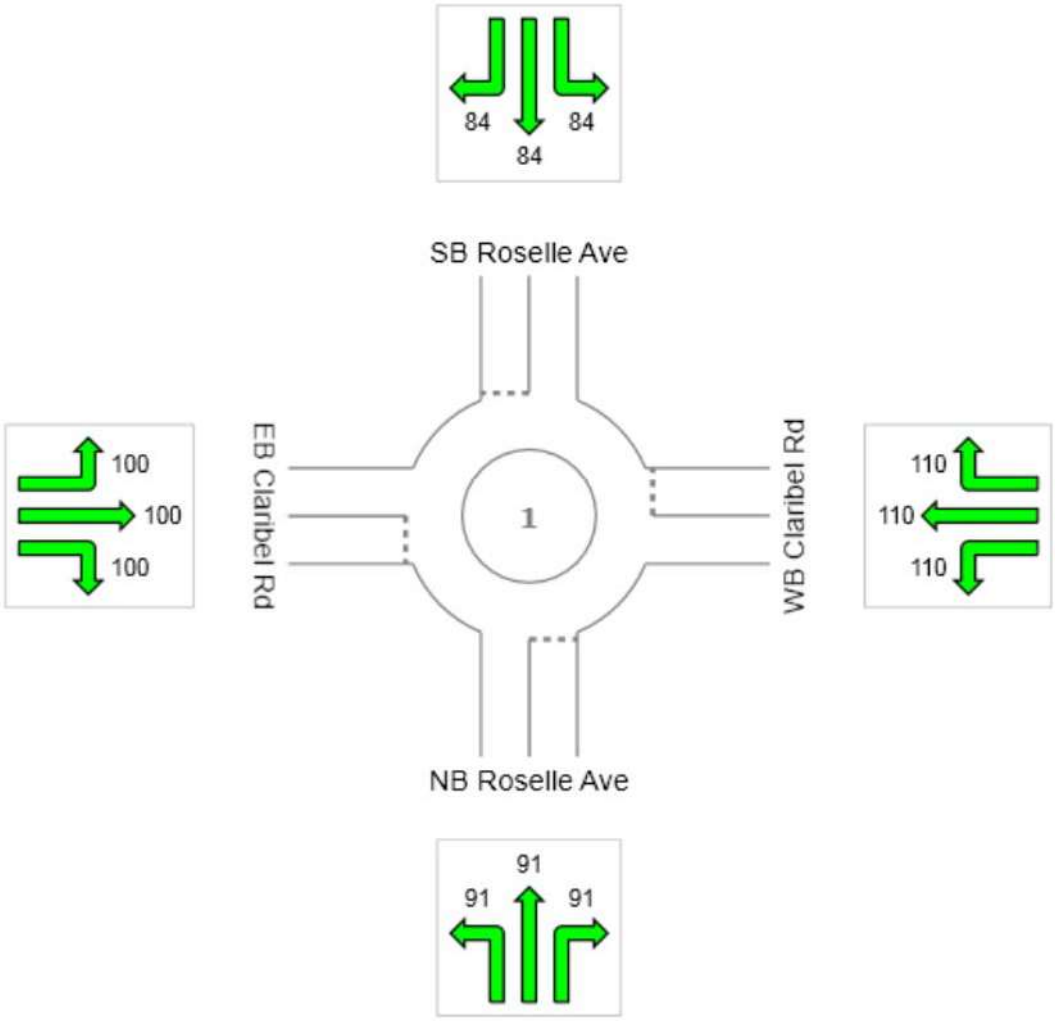
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2016 PM)

PM Peak Hour
Base (2016) Conditions
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	91	110	84	100	110



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

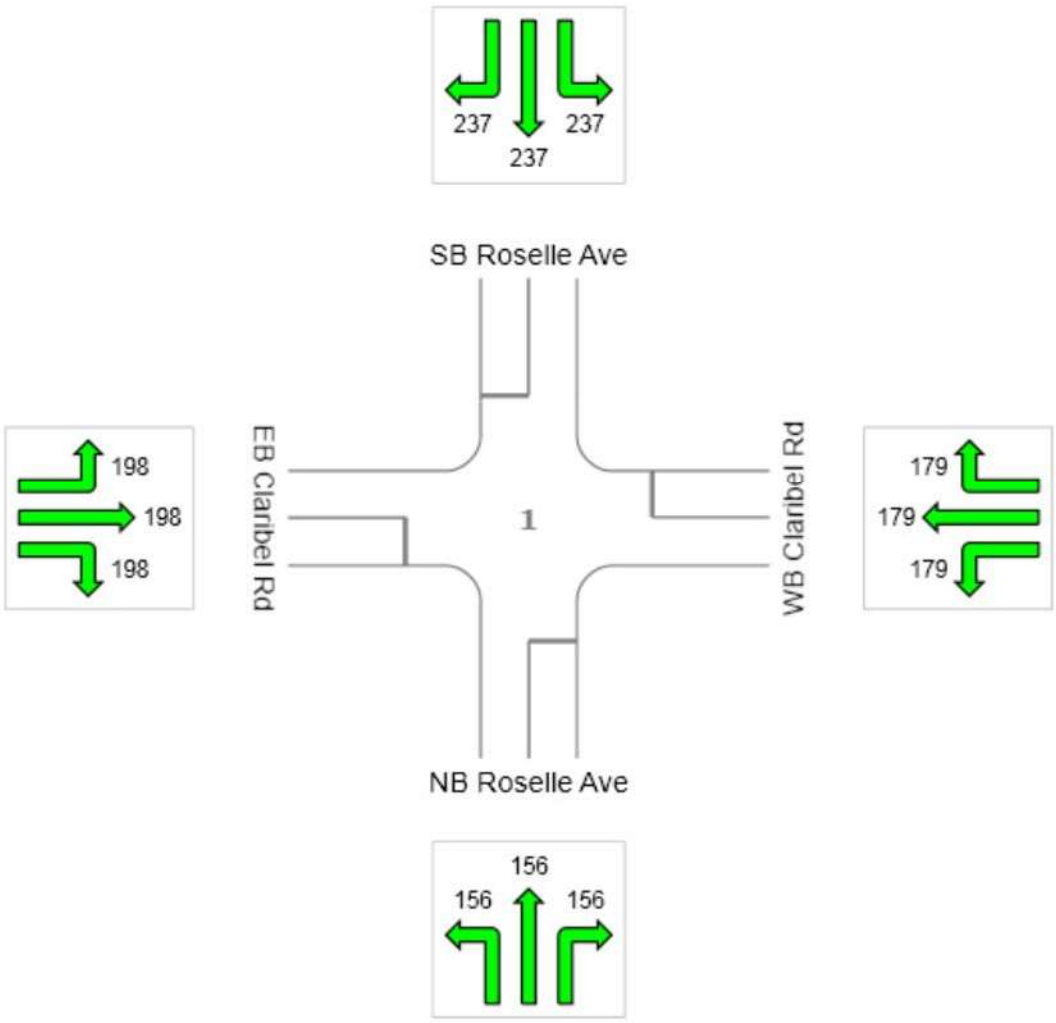
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 AM) with NCC

AM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	156	179	237	198	237



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

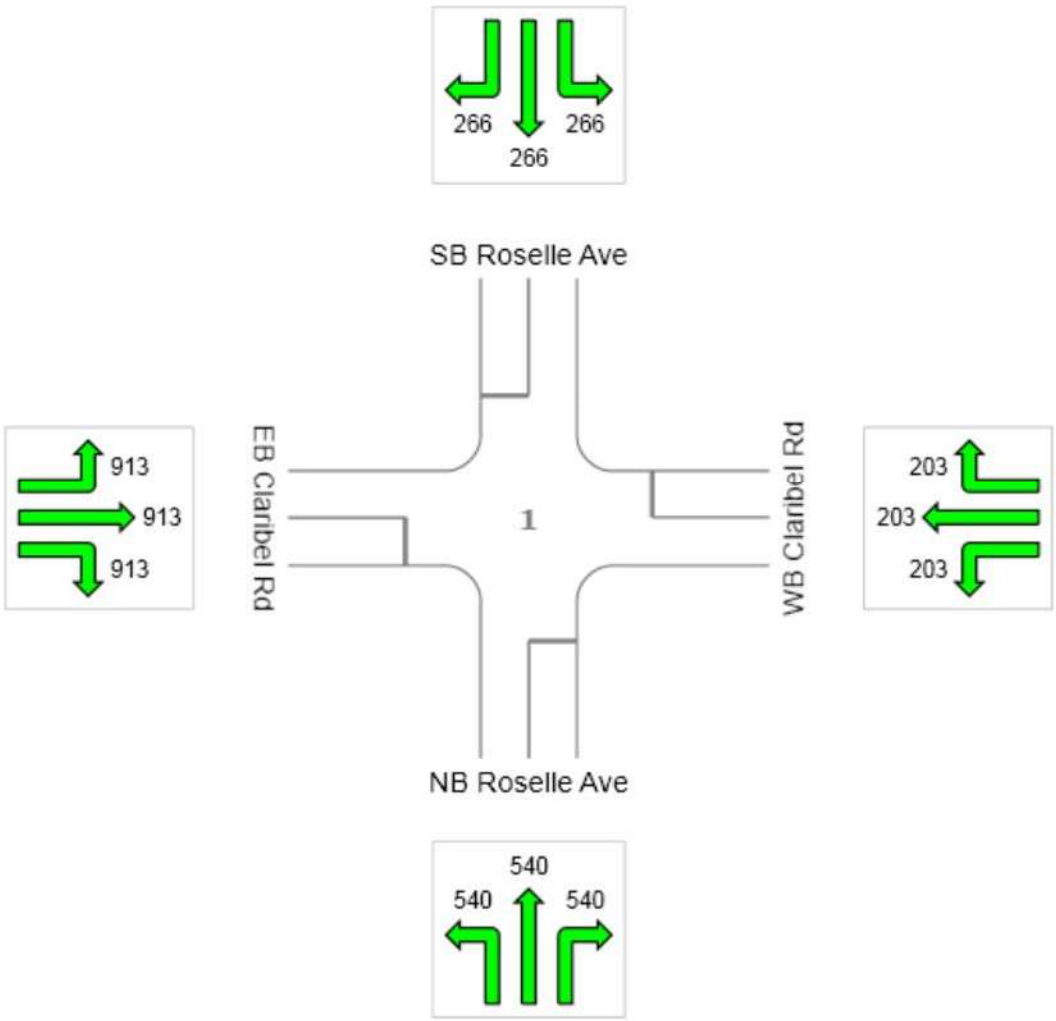
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 PM) with NCC

PM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	540	203	266	913	913



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	43	104	116	84	215	86	149	90	238
Average Queue (ft)	23	61	76	44	150	59	92	46	187
95th Queue (ft)	60	114	132	97	249	95	171	137	376
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)									10
Queuing Penalty (veh)									4

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	59	202	73	108	184	115	197	98	212
Average Queue (ft)	31	136	46	75	119	70	132	54	145
95th Queue (ft)	70	216	81	122	208	132	214	125	250
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		2							3
Queuing Penalty (veh)		5							2

QUEUE DISTANCE (%ILE)

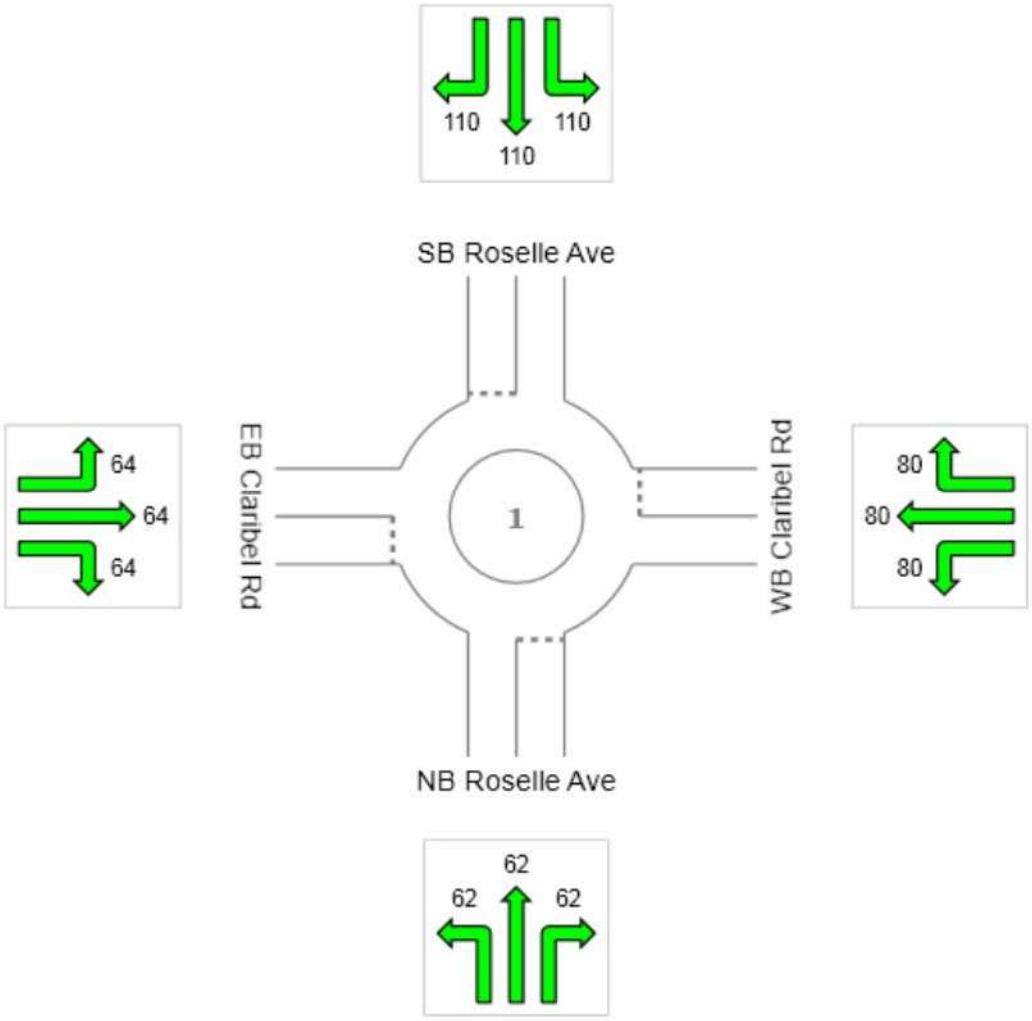
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 AM) with NCC

AM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	62	80	110	64	110



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

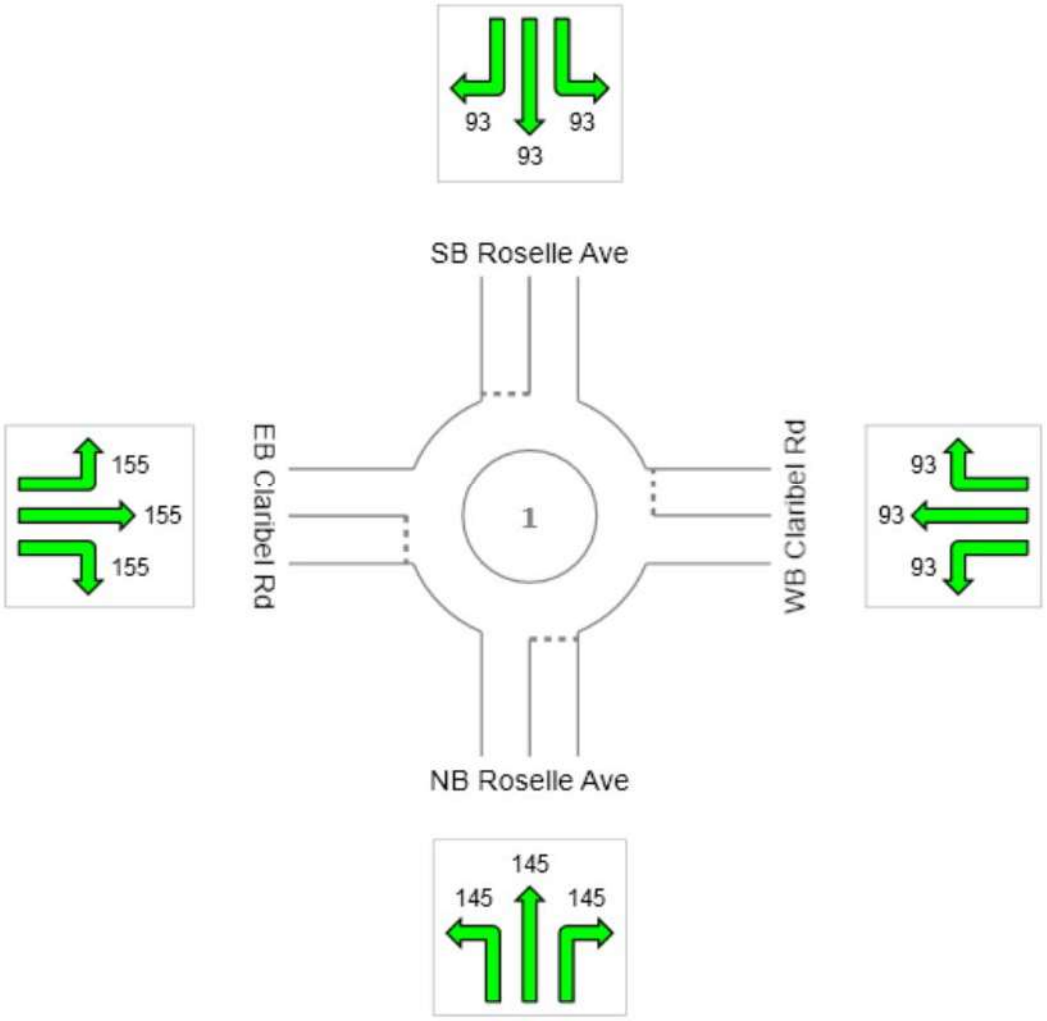
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 PM) with NCC

PM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	145	93	93	155	155



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

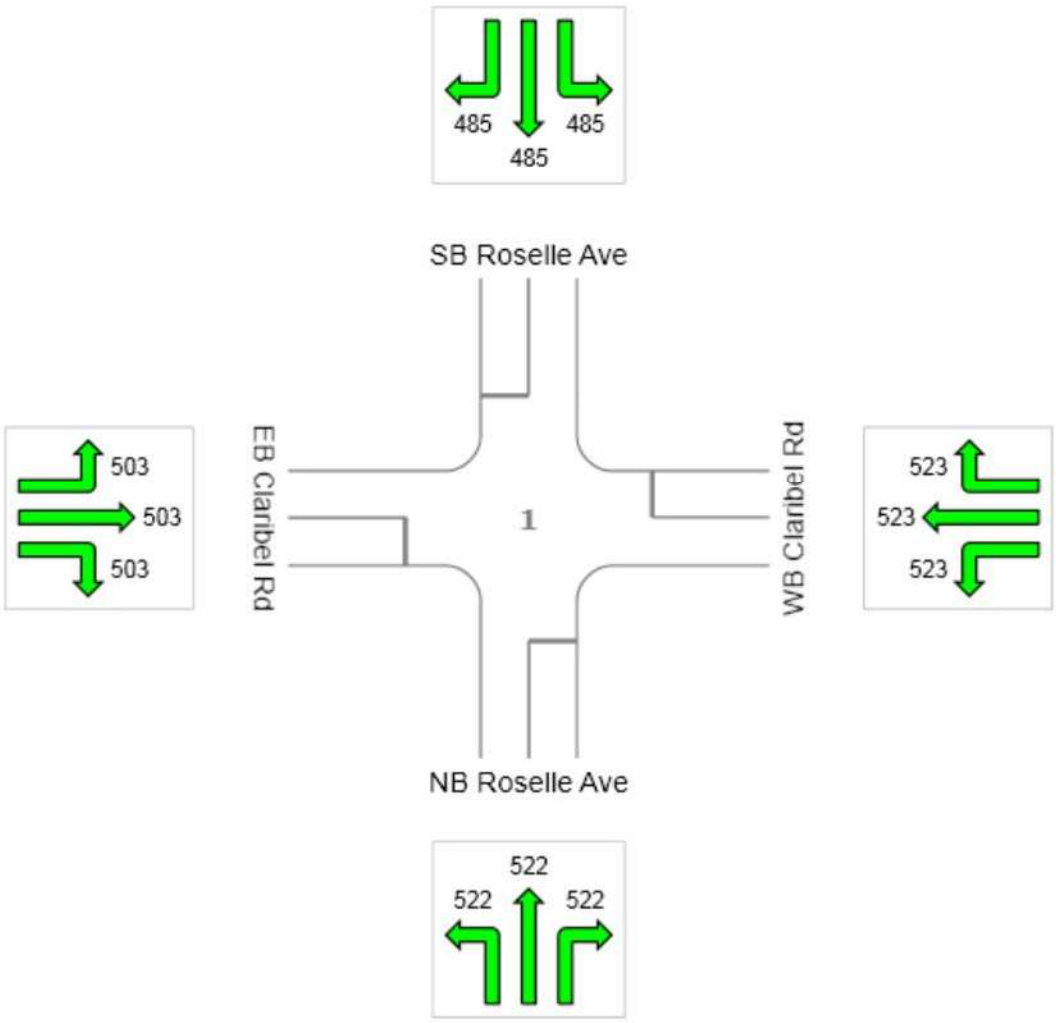
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 AM) without NCC

AM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	522	523	485	503	523



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

QUEUE DISTANCE (%ILE)

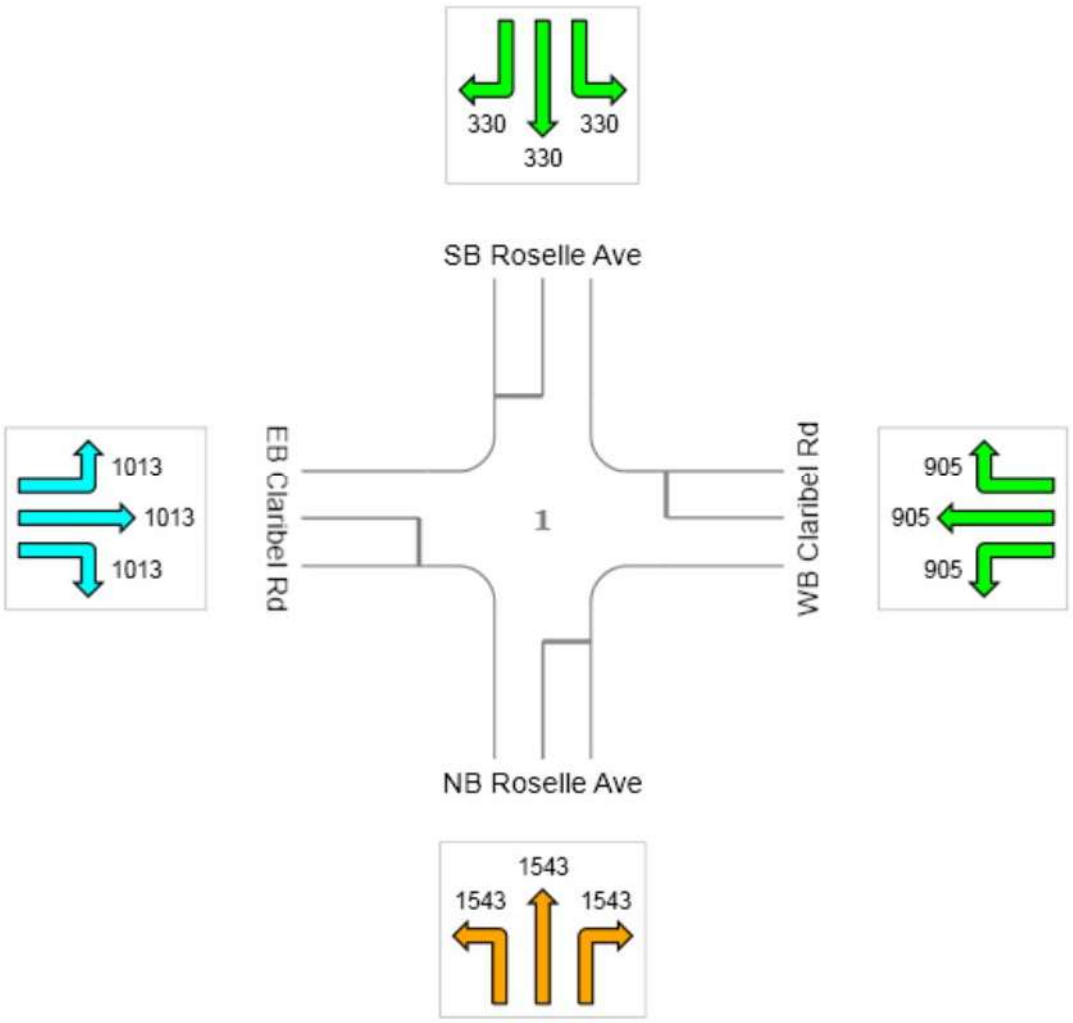
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 PM) without NCC

PM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	1543	905	330	1013	1543



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	85	223	81	188	236	103	157	151	306
Average Queue (ft)	31	130	55	112	164	71	111	66	226
95th Queue (ft)	100	249	89	206	257	125	179	184	452
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		2			1			0	18
Queuing Penalty (veh)		4			1			0	12

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	159	292	149	219	352	164	388	106	205
Average Queue (ft)	73	193	86	151	279	126	255	62	146
95th Queue (ft)	180	378	211	300	469	250	574	118	233
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		12	0	0	10	9	2		2
Queuing Penalty (veh)		27	0	0	14	52	4		1

QUEUE DISTANCE (%ILE)

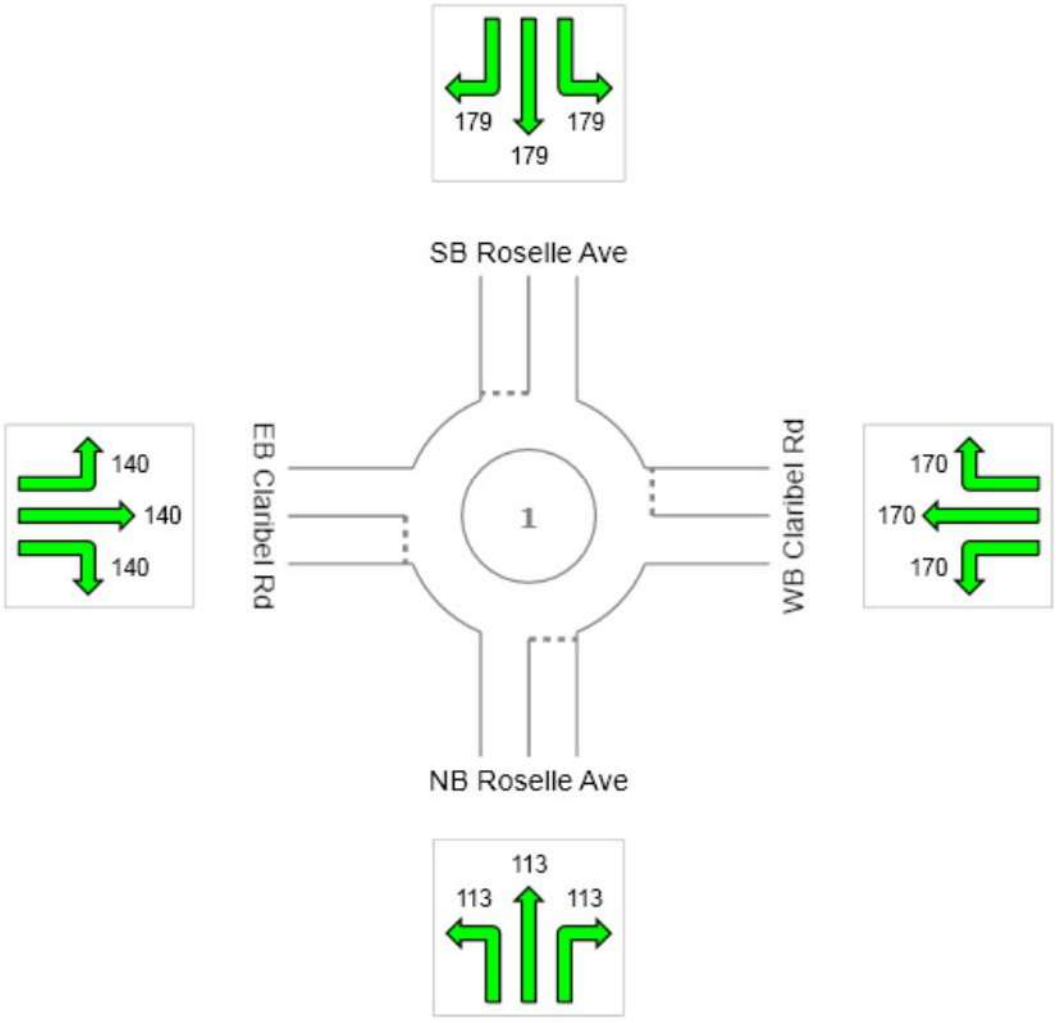
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 AM) no NCC

AM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	113	170	179	140	179



Colour code based on Queue Storage Ratio

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QUEUE DISTANCE (%ILE)

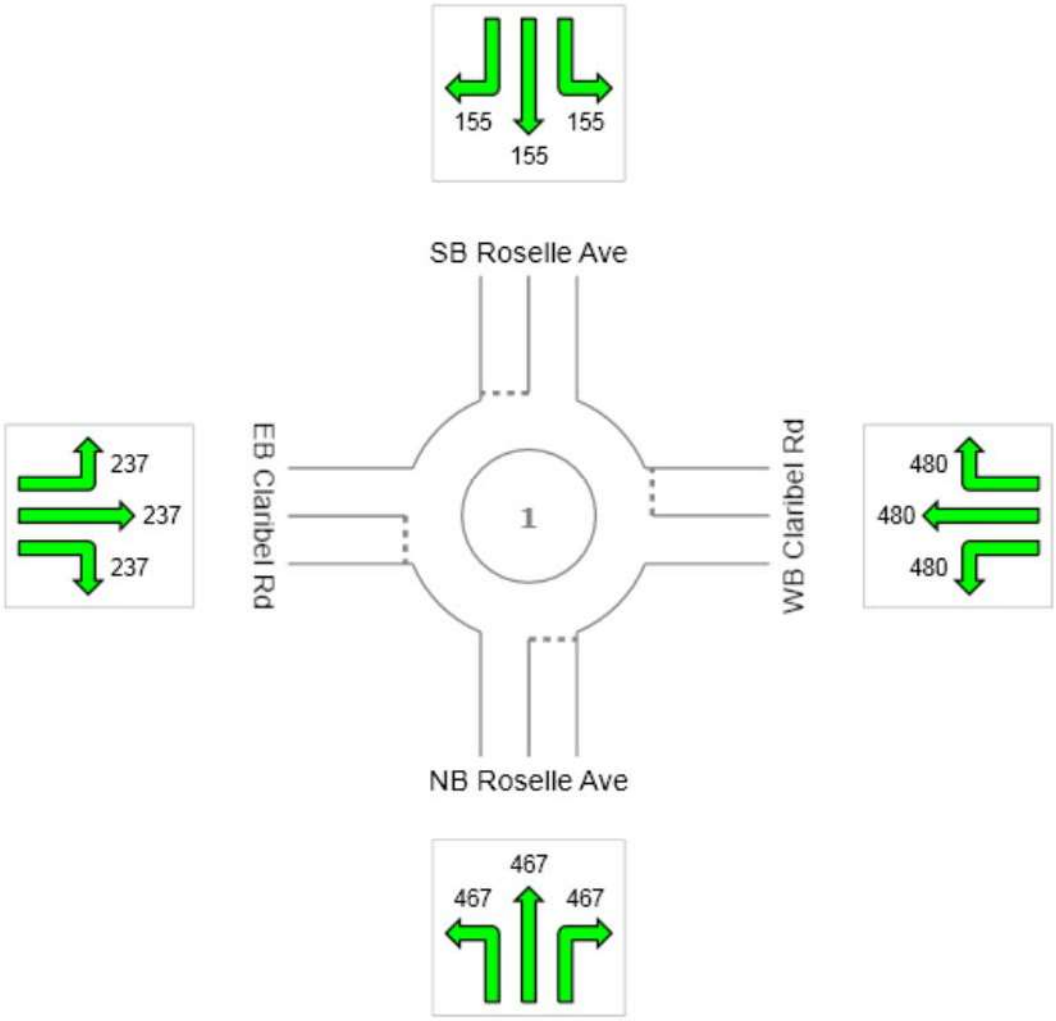
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2026 PM) no NCC

PM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	467	480	155	237	480



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

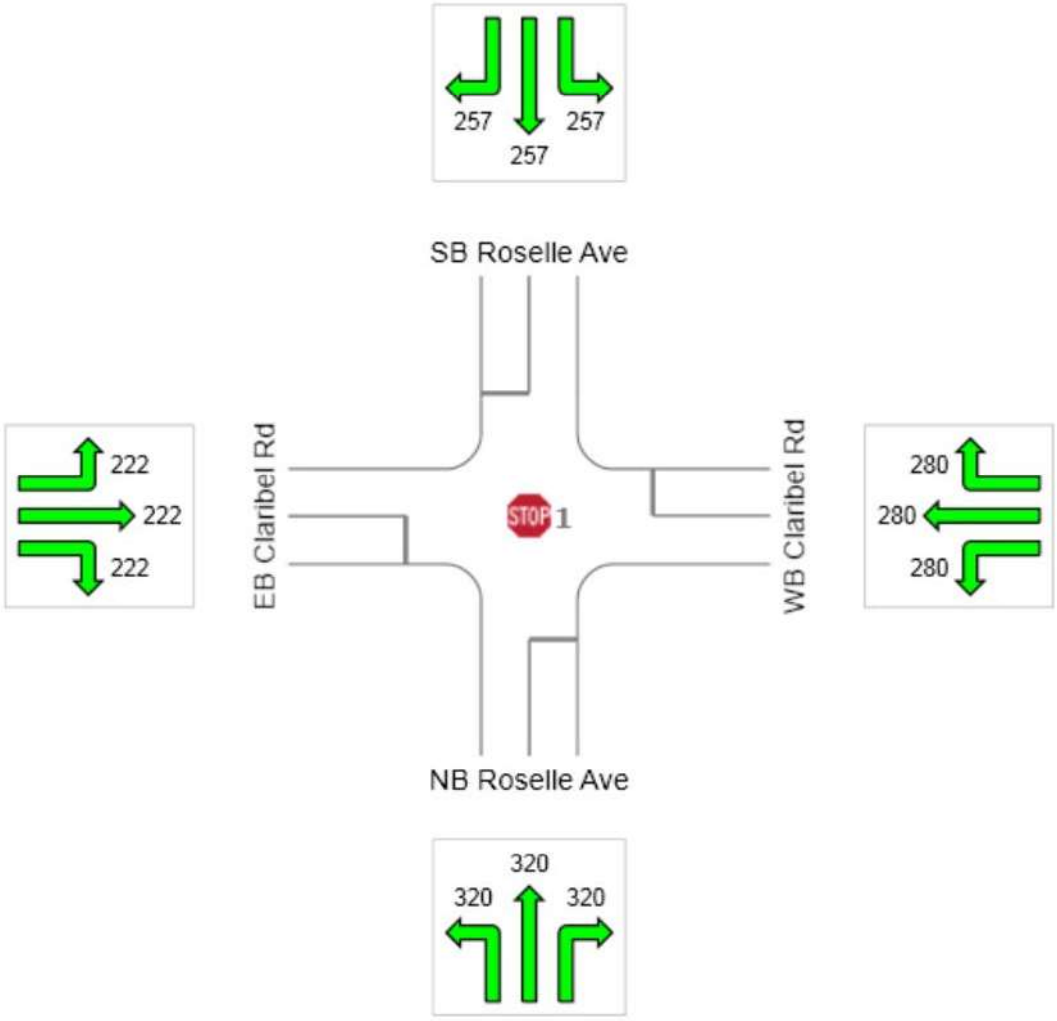
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
	320	280	257	222	320



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

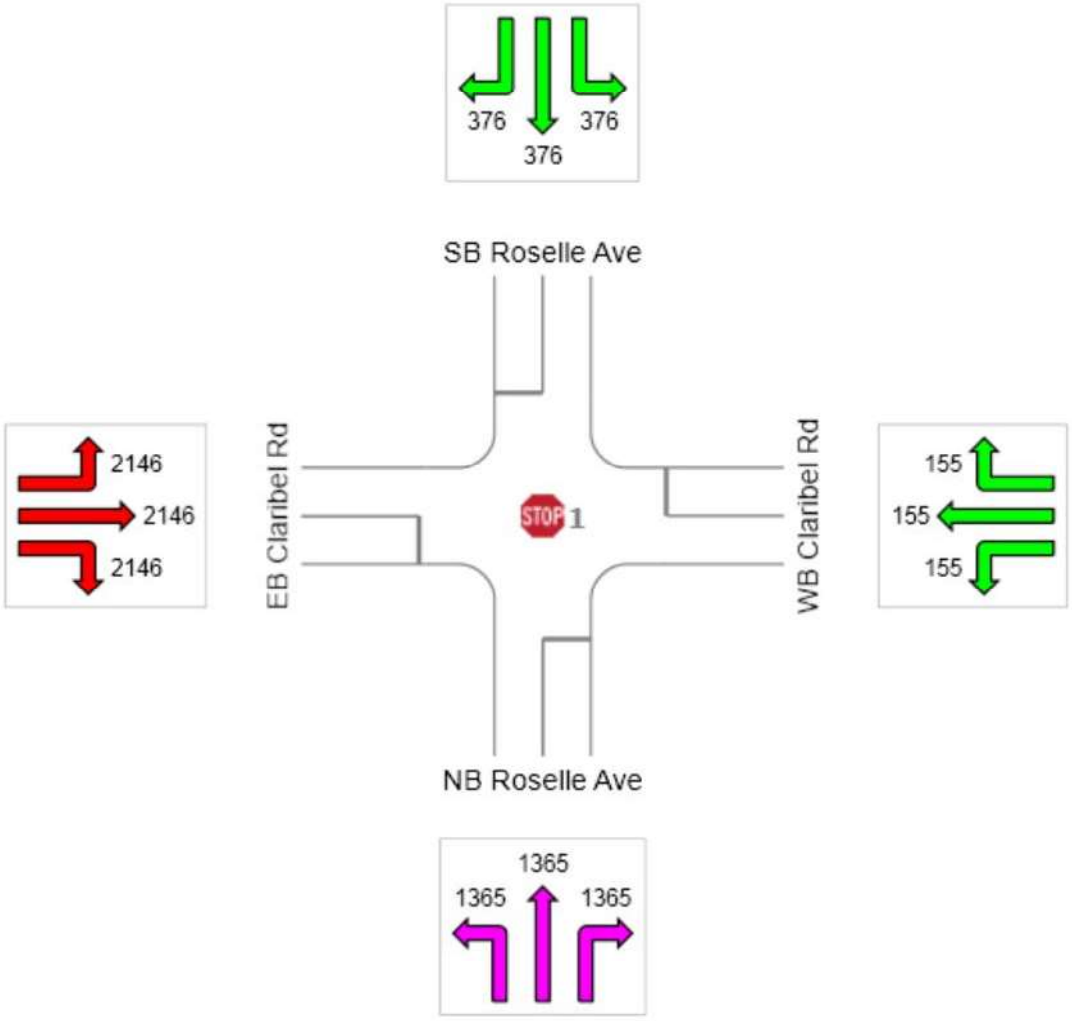
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
	1365	155	376	2146	2146



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	70	88	82	140	273	98	209	112	286
Average Queue (ft)	32	56	63	76	199	70	141	39	197
95th Queue (ft)	84	112	100	205	374	115	236	155	344
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)					4		0		10
Queuing Penalty (veh)					3		0		2

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	74	321	169	139	128	199	248	96	296
Average Queue (ft)	23	229	126	91	82	123	189	41	222
95th Queue (ft)	91	450	284	152	155	206	290	120	354
Link Distance (ft)		1092			3007				2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		20	0				2		13
Queuing Penalty (veh)		51	0				3		5

QUEUE DISTANCE (%ILE)

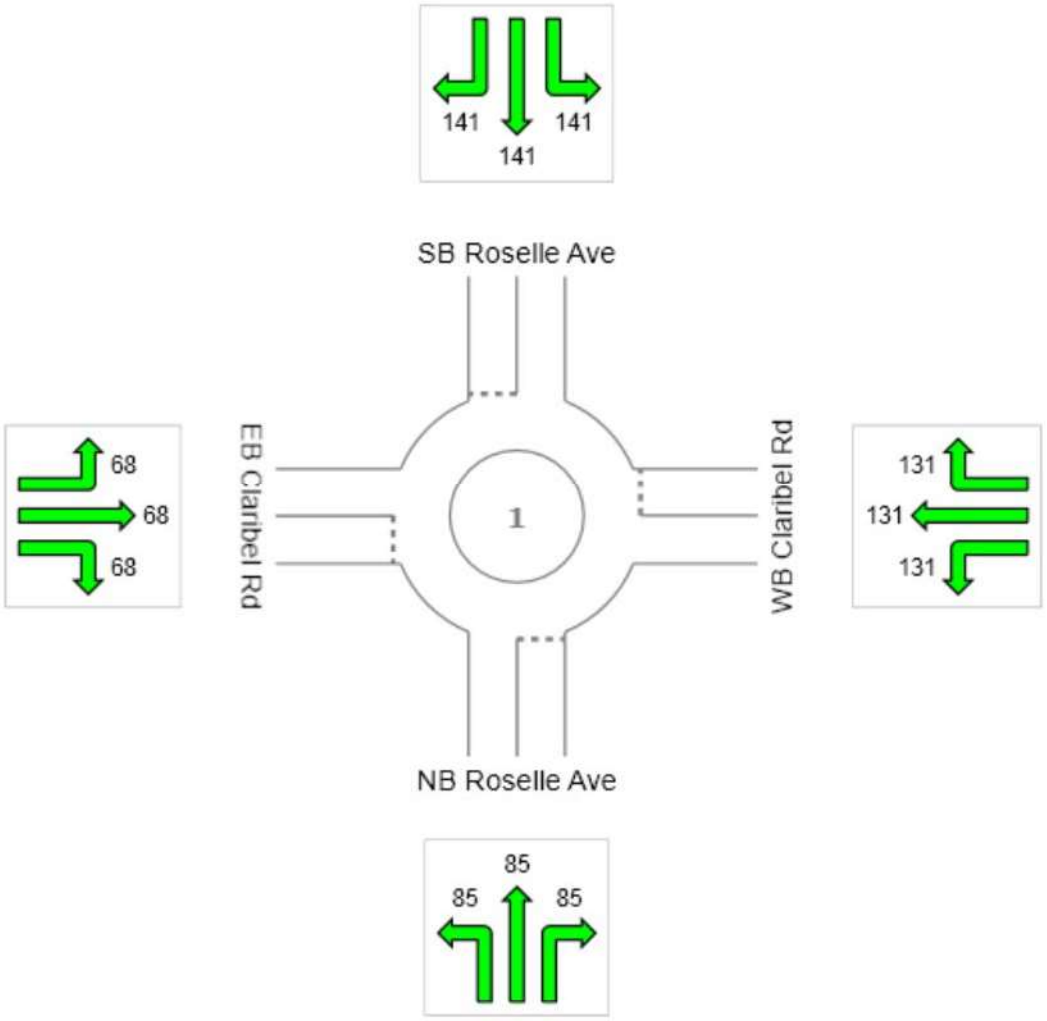
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	85	131	141	68	141



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

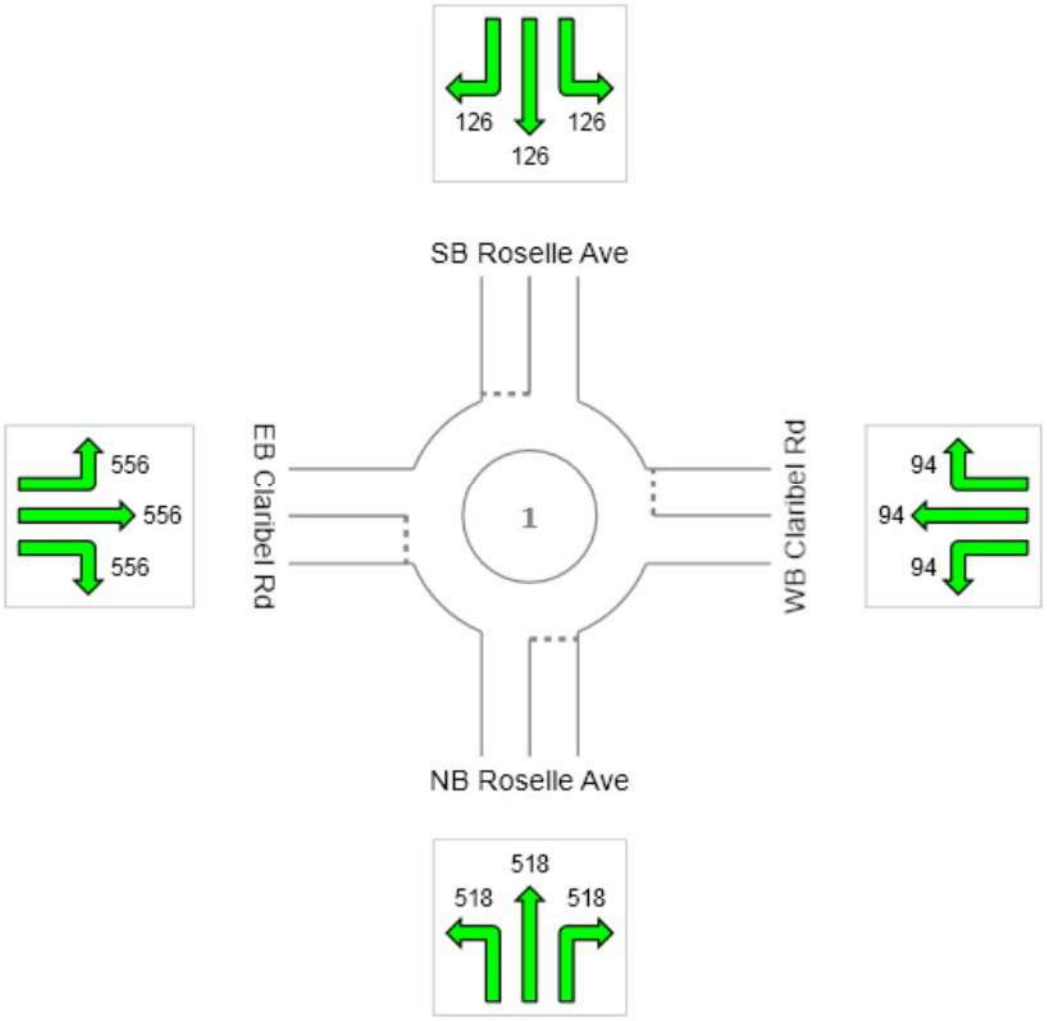
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	518	94	126	556	556



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

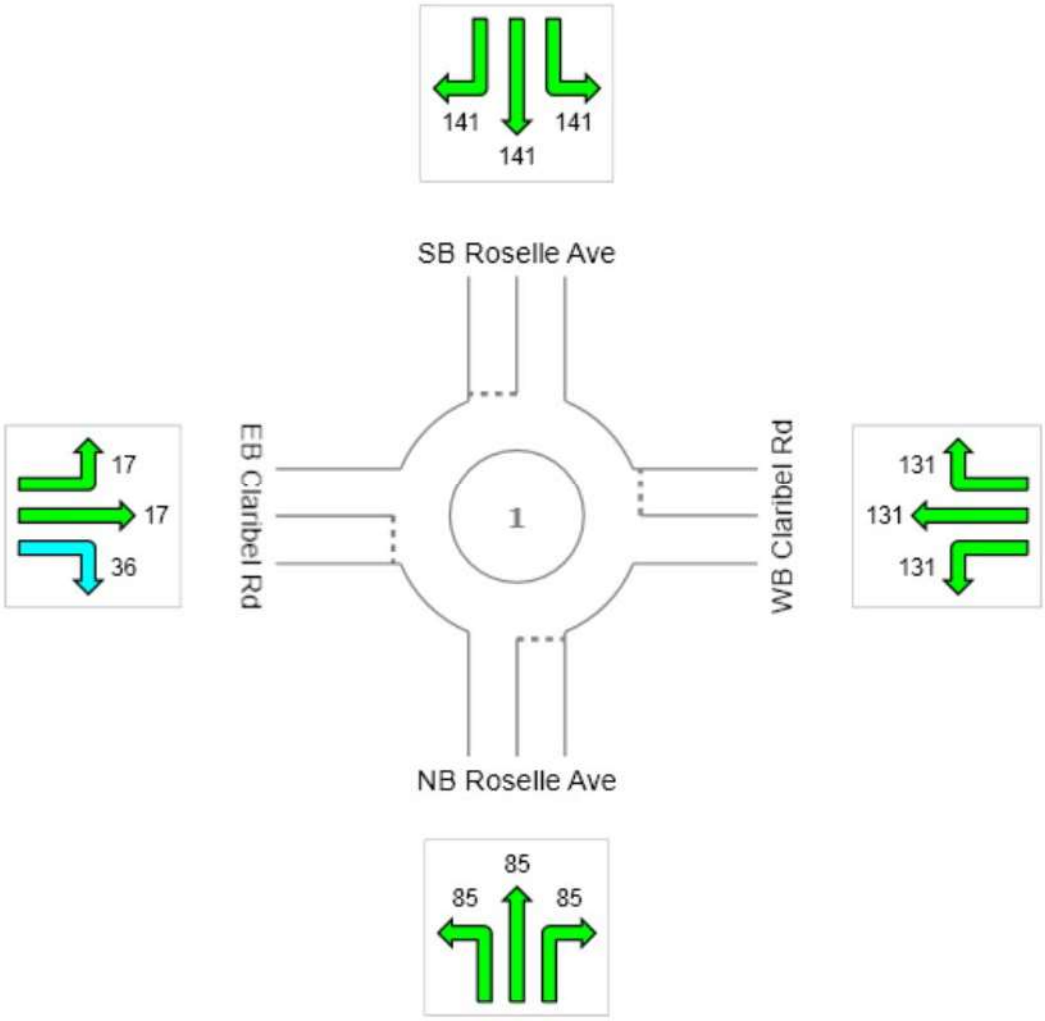
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	85	131	141	36	141



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

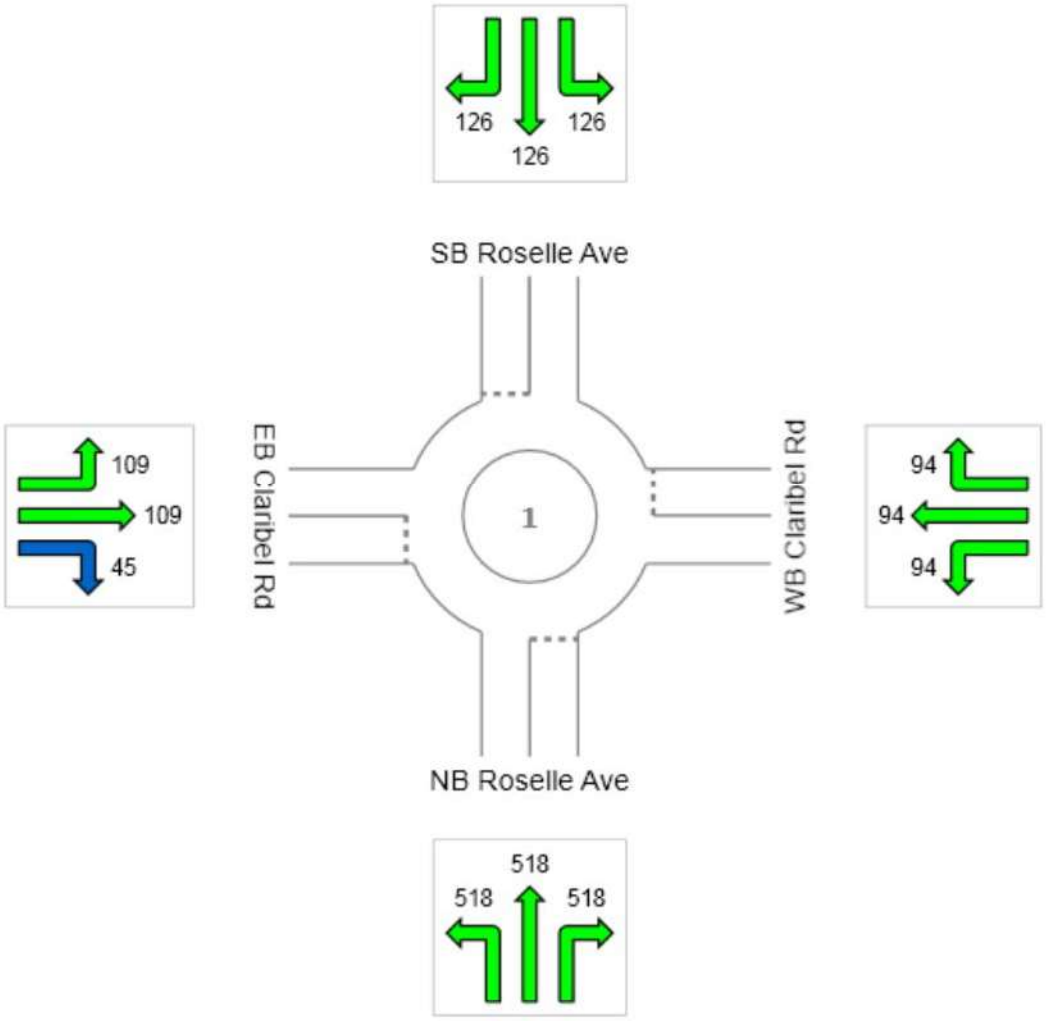
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	518	94	126	109	518



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

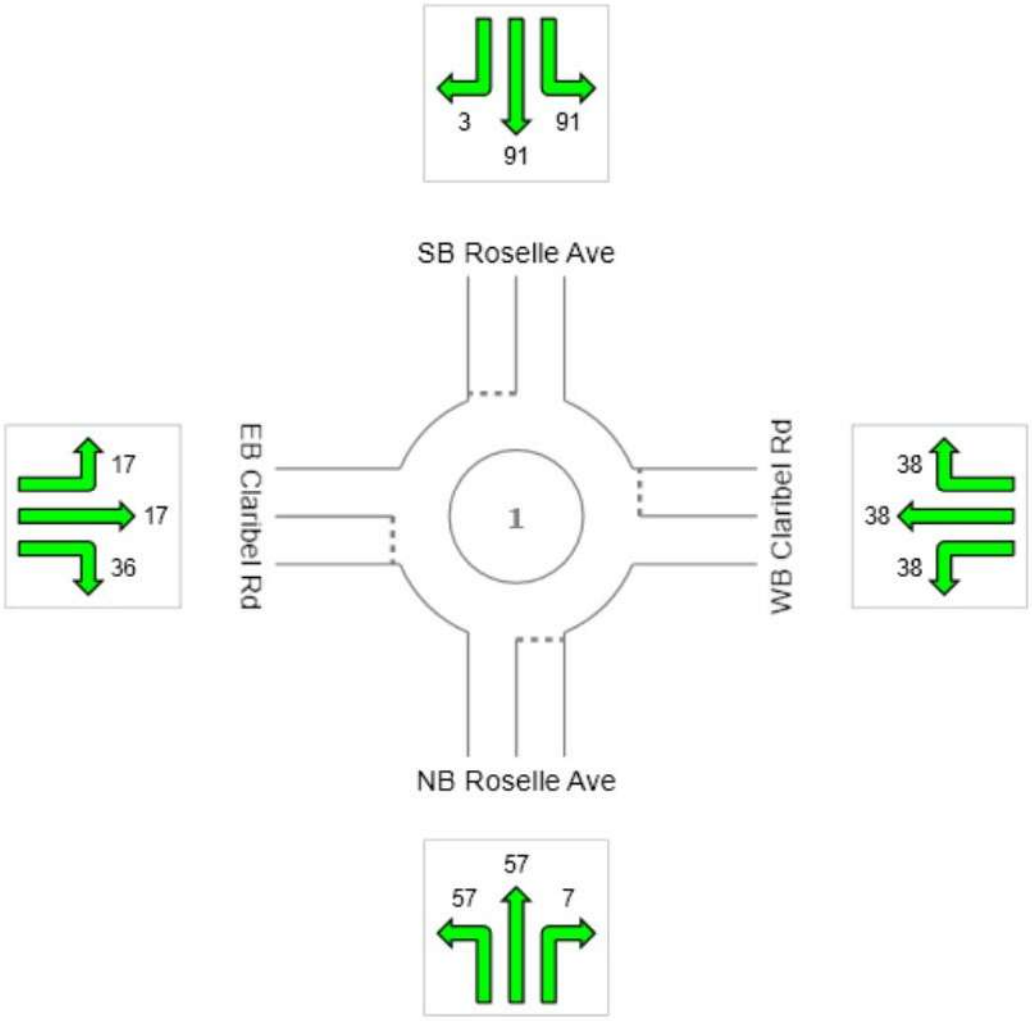
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Expanded
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	57	38	91	36	91



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

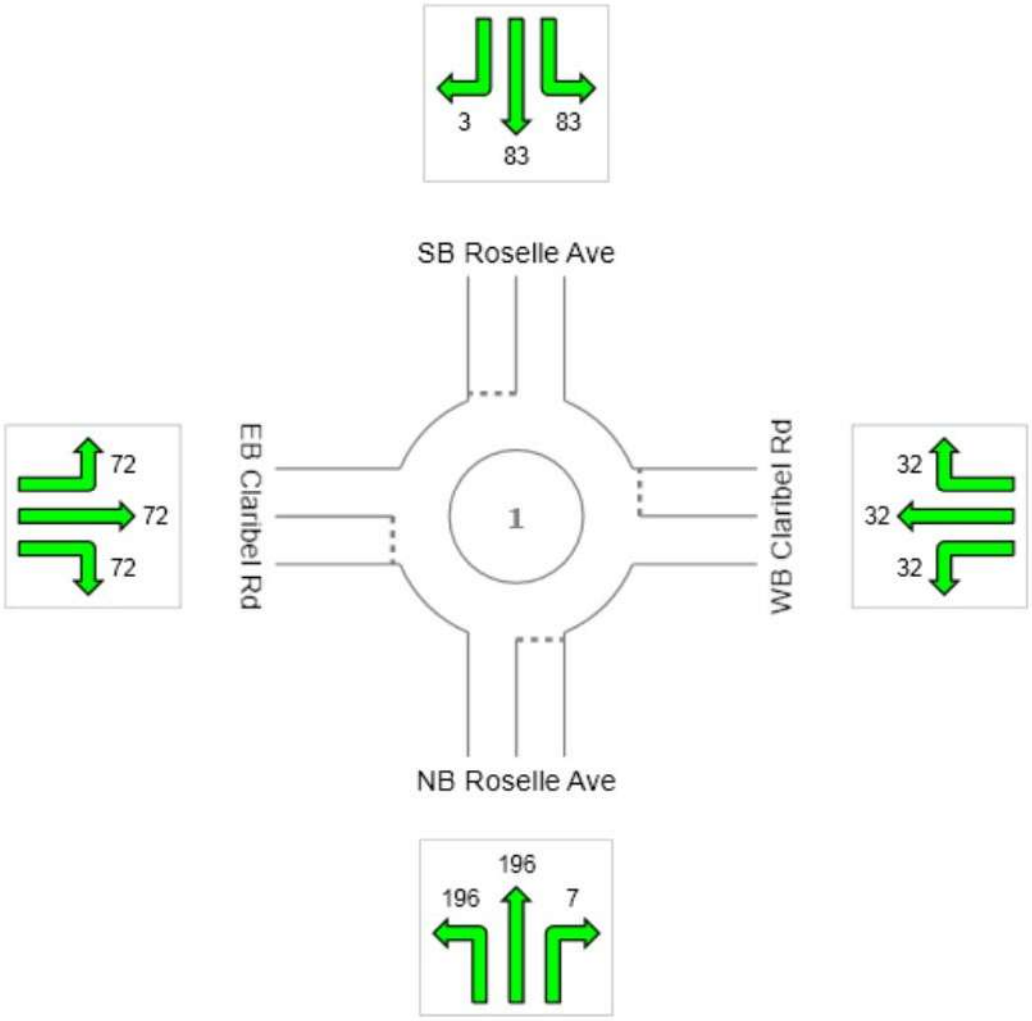
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Expanded
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	196	32	83	72	196



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

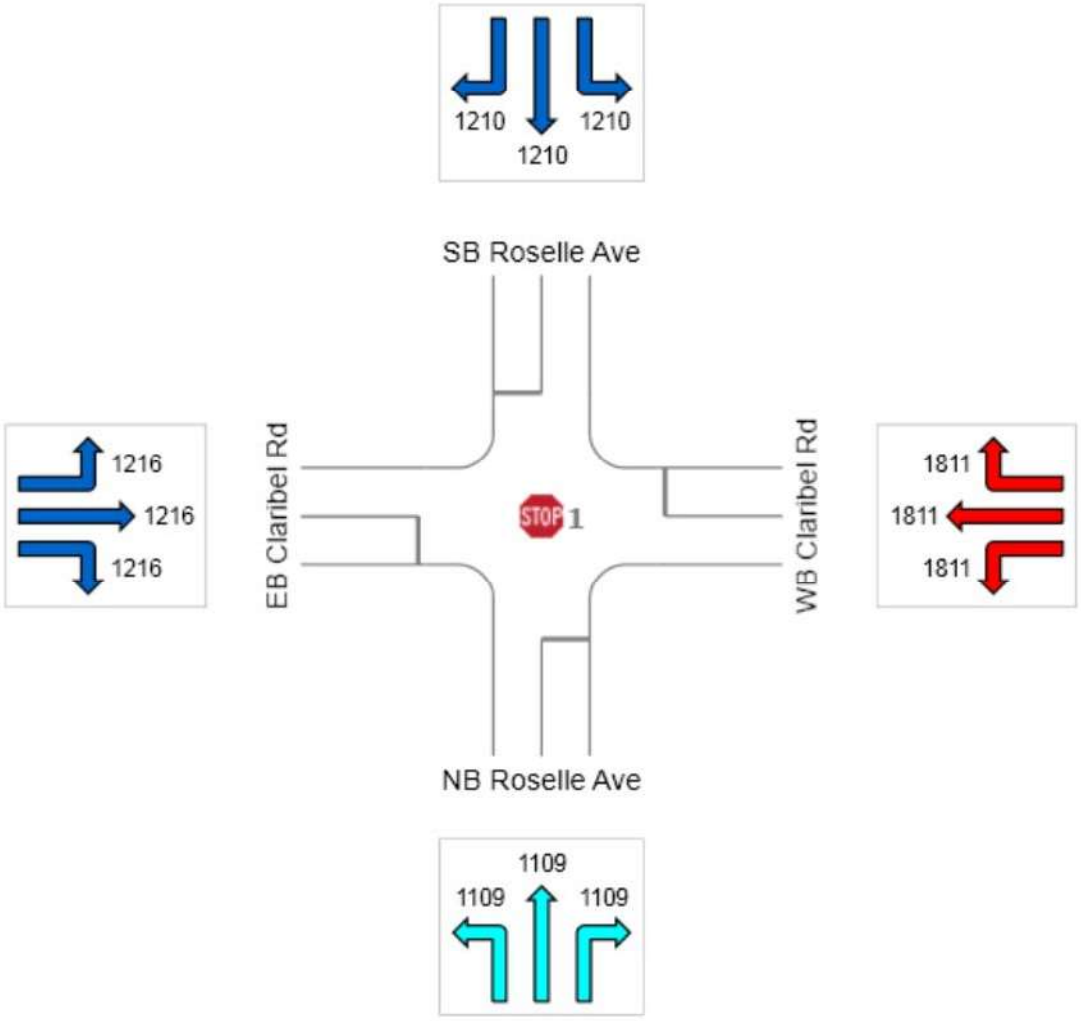
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) without NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
	1109	1811	1210	1216	1811



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

QUEUE DISTANCE (%ILE)

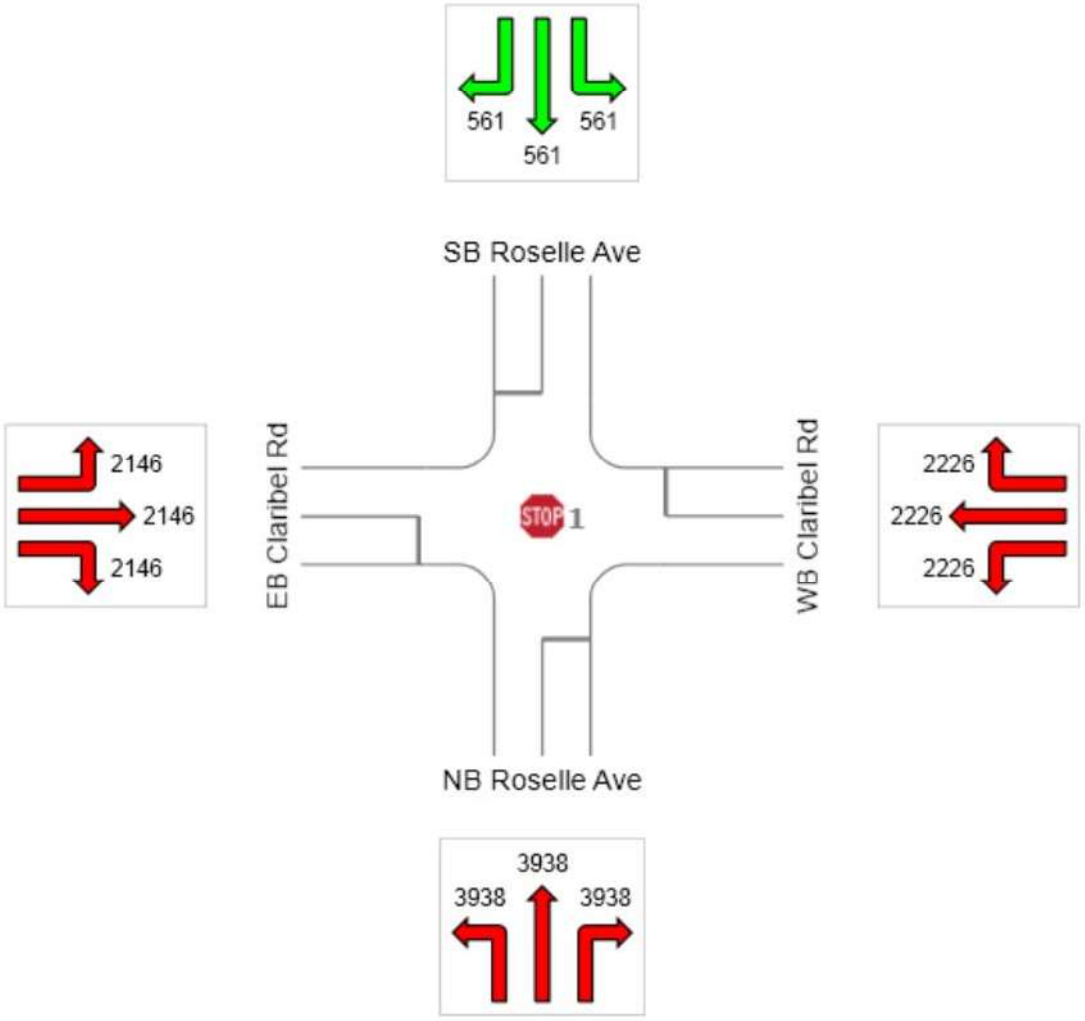
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) without NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Stop (All-Way)

All Movement Classes

	South	East	North	West	Intersection
	3938	2226	561	2146	3938



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

Some input data are outside the applicable data ranges for the AWSC capacity model. See the Diagnostics section in the Detailed Output report.

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	120	434	242	263	288	237	369	194	381
Average Queue (ft)	51	326	162	212	206	116	269	120	296
95th Queue (ft)	138	554	331	296	335	268	479	259	423
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)		32	0	3	0		14	0	27
Queuing Penalty (veh)		65	1	14	0		13	2	22

Intersection: 1: Roselle Ave & Claribel Rd

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	204	667	275	324	606	274	437	221	423
Average Queue (ft)	132	522	148	255	494	202	326	92	319
95th Queue (ft)	235	908	325	382	739	310	473	221	496
Link Distance (ft)		1092			3007		2648		2434
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		3							
Storage Bay Dist (ft)	180		250	300		250		200	
Storage Blk Time (%)	2	47	0	2	29	1	13		29
Queuing Penalty (veh)	15	154	0	13	85	7	36		17

QUEUE DISTANCE (%ILE)

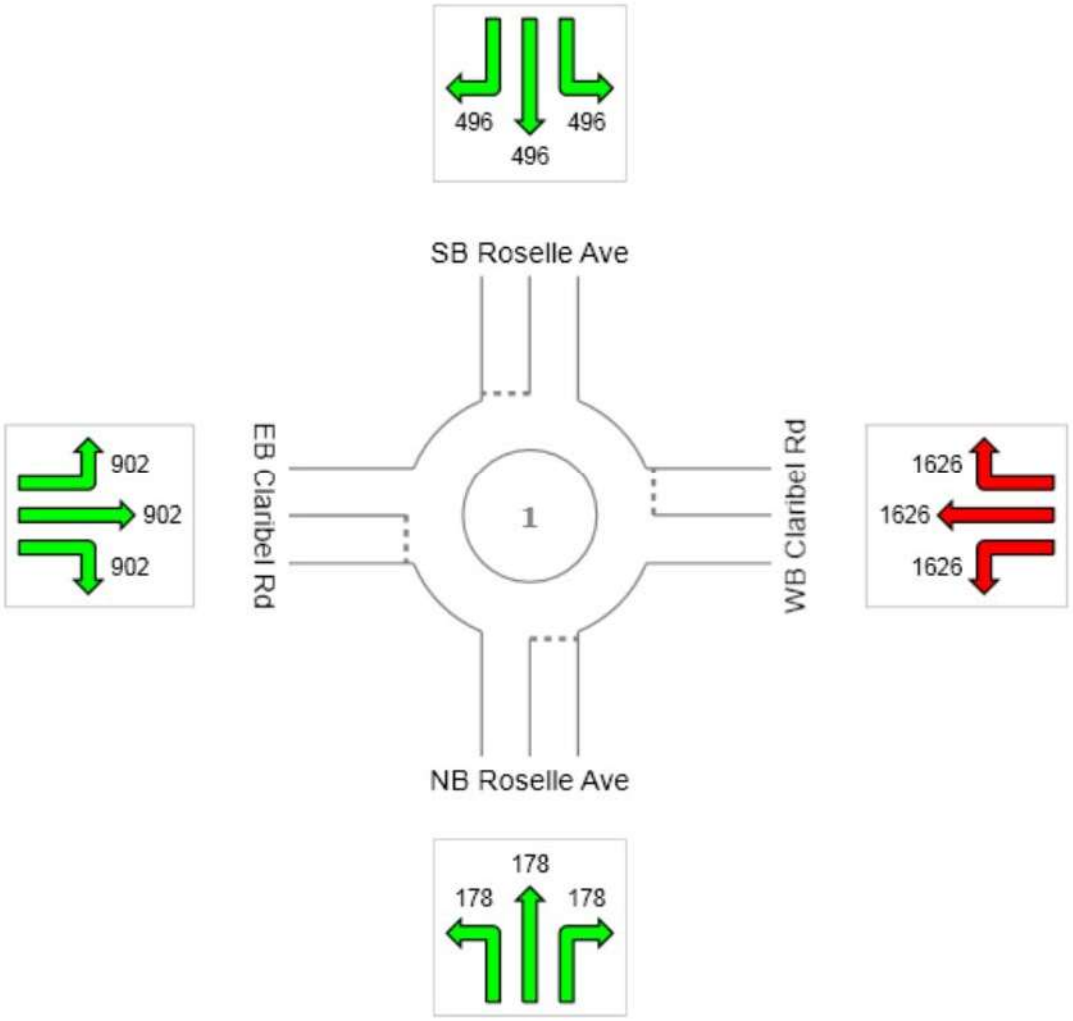
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	178	1626	496	902	1626



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

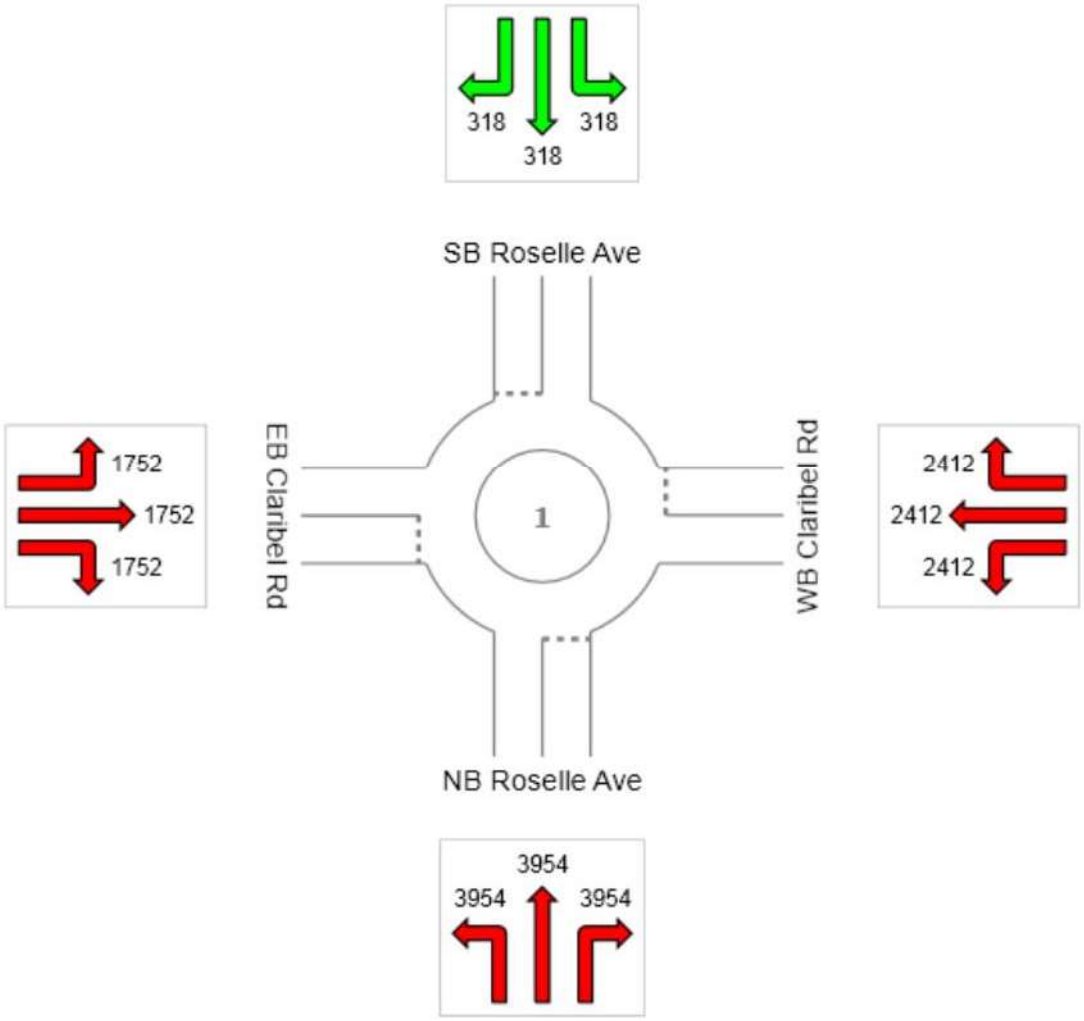
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	3954	2412	318	1752	3954



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

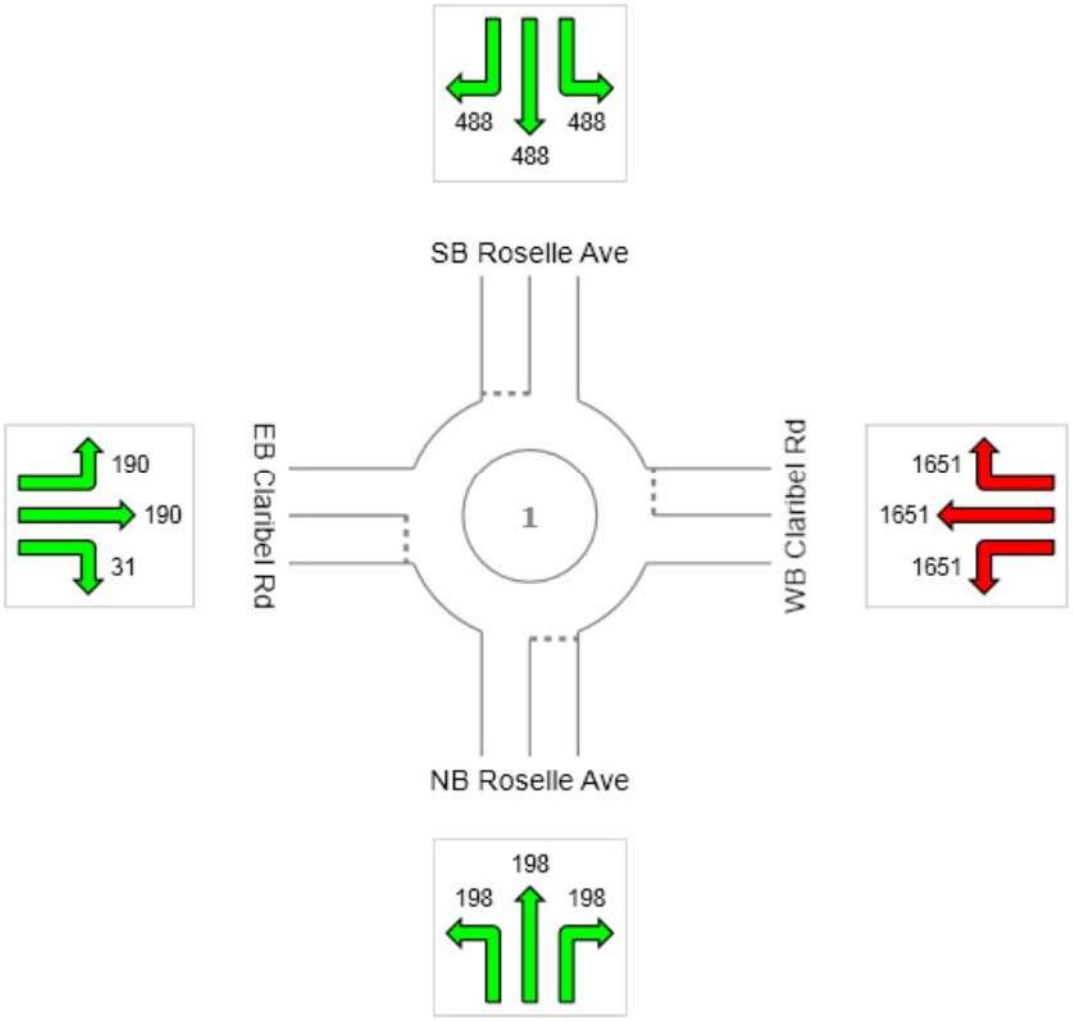
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Modified Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	198	1651	488	190	1651



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

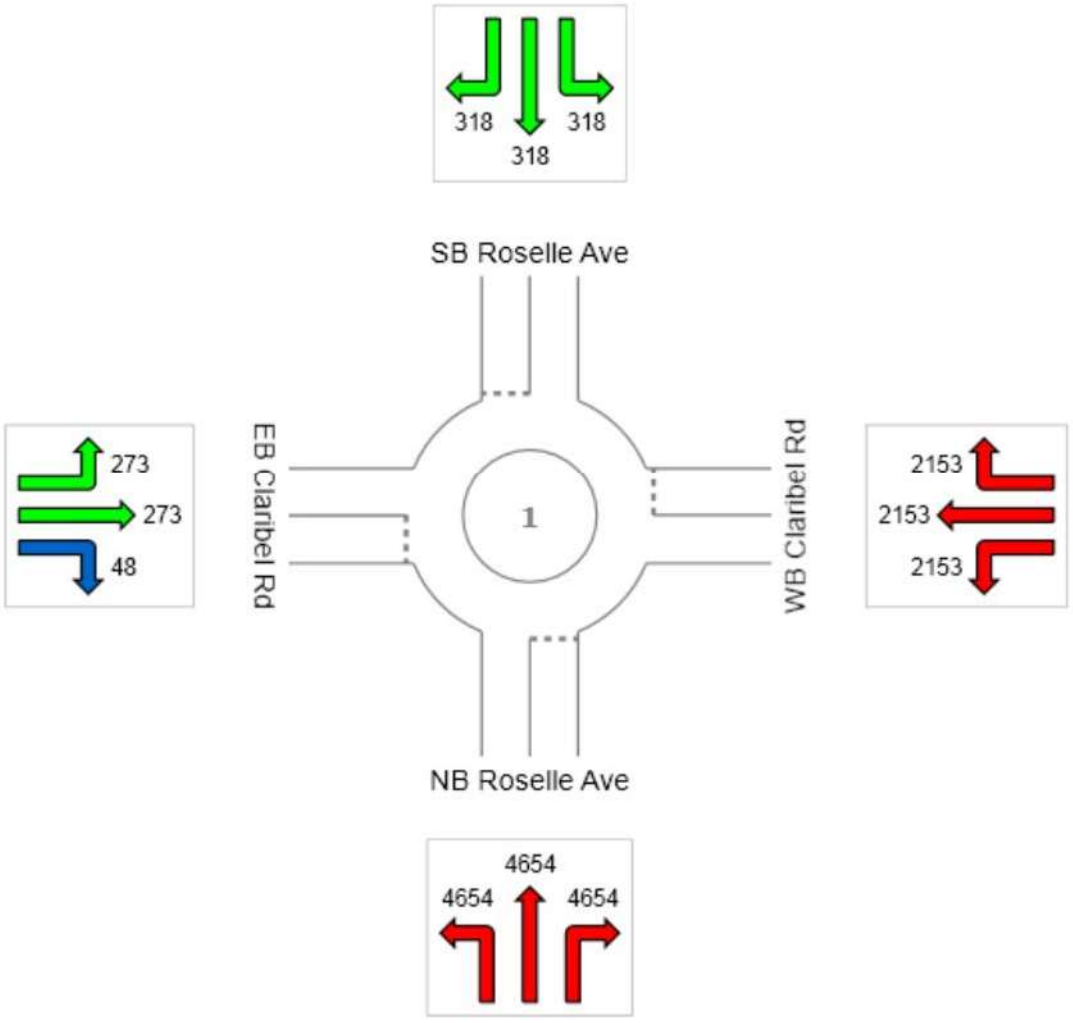
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Modified Single Lane
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	4654	2153	318	273	4654



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

QUEUE DISTANCE (%ILE)

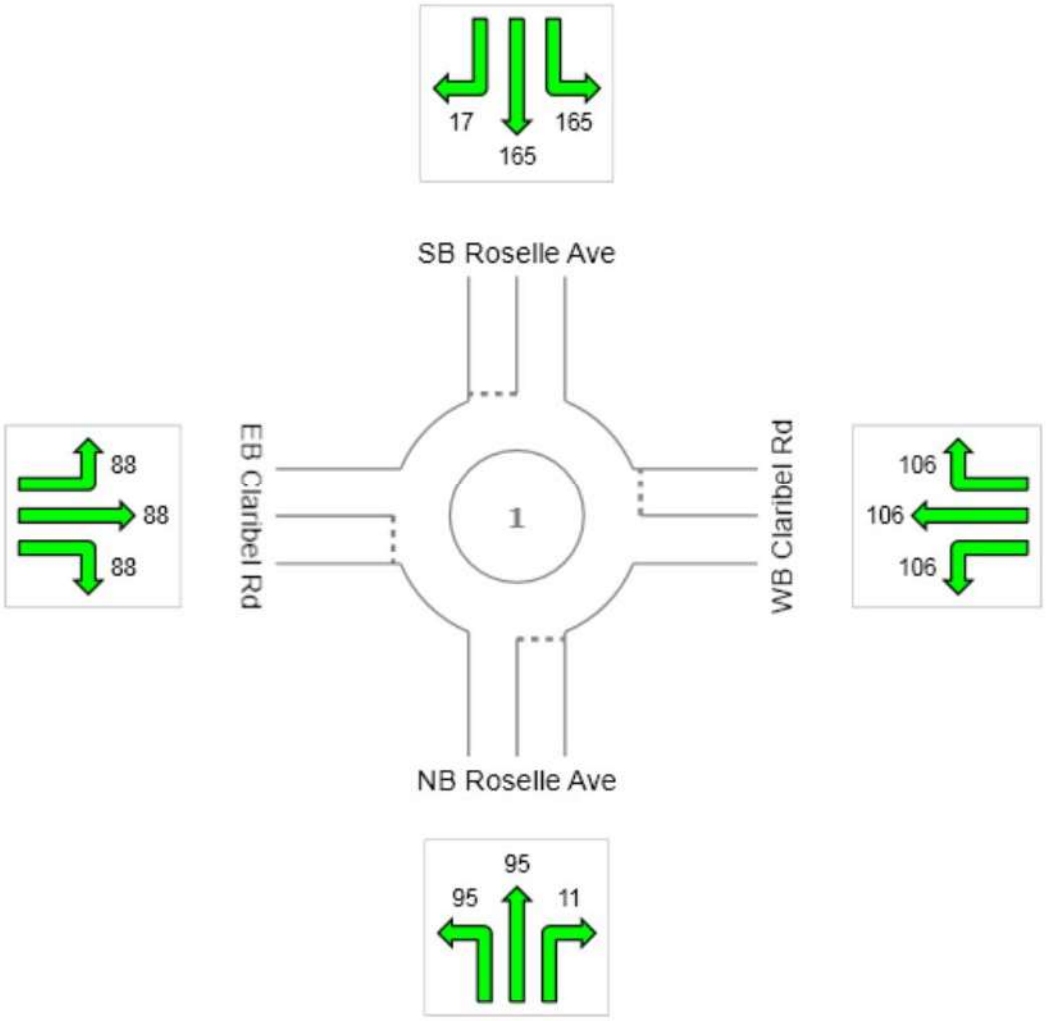
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	95	106	165	88	165



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

QUEUE DISTANCE (%ILE)

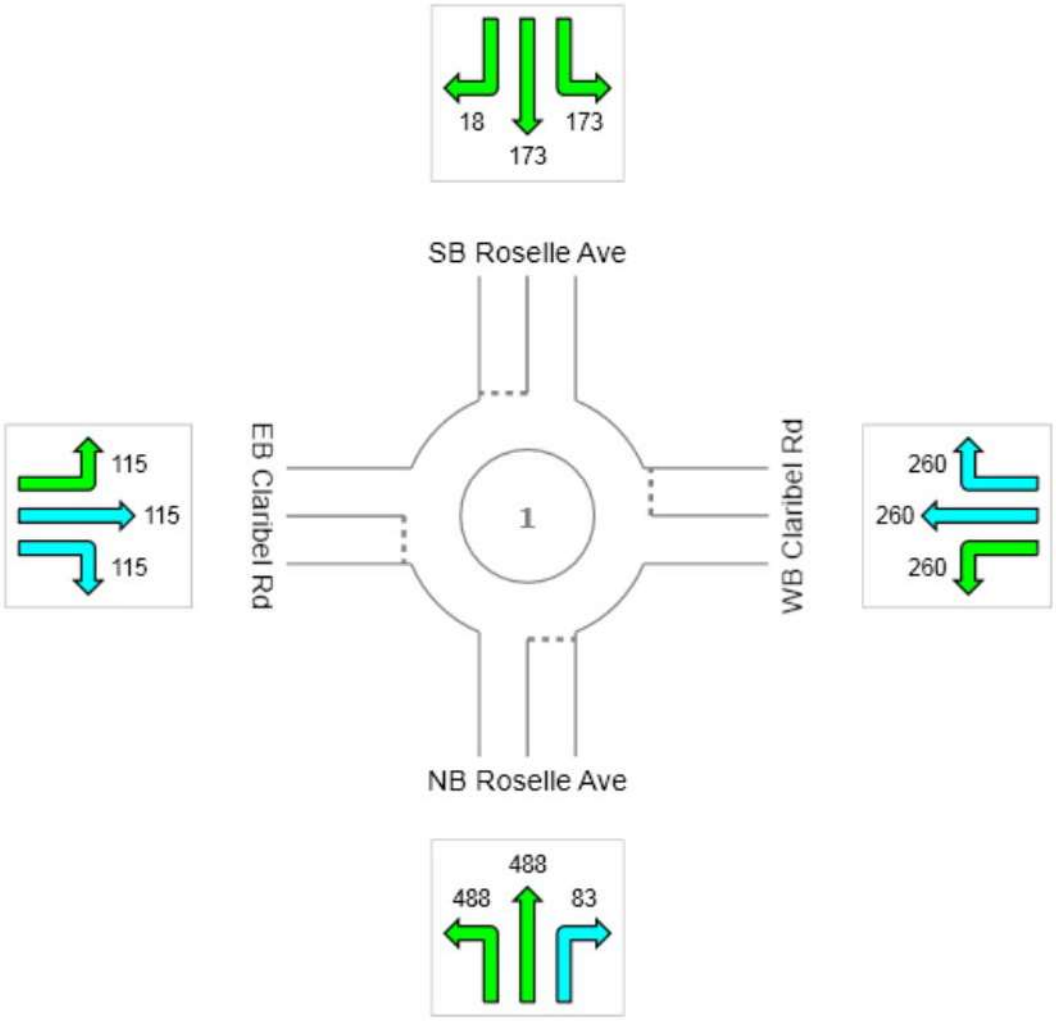
Largest 95% Back of Queue for any lane used by movement (feet)

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Vehicle Queue (%ile)	488	260	173	115	488



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0] Continuous

SIDRA INTERSECTION 6

Appendix G

Design Life Analysis

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) with NCC

AM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 14 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	163	5.0	0.613	11.9	LOS B	4.9	127.0	0.68	0.60	31.3
8	T1	409	5.0	0.613	11.9	LOS B	4.9	127.0	0.68	0.60	31.2
18	R2	58	5.0	0.613	11.9	LOS B	4.9	127.0	0.68	0.60	30.4
Approach		631	5.0	0.613	11.9	LOS B	4.9	127.0	0.68	0.60	31.2
East: WB Claribel Rd											
1	L2	81	8.0	0.835	29.9	LOS C	8.9	237.9	0.93	1.23	25.2
6	T1	425	8.0	0.835	29.9	LOS C	8.9	237.9	0.93	1.23	25.2
16	R2	75	8.0	0.835	29.9	LOS C	8.9	237.9	0.93	1.23	24.7
Approach		582	8.0	0.835	29.9	LOS C	8.9	237.9	0.93	1.23	25.2
North: SB Roselle Ave											
7	L2	54	5.0	0.999	59.4	LOS E	21.1	548.7	1.00	1.85	19.1
4	T1	572	5.0	0.999	59.4	LOS E	21.1	548.7	1.00	1.85	19.1
14	R2	42	5.0	0.999	59.4	LOS E	21.1	548.7	1.00	1.85	18.8
Approach		667	5.0	0.999	59.4	LOS E	21.1	548.7	1.00	1.85	19.1
West: EB Claribel Rd											
5	L2	43	8.0	0.762	25.3	LOS C	6.3	166.7	0.88	1.10	26.6
2	T1	169	8.0	0.762	25.3	LOS C	6.3	166.7	0.88	1.10	26.6
12	R2	269	8.0	0.762	25.3	LOS C	6.3	166.7	0.88	1.10	25.9
Approach		482	8.0	0.762	25.3	LOS C	6.3	166.7	0.88	1.10	26.2
All Vehicles		2362	6.4	0.999	32.5	LOS C	21.1	548.7	0.87	1.21	24.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) with NCC

PM Peak Hour
Short-Term (2026) Conditions with NCC Buildout
Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 8 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	189	5.0	0.906	36.2	LOS D	14.1	367.0	1.00	1.42	23.5
8	T1	465	5.0	0.906	36.2	LOS D	14.1	367.0	1.00	1.42	23.5
18	R2	53	5.0	0.906	36.2	LOS D	14.1	367.0	1.00	1.42	23.0
Approach		706	5.0	0.906	36.2	LOS D	14.1	367.0	1.00	1.42	23.4
East: WB Claribel Rd											
1	L2	116	8.0	0.792	27.5	LOS C	7.1	188.3	0.90	1.14	25.8
6	T1	328	8.0	0.792	27.5	LOS C	7.1	188.3	0.90	1.14	25.8
16	R2	65	8.0	0.792	27.5	LOS C	7.1	188.3	0.90	1.14	25.2
Approach		509	8.0	0.792	27.5	LOS C	7.1	188.3	0.90	1.14	25.7
North: SB Roselle Ave											
7	L2	75	5.0	0.770	24.2	LOS C	7.0	183.2	0.90	1.11	27.0
4	T1	420	5.0	0.770	24.2	LOS C	7.0	183.2	0.90	1.11	27.0
14	R2	40	5.0	0.770	24.2	LOS C	7.0	183.2	0.90	1.11	26.3
Approach		535	5.0	0.770	24.2	LOS C	7.0	183.2	0.90	1.11	26.9
West: EB Claribel Rd											
5	L2	39	8.0	0.970	51.2	LOS D	18.2	483.0	1.00	1.70	20.4
2	T1	410	8.0	0.970	51.2	LOS D	18.2	483.0	1.00	1.70	20.4
12	R2	229	8.0	0.970	51.2	LOS D	18.2	483.0	1.00	1.70	20.1
Approach		677	8.0	0.970	51.2	LOS D	18.2	483.0	1.00	1.70	20.3
All Vehicles		2428	6.5	0.970	35.9	LOS D	18.2	483.0	0.96	1.37	23.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) no NCC

AM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 6 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	136	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	29.1
8	T1	341	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	29.1
18	R2	145	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	28.4
Approach		622	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	28.9
East: WB Claribel Rd											
1	L2	201	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
6	T1	397	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
16	R2	83	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	23.8
Approach		682	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
North: SB Roselle Ave											
7	L2	76	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.9
4	T1	456	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.9
14	R2	71	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.5
Approach		603	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.8
West: EB Claribel Rd											
5	L2	36	8.0	0.884	39.2	LOS D	10.1	268.8	0.95	1.36	22.9
2	T1	312	8.0	0.884	39.2	LOS D	10.1	268.8	0.95	1.36	22.9
12	R2	193	8.0	0.884	39.2	LOS D	10.1	268.8	0.95	1.36	22.4
Approach		542	8.0	0.884	39.2	LOS D	10.1	268.8	0.95	1.36	22.7
All Vehicles		2448	6.5	0.970	35.6	LOS D	16.6	430.5	0.94	1.34	23.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) no NCC

PM Peak Hour
Short-Term (2026) Conditions without NCC Buildout
Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 0 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.2
8	T1	378	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.1
18	R2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	21.7
Approach		756	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.0
East: WB Claribel Rd											
1	L2	153	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.2
6	T1	429	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.2
16	R2	84	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	19.8
Approach		666	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.1
North: SB Roselle Ave											
7	L2	71	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.5
4	T1	320	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
14	R2	60	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	25.8
Approach		451	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
West: EB Claribel Rd											
5	L2	63	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	26.1
2	T1	365	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	26.1
12	R2	186	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	25.5
Approach		615	8.0	0.820	26.9	LOS C	8.9	236.7	0.92	1.18	25.9
All Vehicles		2487	6.5	0.972	38.0	LOS D	18.0	479.9	0.96	1.42	23.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2016 PM)

PM Peak Hour
Base (2016) Conditions
Modified Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 12 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	174	5.0	0.869	32.2	LOS C	11.3	293.0	0.98	1.33	24.4
8	T1	397	5.0	0.869	32.2	LOS C	11.3	293.0	0.98	1.33	24.4
18	R2	77	5.0	0.869	32.2	LOS C	11.3	293.0	0.98	1.33	23.9
Approach		648	5.0	0.869	32.2	LOS C	11.3	293.0	0.98	1.33	24.3
East: WB Claribel Rd											
1	L2	79	8.0	0.974	52.5	LOS D	18.2	484.6	1.00	1.72	20.1
6	T1	483	8.0	0.974	52.5	LOS D	18.2	484.6	1.00	1.72	20.1
16	R2	106	8.0	0.974	52.5	LOS D	18.2	484.6	1.00	1.72	19.8
Approach		667	8.0	0.974	52.5	LOS D	18.2	484.6	1.00	1.72	20.1
North: SB Roselle Ave											
7	L2	101	5.0	0.879	38.0	LOS D	10.2	264.5	0.96	1.36	23.1
4	T1	384	5.0	0.879	38.0	LOS D	10.2	264.5	0.96	1.36	23.1
14	R2	61	5.0	0.879	38.0	LOS D	10.2	264.5	0.96	1.36	22.6
Approach		547	5.0	0.879	38.0	LOS D	10.2	264.5	0.96	1.36	23.0
West: EB Claribel Rd											
5	L2	60	8.0	0.634	16.2	LOS B	4.4	117.7	0.79	0.90	29.7
2	T1	404	8.0	0.634	16.2	LOS B	4.4	117.7	0.79	0.90	29.7
12	R2	196	8.0	0.267	8.0	LOS A	1.1	29.6	0.62	0.61	32.3
Approach		660	8.0	0.634	13.8	LOS B	4.4	117.7	0.74	0.81	30.4
All Vehicles		2522	6.6	0.974	34.0	LOS C	18.2	484.6	0.92	1.30	23.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 AM) no NCC

AM Peak Hour
Short Term (2026) Conditions without NCC Buildout
Modified Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 6 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	136	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	29.1
8	T1	341	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	29.1
18	R2	145	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	28.4
Approach		622	5.0	0.717	17.5	LOS B	6.8	176.0	0.84	0.97	28.9
East: WB Claribel Rd											
1	L2	201	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
6	T1	397	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
16	R2	83	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	23.8
Approach		682	8.0	0.879	32.5	LOS C	12.0	318.2	0.98	1.33	24.3
North: SB Roselle Ave											
7	L2	76	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.9
4	T1	456	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.9
14	R2	71	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.5
Approach		603	5.0	0.970	54.5	LOS D	16.6	430.5	1.00	1.70	19.8
West: EB Claribel Rd											
5	L2	36	8.0	0.570	16.2	LOS B	3.3	87.4	0.78	0.88	29.8
2	T1	312	8.0	0.570	16.2	LOS B	3.3	87.4	0.78	0.88	29.8
12	R2	193	8.0	0.316	10.2	LOS B	1.3	34.4	0.69	0.69	31.4
Approach		542	8.0	0.570	14.1	LOS B	3.3	87.4	0.75	0.81	30.3
All Vehicles		2448	6.5	0.970	30.0	LOS C	16.6	430.5	0.90	1.22	25.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2026 PM) no NCC

PM Peak Hour
Short Term (2026) Conditions without NCC Buildout
Modified Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 0 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.1
8	T1	378	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.1
18	R2	189	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	21.6
Approach		756	5.0	0.944	42.1	LOS D	18.0	467.0	1.00	1.54	22.0
East: WB Claribel Rd											
1	L2	153	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.1
6	T1	429	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.1
16	R2	84	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	19.8
Approach		666	8.0	0.972	52.1	LOS D	18.0	479.9	1.00	1.71	20.1
North: SB Roselle Ave											
7	L2	71	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
4	T1	320	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.4
14	R2	60	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	25.8
Approach		451	5.0	0.752	25.7	LOS C	6.0	155.4	0.88	1.10	26.3
West: EB Claribel Rd											
5	L2	63	8.0	0.574	14.0	LOS B	3.6	97.0	0.75	0.83	30.5
2	T1	365	8.0	0.574	14.0	LOS B	3.6	97.0	0.75	0.83	30.5
12	R2	186	8.0	0.250	7.7	LOS A	1.0	27.5	0.61	0.59	32.4
Approach		615	8.0	0.574	12.1	LOS B	3.6	97.0	0.71	0.76	31.1
All Vehicles		2487	6.5	0.972	34.4	LOS C	18.0	479.9	0.91	1.31	23.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) with NCC

AM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 9 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	164	5.0	0.620	11.2	LOS B	4.8	125.9	0.60	0.42	31.6
8	T1	455	5.0	0.620	11.2	LOS B	4.8	125.9	0.60	0.42	31.6
18	R2	89	5.0	0.620	11.2	LOS B	4.8	125.9	0.60	0.42	30.7
Approach		708	5.0	0.620	11.2	LOS B	4.8	125.9	0.60	0.42	31.5
East: WB Claribel Rd											
1	L2	103	8.0	0.924	43.8	LOS D	13.2	349.9	0.99	1.51	21.9
6	T1	439	8.0	0.924	43.8	LOS D	13.2	349.9	0.99	1.51	21.8
16	R2	65	8.0	0.924	43.8	LOS D	13.2	349.9	0.99	1.51	21.4
Approach		607	8.0	0.924	43.8	LOS D	13.2	349.9	0.99	1.51	21.8
North: SB Roselle Ave											
7	L2	26	5.0	0.967	53.0	LOS D	16.7	434.8	1.00	1.69	20.2
4	T1	568	5.0	0.967	53.0	LOS D	16.7	434.8	1.00	1.69	20.2
14	R2	26	5.0	0.967	53.0	LOS D	16.7	434.8	1.00	1.69	19.9
Approach		620	5.0	0.967	53.0	LOS D	16.7	434.8	1.00	1.69	20.2
West: EB Claribel Rd											
5	L2	52	8.0	0.223	8.4	LOS A	0.9	23.2	0.65	0.65	32.5
2	T1	90	8.0	0.223	8.4	LOS A	0.9	23.2	0.65	0.65	32.5
12	R2	284	8.0	0.446	12.4	LOS B	2.2	58.6	0.73	0.78	30.5
Approach		426	8.0	0.446	11.0	LOS B	2.2	58.6	0.70	0.73	31.1
All Vehicles		2362	6.3	0.967	30.5	LOS C	16.7	434.8	0.82	1.09	24.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) with NCC

PM Peak Hour
Future (2042) Conditions with NCC Buildout
Modified Single Lane
Roundabout
Design Life Analysis (Capacity): Results for 1 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	212	5.0	0.992	51.9	LOS D	24.9	647.0	1.00	1.77	20.2
8	T1	539	5.0	0.992	51.9	LOS D	24.9	647.0	1.00	1.77	20.2
18	R2	63	5.0	0.992	51.9	LOS D	24.9	647.0	1.00	1.77	19.8
Approach		814	5.0	0.992	51.9	LOS D	24.9	647.0	1.00	1.77	20.1
East: WB Claribel Rd											
1	L2	173	8.0	0.621	18.7	LOS B	3.8	101.1	0.81	0.93	28.1
6	T1	173	8.0	0.621	18.7	LOS B	3.8	101.1	0.81	0.93	28.1
16	R2	22	8.0	0.621	18.7	LOS B	3.8	101.1	0.81	0.93	27.4
Approach		367	8.0	0.621	18.7	LOS B	3.8	101.1	0.81	0.93	28.1
North: SB Roselle Ave											
7	L2	43	5.0	0.672	17.3	LOS B	5.3	137.2	0.83	0.96	29.4
4	T1	443	5.0	0.672	17.3	LOS B	5.3	137.2	0.83	0.96	29.4
14	R2	22	5.0	0.672	17.3	LOS B	5.3	137.2	0.83	0.96	28.6
Approach		508	5.0	0.672	17.3	LOS B	5.3	137.2	0.83	0.96	29.4
West: EB Claribel Rd											
5	L2	22	8.0	0.653	18.4	LOS B	4.5	118.6	0.82	0.95	29.0
2	T1	410	8.0	0.653	18.4	LOS B	4.5	118.6	0.82	0.95	29.0
12	R2	259	8.0	0.392	10.9	LOS B	1.8	48.3	0.70	0.72	31.0
Approach		691	8.0	0.653	15.5	LOS B	4.5	118.6	0.77	0.86	29.7
All Vehicles		2380	6.3	0.992	28.9	LOS C	24.9	647.0	0.87	1.20	25.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 AM) no NCC

AM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout
Design Life Analysis (Capacity): Results for 6 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	106	5.0	0.683	16.3	LOS B	5.5	144.3	0.84	0.98	29.7
8	T1	473	5.0	0.683	16.3	LOS B	5.5	144.3	0.84	0.98	29.6
18	R2	95	5.0	0.119	5.8	LOS A	0.5	13.4	0.62	0.56	33.6
Approach		674	5.0	0.683	14.8	LOS B	5.5	144.3	0.81	0.92	30.1
East: WB Claribel Rd											
1	L2	410	8.0	0.748	22.8	LOS C	6.3	166.9	0.87	1.06	26.3
6	T1	507	8.0	0.748	22.8	LOS C	6.3	166.9	0.87	1.06	27.3
16	R2	109	8.0	0.748	22.8	LOS C	6.3	166.9	0.87	1.06	26.8
Approach		1026	8.0	0.748	22.8	LOS C	6.3	166.9	0.87	1.06	26.8
North: SB Roselle Ave											
7	L2	97	5.0	1.000	64.0	LOS E	17.7	460.9	1.00	1.90	18.3
4	T1	483	5.0	1.000	64.0	LOS E	17.7	460.9	1.00	1.90	18.3
14	R2	109	5.0	0.209	9.8	LOS A	0.8	22.0	0.73	0.73	31.6
Approach		688	5.0	1.000	55.4	LOS E	17.7	460.9	0.96	1.71	19.6
West: EB Claribel Rd											
5	L2	48	8.0	0.777	33.6	LOS C	5.5	145.1	0.87	1.13	24.2
2	T1	483	8.0	0.777	33.6	LOS C	5.5	145.1	0.87	1.13	24.2
12	R2	193	8.0	0.777	33.6	LOS C	5.5	145.1	0.87	1.13	23.7
Approach		724	8.0	0.777	33.6	LOS C	5.5	145.1	0.87	1.13	24.1
All Vehicles		3111	6.7	1.000	30.8	LOS C	17.7	460.9	0.88	1.19	24.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Claribel Rd & Roselle Ave (2042 PM) no NCC

PM Peak Hour
Future (2042) Conditions without NCC Buildout
Expanded
Roundabout
Design Life Analysis (Capacity): Results for 1 years

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Roselle Ave											
3	L2	294	5.0	0.985	49.4	LOS D	22.6	587.3	1.00	1.81	20.6
8	T1	536	5.0	0.985	49.4	LOS D	22.6	587.3	1.00	1.81	20.6
18	R2	410	5.0	0.520	12.0	LOS B	3.4	87.4	0.79	0.86	30.7
Approach		1241	5.0	0.985	37.0	LOS D	22.6	587.3	0.93	1.49	23.1
East: WB Claribel Rd											
1	L2	305	8.0	0.940	55.1	LOS E	11.6	308.4	0.95	1.55	19.4
6	T1	547	8.0	0.940	55.1	LOS E	11.6	308.4	0.95	1.55	19.7
16	R2	95	8.0	0.940	55.1	LOS E	11.6	308.4	0.95	1.55	19.4
Approach		946	8.0	0.940	55.1	LOS E	11.6	308.4	0.95	1.55	19.5
North: SB Roselle Ave											
7	L2	63	5.0	0.855	39.8	LOS D	7.5	195.9	0.92	1.30	22.8
4	T1	379	5.0	0.855	39.8	LOS D	7.5	195.9	0.92	1.30	22.8
14	R2	84	5.0	0.184	10.6	LOS B	0.7	18.6	0.75	0.75	31.3
Approach		526	5.0	0.855	35.1	LOS D	7.5	195.9	0.89	1.21	23.8
West: EB Claribel Rd											
5	L2	95	8.0	0.681	21.2	LOS C	4.6	123.3	0.84	0.99	27.7
2	T1	473	8.0	0.681	21.2	LOS C	4.6	123.3	0.84	0.99	27.8
12	R2	252	8.0	0.681	21.2	LOS C	4.6	123.3	0.84	0.99	27.2
Approach		820	8.0	0.681	21.2	LOS C	4.6	123.3	0.84	0.99	27.6
All Vehicles		3533	6.5	0.985	37.9	LOS D	22.6	587.3	0.91	1.35	22.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.