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Initial Study/Mitigated Negative Declaration/Initial Environmental Checklist

Pioneer Trail/US Highway 50 Intersection Safety Improvement Project

Community of Meyers, South Lake Tahoe, CA

July 2021

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Pioneer Trail/US Highway 50 Intersection Safety Improvement Project

Community of Meyers, South Lake Tahoe, CA

Initial Study/Mitigated Negative Declaration/Initial Environmental Checklist

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Executive Summary

The County of El Dorado (County) as the project sponsor and Lead Agency, in cooperation with the California Department of Transportation, is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-leg modern roundabout as part of the Pioneer Trail/US Highway 50 Intersection Safety Improvement Project (project).

The proposed project would remove the four existing traffic signals at the US 50/Pioneer Trail intersection and replace the intersection with a three-leg modern roundabout. The roundabout would include standard roundabout geometric features such as shared-use paths, crosswalks, splitter islands, truck apron with central island, and landscape buffer between the circulatory roadway and shared-use path. The project would also construct permanent site drainage improvements to protect water quality, such as an infiltration basin. **Figure ES-1** on the following page shows an overview of the proposed project.

Once constructed, the project would improve safety and mobility for all modes of travel, include lighting and signage, reduce reliance on private automobiles, provide multimodal transportation improvements like visible crosswalks and a shared-use path for pedestrian and bicycle movements, provide opportunity for future growth of transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the project would close a major gap in the area's active transportation system by providing full access for non-motorist users to the neighboring amenities.

POTENTIAL IMPACTS

Based on the environmental evaluation performed for this Initial Study/Initial Environmental Checklist, the proposed project would have:

- ***No Impact*** on Mineral Resources, Population and Housing, Public Services, or Recreation.
- ***Less Than Significant Impact*** on Aesthetics, Air Quality, Energy, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Transportation, Utilities and Service Systems, and Wildfire.
- ***Less Than Significant Impact with Mitigation Incorporated*** on Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Noise, and Tribal Cultural Resources.

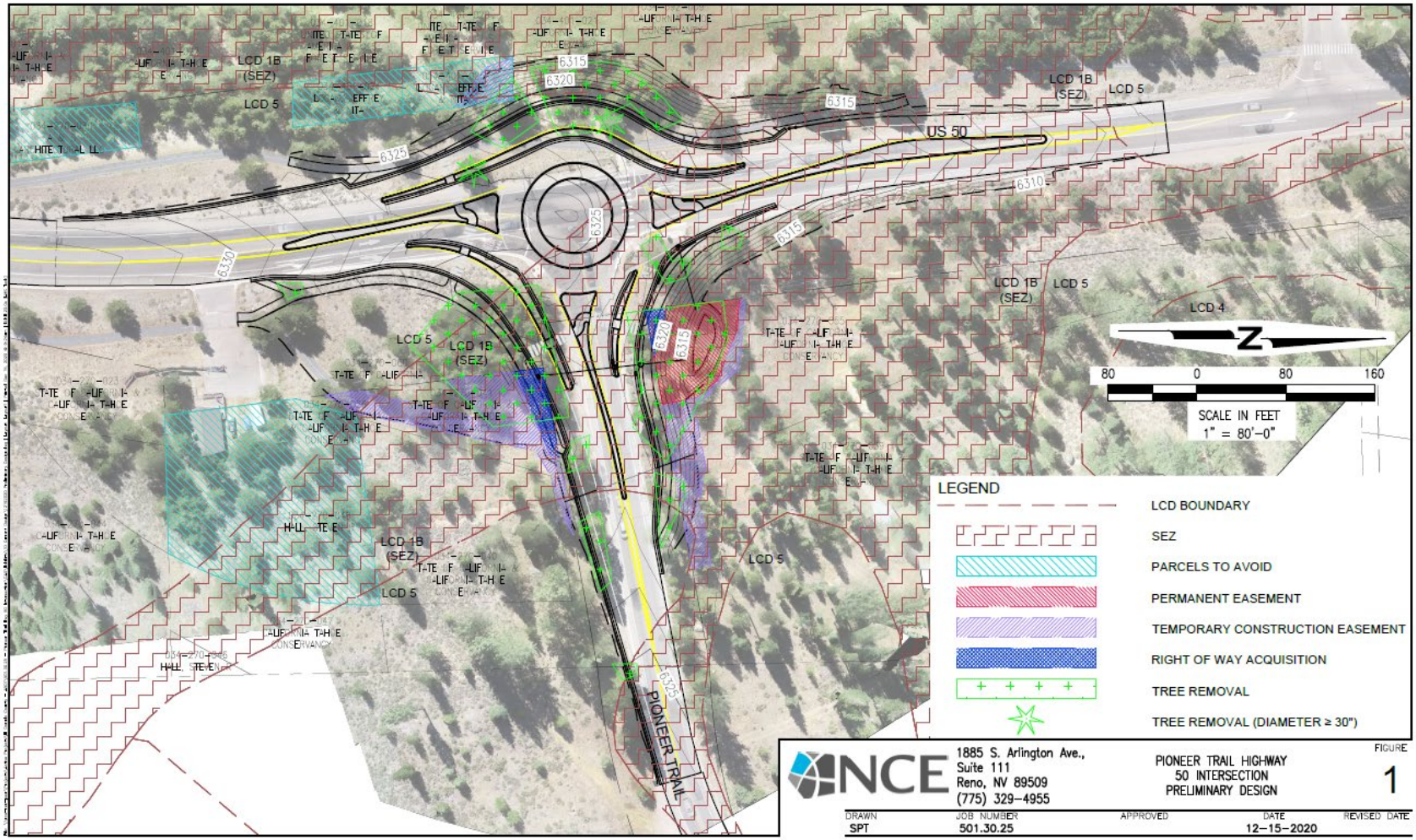


Figure ES-1. Project Overview

MITIGATION MEASURES

The County has agreed to implement the following mitigation measures to reduce project impacts to a "Less than Significant" level:

- **Mitigation Measure FR-1: Tree Removal Assessment**. Prior to final design development, the County shall coordinate with TRPA to determine if proposed tree removal qualifies as substantial removal. Should TRPA determine substantial removal would occur, as set forth in TRPA Code subparagraph 61.1.8, the County shall submit a harvest/tree removal plan prepared by a qualified forester and develop a conservation plan with area to be reforested/protected as required by TRPA. The plans, as approved by TRPA, shall become a part of the project and prescriptions contained in the plan shall be conditions of approval.
- **Mitigation Measure BIO-1: Pre-construction Avian Survey**. If any construction activities (e.g., grubbing or grading) are scheduled during the bird nesting season (typically defined by the California Department of Fish and Wildlife [CDFW] as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist, as determined by TRPA or CDFW, to conduct a pre-construction survey of the project area to include a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests appropriate to the conditions found, and locate any other special status species. The pre-construction survey shall be conducted no more than 10 days prior to the implementation of construction activities (including staging and equipment storage). Any special status species (including migratory birds) shall not be disturbed unless under the direction provided by a qualified biologist. If an active nest is found during construction, disturbance shall not occur until young have fledged or under the direction of a qualified biologist.
- **Mitigation Measure CR-1: Environmentally Sensitive Area (ESA) Action Plan**. The County shall implement the ESA Action Plan, and ensure the ESA is delineated on Contractor's project plans and delineated in the field by use of high-visibility orange fencing to avoid project impacts from encroaching into this boundary.
- **Mitigation Measure CR-2: Follow CA Health and Safety Code Section 7050.5 Procedures for Inadvertent Human Remain Discoveries.** Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the

human remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission, which would determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

- **Mitigation Measure GEO-1: SEZ Restoration Credit for New Trail Disturbance.** The TRPA Code Regional Plan Update and the Water Quality Control Plan for the Lake Tahoe Basin require new disturbance in a stream environment zone (SEZ) meeting certain criteria to be offset with SEZ restoration at a 1:1.5 ratio. To mitigate the impact to SEZ, the County will utilize SEZ restoration credits from projects previously restored and banked.
- **Mitigation Measure HAZ-1: Develop Lead Compliance Plan.** The Contractor shall develop and implement a Lead Compliance Plan (LCP). The LCP shall outline requirements mandated in 8 California Code of Regulations (CCR) 1532.1, Lead, to ensure the risks of potential worker exposure to inorganic lead through inhalation of airborne dust or ingestion lead from soils contaminated with aerially deposited lead are mitigated. Additional components of the LCP shall include:
    - Prior to performing any excavation work at the locations containing material classified as hazardous, employees and subcontractors shall complete a safety training program that meets 29 Code of Federal Regulations 1910.120 and 8 CCR 5192 covering the potential hazards as identified.
    - Contractor shall educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling, containment, and disposal procedures.
    - Contractor shall hold regular meetings to discuss and reinforce contaminated soil handling, containment, and disposal procedures (incorporate into regular safety meetings and tailgates).
- **Mitigation Measure NOI-1: Implement Noise-limiting Procedures**
    - Project construction activities shall be limited to the hours between 8:00 a.m. and 6:30 p.m. Any exceptions to these hours shall be evaluated on a case-by-case basis and require prior approval by the County and TRPA to ensure the activity is not injurious or disturbing to the health, safety, and general welfare of persons or property in the neighborhood, and the general welfare of the region, and the contractor will take reasonable steps to protect against such injury.

- All internal combustion engines used for construction shall be fitted with manufacturer-recommended mufflers. No equipment shall have an unmuffled exhaust.
- Residents adjacent to proposed construction activities shall be given advance notice of project construction schedules and shall be notified that substantial temporary increases in local noise levels will occur during project construction.
- To the greatest extent possible, nighttime construction work will be limited to the portion of the project site furthest from the residences.
- Generators and compressors required during project construction shall be located as far as possible from existing residents and, if necessary, shielded from view of those residences by portable noise barriers.

- **Mitigation Measure TCR-1: Continue Consultation with Washoe Tribe.** Construction shall cease if a potential cultural resource is inadvertently discovered during construction, and the Washoe Tribe shall be contacted to continue consultation. Construction shall not resume until consultation is considered concluded when either of the following occurs, pursuant to PRC 21080.3.2(b): 1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

List of Abbreviations

AADT	annual average daily traffic
AB	Assembly Bill
ADI	Area of Direct Impact
ADL	aerially deposited lead
AII	Area of Indirect Impact
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQMD	Air Quality Management District
ASR	Archaeological Survey Report
Basin	Lake Tahoe Basin
bgs	below ground surface
BMP	best management practice
BSA	Biological Study Area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalency Levels
CO_2e	carbon dioxide equivalent
County	County of El Dorado
CRHR	California Register of Historical Resources
CTC	California Tahoe Conservancy
CWA	Clean Water Act
dbh	diameter at breast height
DTSC	Department of Toxic Substances Control
EIP	Environmental Improvement Program
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
EPC	exposure point concentration
ESA	Environmentally Sensitive Area
ETCC	Environmental Threshold Carrying Capacity

FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GHG	greenhouse gas
GIS	geographic information system
HPSR	Historic Property Survey Report
IEC	Initial Environmental Checklist
ISA	Initial Site Assessment
IPaC	Information Planning and Conservation
IS	Initial Study
lbs	pounds
LCD	Land Capability District
LCP	Lead Compliance Plan
LCV	Land Capability Verification
LOS	Level of Service
LSA	Lake or Streambed Alteration
LTAB	Lake Tahoe Air Basin
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilogram
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NES	Natural Environment Study
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NWPR	Navigable Waters Protection Rule
OPR	Governor's Office of Planning and Research
PAC	Public Awareness Campaign
PAS	Plan Area Statement
PIO	Public Information Officer
PM	particulate matter
PRC	Public Resources Code

project	Pioneer Trail/US Highway 50 Intersection Safety Improvement Project
RCEM	Roadway Construction Emissions Model
ROG	reactive organic gases
ROW	right-of-way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
SER	Standard Environmental Reference
SEZ	Stream Environment Zone
SF	Square Feet
SHS	State Highway System
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SQIP	Scenic Quality Improvement Plan
SR	State Route
SSS	special status species
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
TMPO	Tahoe Metropolitan Planning Organization
TOA	Traffic Operations Analysis
TRPA	Tahoe Regional Planning Agency
TRPA Code	TRPA Code of Ordinances
$\mu g/m^3$	micrograms per cubic meter
US 50	US Highway 50
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VHFHSZ	Very High Fire Hazard Severity Zones
VMT	vehicle miles travelled
WOUS	Waters of the United States

Section 1 Project Information

Section 1	Project Information
1. Project title:	Pioneer Trail/US Highway 50 Intersection Safety Improvement Project
2. Lead agency name and address:	Department of Transportation 924B Emerald Bay Road South Lake Tahoe, CA 96150
3. Contact person and phone number:	Mr. Donaldo Palaroan, P.E. (530) 573-7920
4. Project location:	Community of Meyers, South Lake Tahoe, CA
5. Project sponsor's name and address:	County of El Dorado Department of Transportation 924B Emerald Bay Road South Lake Tahoe, CA 96150
6. General Plan designations:	Meyers Forest PAS – Conservation
7. Zoning:	Meyers Forest
8. Description of project:	Roadway safety and circulation improvement project
9. Surrounding land uses and setting:	Transportation corridor, residential community, and forest land
10. Other public agencies whose approval is required:	Tahoe Regional Planning Agency, California Department of Transportation

Section 1	Project Information
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?	Native American consultation was conducted for the project. The Washoe Tribe was identified as the representative for the project. The Washoe Tribe stated no known concerns for tribal cultural resources associated with the site.

Section 2 Introduction

2.1 FOCUS OF THE ENVIRONMENTAL REVIEW

2.1.1 California Environmental Quality Act

The County of El Dorado (County), as the project sponsor and Lead Agency, in cooperation with the California Department of Transportation (Caltrans) and the Tahoe Regional Planning Agency (TRPA) as Responsible Agencies, has prepared this Draft Initial Study (IS) pursuant to the California Environmental Quality Act (CEQA) for the proposed Pioneer Trail/US Highway 50 Intersection Safety Improvement Project (project). This IS, combined with the TRPA required Initial Environmental Checklist (IEC) discussed below, is an informational document provided to help the public and decision-makers understand the potential effects the project may have on the environment, and how potential adverse effects may be mitigated. Whereas this document has identified potentially significant impacts that can be reduced to less than significant with the adoption of mitigation measures, a Mitigated Negative Declaration (MND) has been prepared.

The Notice of Intent to Adopt a Mitigated Negative Declaration provides notice to interested agencies and the public that it is the County's intent to adopt an MND and, pending public review, expects to determine from this IS/IEC that the proposed project would not have a significant effect on the environment as mitigated. This Public Review Draft IS/MND/IEC is subject to modification based on comments received by interested agencies and the public.

2.1.2 California Department of Transportation

As owner-operator of the State Highway System (SHS), Caltrans is responsible for ensuring that improvement projects on the SHS comply with federal and State environmental laws and regulations.

Caltrans has designated the role of lead agency to the County and serves as a Responsible Agency under CEQA; Caltrans must approve all technical studies and environmental documents before the project can proceed. Caltrans provides guidance for implementing regulations, as well as recommended report content and format, in the *Standard Environmental Reference* (SER), which is online at http://www.dot.ca.gov/ser/. This guidance was used to develop supporting technical studies and CEQA topic analysis for the proposed project.

2.1.3 Tahoe Regional Planning Agency

The County has prepared this IEC pursuant to the TRPA Code of Ordinances (TRPA Code; TRPA 2020a) requirement for environmental documentation. The TRPA Code stipulates that TRPA shall use either an IEC checklist or environmental assessment

to determine whether an environmental impact statement shall be prepared for a project. For an IEC checklist, the applicant shall submit the following (TRPA Code Section 3.3.1):

a. The applicant shall describe and evaluate the significance of all impacts receiving "yes" answers.

b. The applicant shall describe and evaluate the significance of all impacts receiving "no with mitigation" answers and shall describe in detail, the mitigation measures proposed to mitigate these impacts to a less than significant level.

2.2 SUMMARY OF FINDINGS

Based on the environmental evaluation performed for this IS/IEC (Section 4), the proposed project would have:

- ***No Impact*** on Mineral Resources, Population and Housing, Public Services, or Recreation.
- ***Less Than Significant Impact*** on Aesthetics, Air Quality, Energy, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Transportation, Utilities and Service Systems, and Wildfire.
- ***Less Than Significant Impact with Mitigation Incorporated*** on Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Noise, and Tribal Cultural Resources. The project will implement mitigation measures as described herein to reduce potential impacts to a Less Than Significant level.

No potentially significant impacts that could not be mitigated were identified.

2.3 REQUIRED PERMITS AND ADDITIONAL APPROVALS

2.3.1 Permits and Approvals

The project would obtain approval from or comply with the following:

- National Pollution Discharge Elimination System (NPDES) Construction Storm Water NPDES Permit for the Tahoe Basin (Order No. R6T-2016-0010 NPDES No. CAG616002)
- TRPA Project Permit
- TRPA Soils/Hydrology Scoping Report Application
- Lahontan Regional Water Quality Board (RWQCB) Waste Discharge Requirements

- California Department of Fish and Wildlife (CDFW) Section 1600 Lake or Streambed Alteration Notification
- California Tahoe Conservancy (CTC) grant of easement and/or license agreement
- Department of Forestry and Fire Protection (CAL FIRE) Less Than 3 Acre Conversion Exemption

2.3.2 Responsible Agencies

- TRPA
- Caltrans
- CTC

2.4 LEAD AGENCY DETERMINATION

Based on 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.

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

__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

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

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

_____ _____

Donaldo Palaroan, P.E. Date
Senior Civil Engineer
County of El Dorado

Section 3 Project Description

The County of El Dorado (County) as the project sponsor and Lead Agency, in cooperation with Caltrans, is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 (SR 89) and Pioneer Trail intersection in Meyers, California, into a three-leg modern roundabout as part of the Pioneer Trail/US Highway 50 Intersection Safety Improvement Project (project).

The proposed project would remove the four existing traffic signals at the US 50/Pioneer Trail intersection and replace the intersection with a three-leg modern roundabout. The roundabout would include standard roundabout geometric features such as shared-use paths, crosswalks, splitter islands, truck apron with central island, and landscape buffer between the circulatory roadway and shared-use path. The project would also construct permanent site drainage improvements to protect water quality, such as an infiltration basin.

Once constructed, the project would improve safety and mobility for all modes of travel, include lighting and signage, reduce reliance on private automobiles, provide multimodal transportation improvements like visible crosswalks and a shared-use path for pedestrian and bicycle movements, provide opportunity for future growth of transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the project would close a major gap in the area's active transportation system by providing full access for non-motorist users to the neighboring amenities.

3.1 PROJECT LOCATION

The project is located in eastern El Dorado County, California, in the Lake Tahoe Basin (Basin). Specifically, the project is located in the community of Meyers in South Lake Tahoe in the central portion of Sections 20 and 29 of Township 12 North and Range 18 East (Mt. Diablo Meridian) and is within the U.S. Geological Survey Echo Lake 7.5 minute quadrangle (**Figure 1**).

The project area covers a total of 13 acres, including 0.35 miles of US 50/SR 89 and 0.13 miles of Pioneer Trail, and is generally surrounded by forested open space (**Figure 2**).

Several potential staging areas are being considered for this project (refer to Section 3.4.8 below), and these locations are considered a part of the project area.

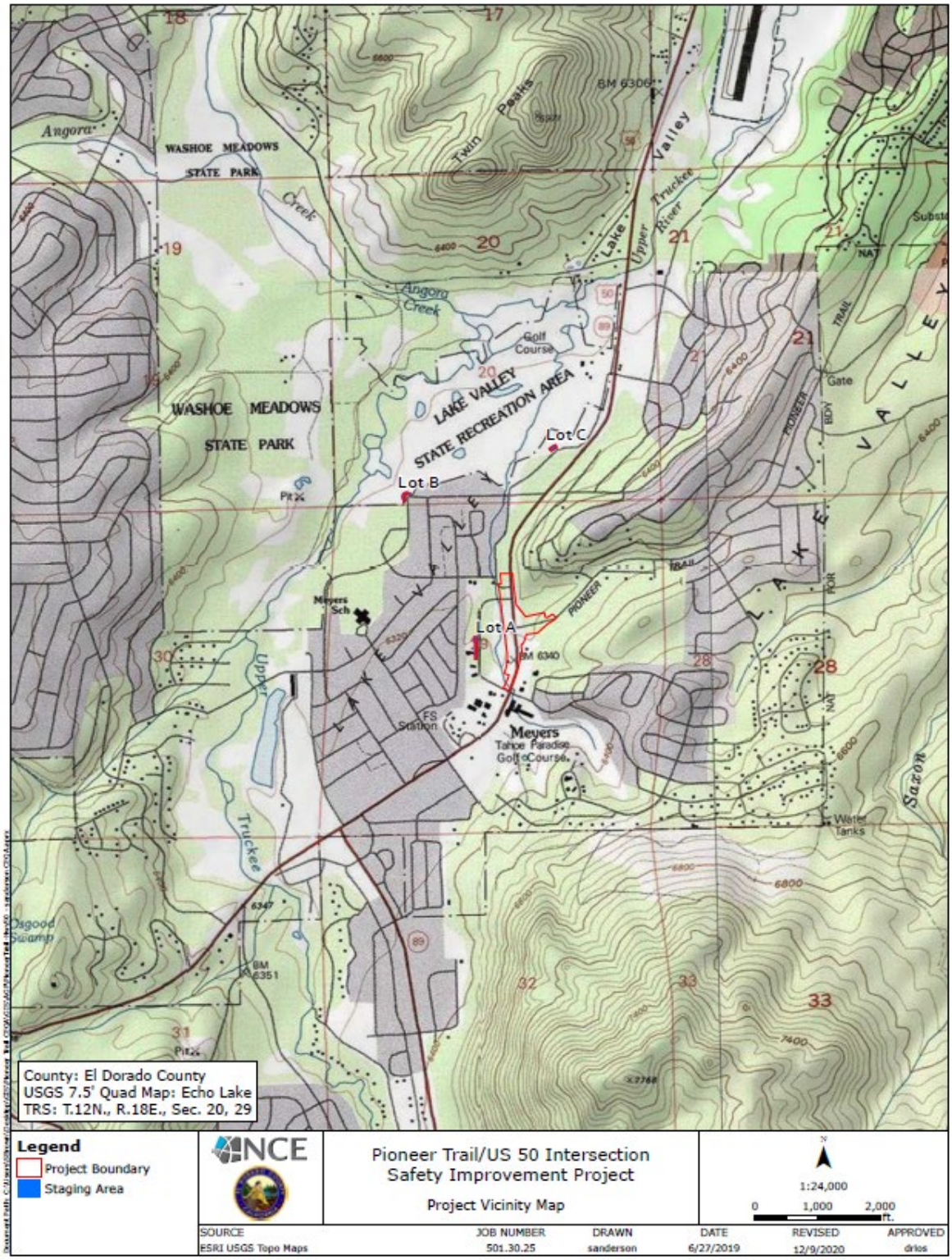


Figure 1. Project Vicinity Map



Figure 2. Project Location Map

3.2 PROJECT PURPOSE, NEED, AND OBJECTIVES

The project purpose is to:

1) Improve safety and mobility at the US 50/Pioneer Trail intersection for all modes of travel;
2) Improve traffic flow;
3) Provide access to and connectivity between nearby walking and cycling facilities; and
4) Ensure consistency with local, regional, and state planning.

The project is needed to improve overall safety and mobility for all roadway users while improving traffic flow. In 2012, the US 50/Pioneer Trail intersection was identified as a high-collision location in the *2011 Annual Accident Location Survey* conducted by the El Dorado County Department of Transportation (El Dorado County 2017). It was determined that most collisions at the intersection were a result of drivers traveling at unsafe speeds in snowy or icy conditions.

Traffic levels at this location are highly variable throughout the year, as the intersection serves tourist traffic to/from Lake Tahoe, the State of Nevada, and a variety of other outdoor activities including skiing, snowboarding, hiking, camping, and the access to the Rubicon Trail. Traffic levels can vary significantly based on weather, economic conditions, special events, and other factors. Both US 50 and Pioneer Trail are heavily travelled routes between Meyers and the City of South Lake Tahoe. Level of Service (LOS) standards for the project are set by Caltrans, TRPA, and the County. The existing intersection operates at an unacceptable LOS during peak hours. Without improvement to traffic flow, the LOS at the intersection will continue to worsen and result in extensive delays and long traffic queues. Furthermore, the improved traffic flow is needed to reduce vehicle emissions and noise associated with traffic delays.

In addition, improved accessibility and connectivity is needed for pedestrians and cyclists at this intersection. The existing intersection has only one crosswalk on US 50 on the north side of the intersection. All other pedestrian movements are prohibited. The intersection does not have sidewalks or pedestrian ramps. While the existing intersection has a bicycle lane along US 50 southbound, the bicycle lanes in both directions of Pioneer Trail do not extend into the intersection. The infrastructure for non-motorized travelers through this intersection needs to be expanded to provide safe, dedicated facilities for residents and visitors. This includes providing needed bicycle and pedestrian connectivity along US 50 from the Meyers neighborhoods along the east side of US 50 south of the intersection to the Meyers Bikeway along the west side of US 50. Currently, the pedestrian and bicycle

facilities on the west side of US 50 do not connect to the facilities on the east side of US 50.

The Meyers Area Plan contains several goals, policies, and implementation measures that support improving traffic flow, including the goal to identify opportunities to reduce traffic speeds through Meyers without adversely affecting air quality using require right-of-way (ROW) improvements and traffic controls. One of the implementation measures in the plan includes developing and implementing intersection improvements at the US 50/Pioneer Trail intersection that maintain or improve LOS, improve traffic flow, reduce vehicle emissions associated with traffic delays, and improve pedestrian and bicycle safety.

The project objectives are to:

- Improve safety for all modes of transportation.
- Offer environmental benefits including reduced air emissions, improved stormwater drainage, and stormwater treatment.
- Provide pedestrian and cyclist connectivity.
- Reduce the number and severity of collisions.
- Create a landmark to identify the start of the Meyers commercial corridor.
- Provide opportunity for future growth of transit facilities.
- Reduce motorist delays during non-gridlock conditions.
- Install landscaping, signage, and aesthetic improvements.
- Provide additional pedestrian and street lighting.
- Reduce traffic speeds without adversely affecting air quality.

3.3 PROJECT BACKGROUND AND EXISTING CONDITIONS

The US 50 corridor serves as the main entry point for Lake Tahoe visitors through the community of Meyers. At the east end of Meyers sits the Pioneer Trail/US 50 intersection, which is a primary connection point to the City of South Lake Tahoe, Stateline, and Lake Tahoe. The "T" intersection is currently controlled by four signalized traffic lights (two traffic signals on the east and west sides of US 50 south of the intersection, and two on the east and west sides of US 50 north of the intersection). Each of the four signalized traffic lights contains street lighting. The annual average daily traffic (AADT) of Pioneer Trail is approximately 6,335 vehicles per day (Federal Highway Administration [FHWA] 2016a). The AADT of US 50 is approximately 14,600 vehicles per day (Caltrans 2017a).

The existing intersection is challenging for alternative modes of transportation, including for cyclists and pedestrians, which leads them to frequently cut across the

highway in undesirable locations. The area is prone to a higher-than-average accident rate due to many factors, including grading and drainage issues (the southeast corner has standing water after rain events and snowmelt); visibility issues related to signal equipment and tree encroachment; and excess motorist speed while turning from southbound US 50 onto eastbound Pioneer Trail. During winter storm conditions, vehicles regularly slide through the intersection and hit waiting vehicles in the westbound lane of Pioneer Trail (FHWA 2016a).

3.3.1 Existing Pedestrian and Bike Facilities

The *2016 Linking Tahoe: Active Transportation Plan* identifies needs related to the non-auto users of this intersection, including providing continuation through the intersection that accommodates all users including pedestrians, cyclists, and transit riders. At this intersection, pedestrians are currently only allowed to cross US 50 in the crosswalk on the north side of the intersection (**Figure 3**). This crosswalk does not connect to another pedestrian facility; all other pedestrian movements are prohibited within the existing project area intersection.



Figure 3. Existing Conditions at the US 50/Pioneer Trail Intersection

An existing Class 1 shared-use trail is located to the west of US 50; this trail does not connect to the Class II bike lane on US 50 or the Class 1 shared-use trail on the east side of US 50 (**Figure 4**).

The proposed project is part of the larger Meyers Corridor Operational Improvement Project identified by TRPA's Environmental Improvement Program (EIP) as a sustainable recreation and transportation project (EIP #03.01.02.0026). The EIP project goals are to preserve and improve air quality, improve outdoor experiences for visitors and residents while protecting natural resources, and increase the use of alternative modes of transportation and decrease reliance on the private automobile (TRPA 2020b).

Once implemented, the project would help the County and TRPA meet the minimum threshold standards established for air quality by improving traffic flow, which would reduce idling times and improve acceleration conditions, and by improving the transportation network to support a walkable and bikeable community. The purpose of the threshold for air quality is to achieve the strictest of federal, state, or regional standards for carbon monoxide, ozone, and particulates; increase visibility; reduce US 50 traffic; and reduce vehicle miles traveled (TRPA 2020b).

Substantial analysis has already been completed on the US 50 corridor through Meyers, including at the intersection at Pioneer Trail. The 2007 Meyers Operations Study conducted preliminary traffic counts and gathered baseline utility information (FHWA 2016a). Since then, the County, in conjunction with TRPA, FHWA, Caltrans, local community businesses, and the Meyers Community Foundation, has performed additional analysis as part of TRPA's 2014 On Our Way Grant Program. The program helps Lake Tahoe communities identify neighborhood-level projects that create mixed-use town centers; encourage walking, biking, and transit use; revitalize the economy; and reduce impacts to the environment.

The FHWA Resource Center's Meyers Road Safety Audit, conducted in 2016, identified safety issues at the Pioneer Trail/US 50 intersection. Results of the audit concluded that this intersection experiences the highest number of accidents of all the intersections within the Meyers Road Safety Audit study area (FHWA 2016a). Collision data provided from the California Highway Patrol indicate that 34 collisions occurred in the intersection between 2007 and 2015. Of these collisions, 6 resulted in injuries and 28 resulted in property damage. There were no fatalities at the intersection; however, one fatality was reported approximately 400 feet south of the intersection (FHWA 2016a).

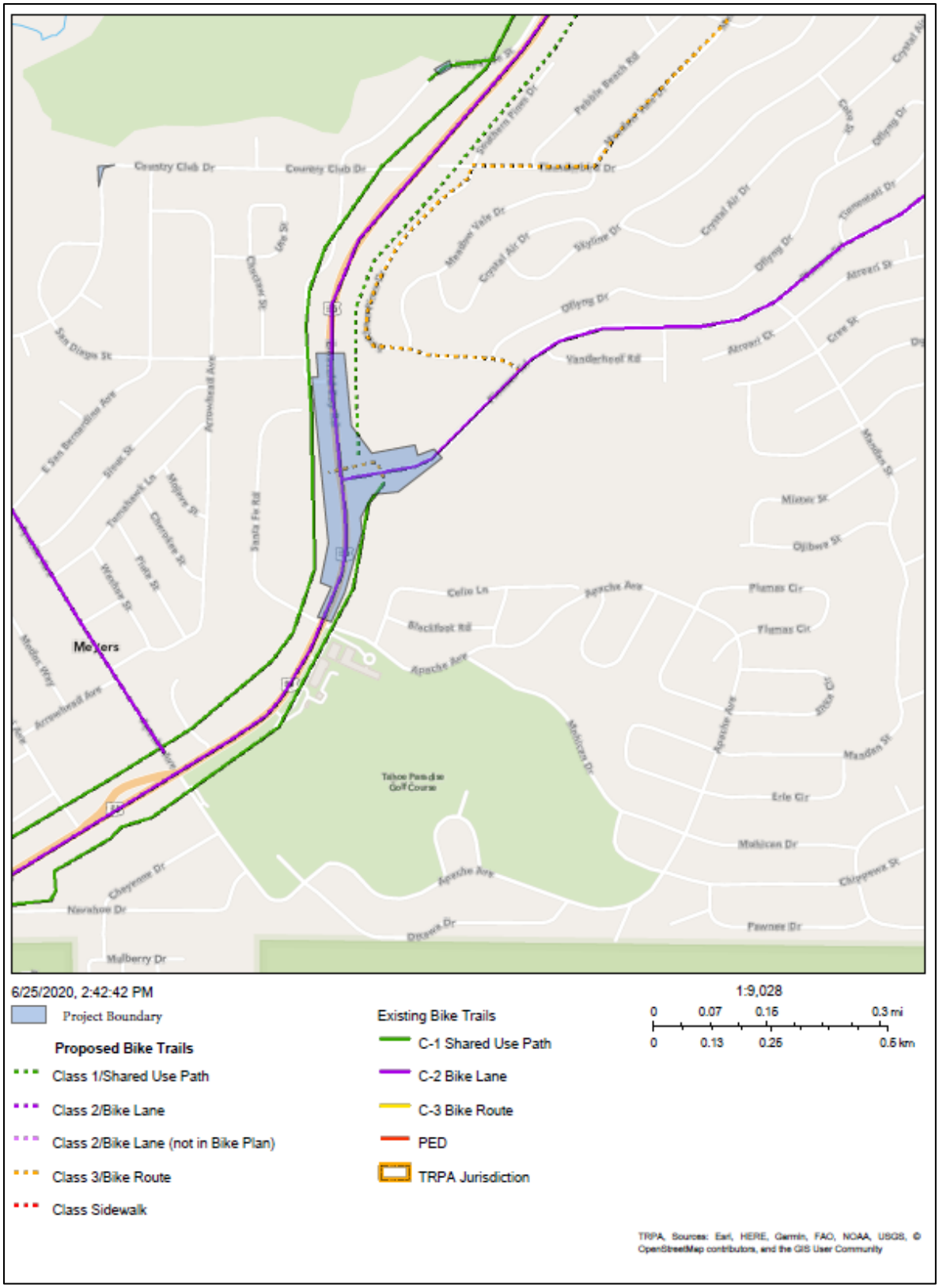


Figure 4. Existing and Proposed TRPA Trails

In 2012, this intersection was identified as a high-accident location by the 2011 Annual Accident Location Survey (El Dorado County 2017). It was determined that most accidents at the intersection are a result of vehicles travelling at an unsafe speed in snowy and/or icy conditions. Most of the accidents occur at the US 50 northbound right-turn movement onto Pioneer Trail.

The County has identified several funding sources for the project in their adopted 2020 Capital Improvement Program. The project is also listed in the TRPA Federal Transportation Improvement Program. The project is expected to be funded through a combination of Highway Safety Improvement Program funds, TRPA/Air Quality funds, Regional Surface Transportation Program Exchange Funds through TRPA and Caltrans, Congestion Mitigation and Air Quality Program funds, and other local funds.

3.3.2 Alternatives Analysis

The Project Development Team – consisting of the County, Caltrans, TRPA, and consultant team staff – considered an in-depth analysis of several different alternatives that included a three-leg roundabout and a modified traffic signalized intersection. A complete description of these alternatives can be found in **Appendix A**, Intersection Control Evaluation Report (GHD 2020). This analysis included conceptual layouts of each of the alternatives to identify project effects and an in-depth traffic analysis to determine the impacts on the motoring public.

The Project Development Team looked objectively at all the alternatives and collectively determined that a three-leg modern roundabout was the Preferred Alternative (proposed project), and compared to the modified signal, would provide LOS "A" operations and shorter queue lengths. In addition, over the design life of the project, the life cycle costs for the Roundabout Alternative would be more favorable than the Modified Traffic Signal Alternative.

More information is available in **Appendix A**. This alternative was subsequently modified to become the proposed project, as discussed in Section 3.4 below.

3.3.3 Zoning, Land Use, and Ownership

Project activities would occur within County ROW on Pioneer Trail, federal highway US 50 (also known as SR 89 owned by Caltrans), on adjacent publicly owned parcels belonging to the CTC, staging areas, and a portion of land of owned by private property owners. **Figure 5** below displays project ownership information.

The project is located within Plan Area Statement (PAS) 123 - Meyers Forest. PAS are considered land use and zoning guidance documents for both TRPA and the

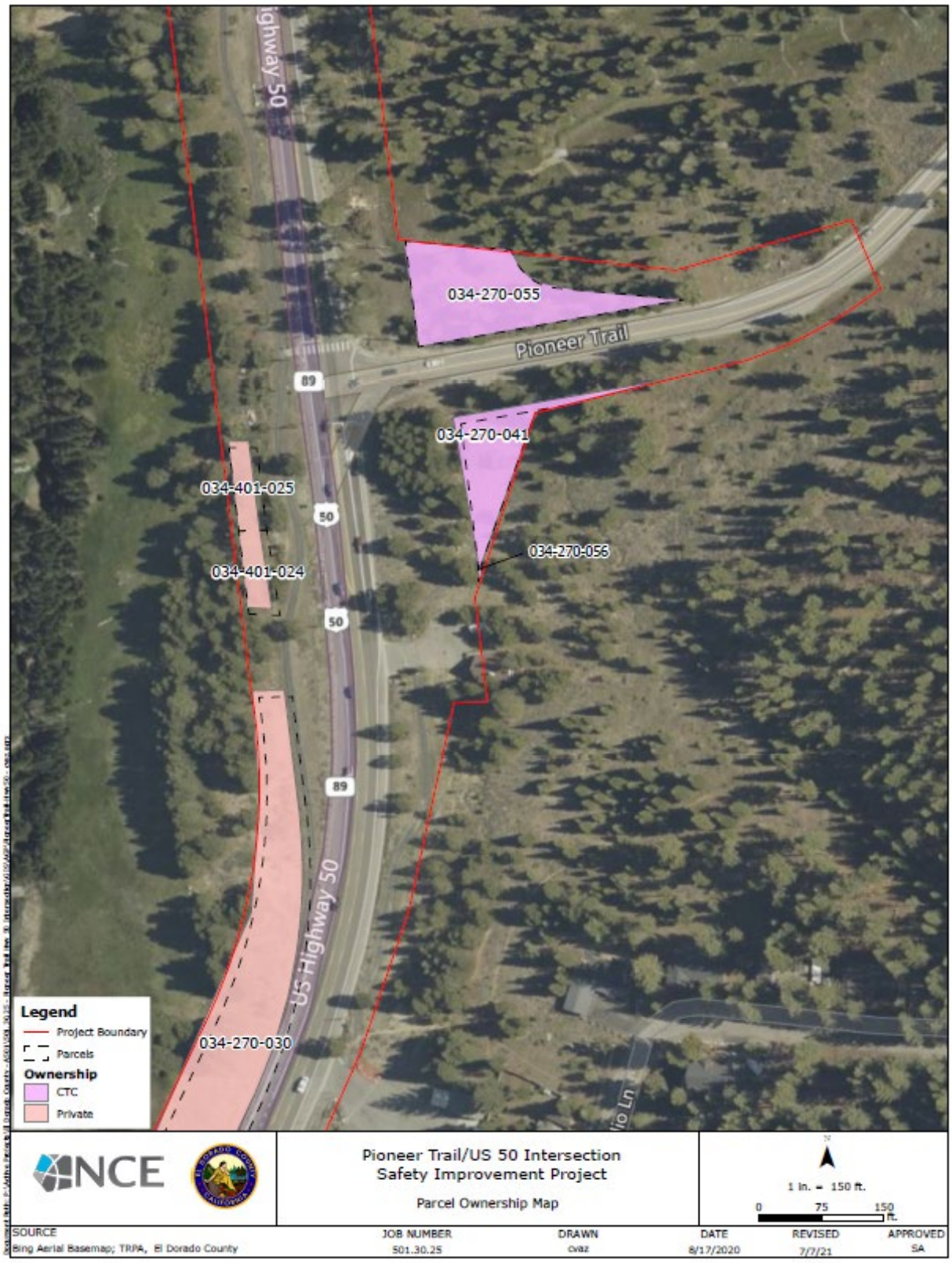


Figure 5. Parcel Ownership Map

County. The PAS 123 general land use classification is Conservation, the management strategy is mitigation, and the PAS contains a special designation as a scenic restoration area; the project is located within Scenic Roadway Units 36 (US 50/State Route 89) and Unit 46 (Pioneer Trail).

Most of the PAS 123 area is undeveloped except for some minor structures at the Pioneer Trail/US 50 intersection. The planning statement for this area states that it is to be retained as open space and managed appropriately for visual enhancement and maintenance of early successional stage vegetation (TRPA 2002).

The project would require ROW acquisition from one property southeast of the intersection and acquisition of ROW and a permanent easement from one property northeast of the intersection to accommodate the larger footprint associated with the proposed roundabout and bike path. Temporary construction easements would be required from two properties southeast of the existing intersection, and one property southwest of the intersection.

CTC (Conservancy) Lands: The CTC Board will need to review and authorize the following activities on Conservancy lands through an easement and/or license agreement:

- APN 034-270-055: A partial ROW take of 434 square feet (SF) is required to construct and maintain roadway, curb and gutter, landscaping, and lighting. A permanent easement of 5,202 SF is required to construct and maintain water quality treatment basin improvements. A temporary easement of 4,247 SF is required to construct grading, revegetation, and landscaping.
- APN 034-270-041: A partial ROW take of 1,362 SF is required to construct and maintain roadway, curb and gutter, landscaping, and lighting. A temporary easement of 6,340 SF is required to construct grading, revegetation, and landscaping and to remove trees and existing shared-use path.
- APN 034-270-056: A temporary easement of 245 SF is required to construct grading, revegetation, and landscaping and to remove trees and the existing shared-use path.

3.4 PROJECT FEATURES

The following sections provide details of the proposed project.

3.4.1 Three-leg Modern Roundabout

To construct the proposed roundabout, the four existing traffic signals at the US 50/Pioneer Trail intersection would be removed and replaced with a three-leg modern roundabout. The proposed roundabout is a single-lane roundabout with additional right-turn and through bypass lanes. In the northbound direction, the

entry would flare from a single lane to a through lane and a right-turn lane. In the southbound direction, a through bypass lane and through/left-turn lane would merge into a single lane after the roundabout. In the westbound direction, the entry would flare from a single lane into dedicated left and right-turn lanes. A conceptual layout of the proposed roundabout design and associated features is displayed on **Figure 6** below. The roundabout would include bypass lanes separated by raised medians, which would allow for single-lane, staged crossing for non-motorized users and allow the roundabout to operate as a single-lane roundabout while reducing delay and queueing.

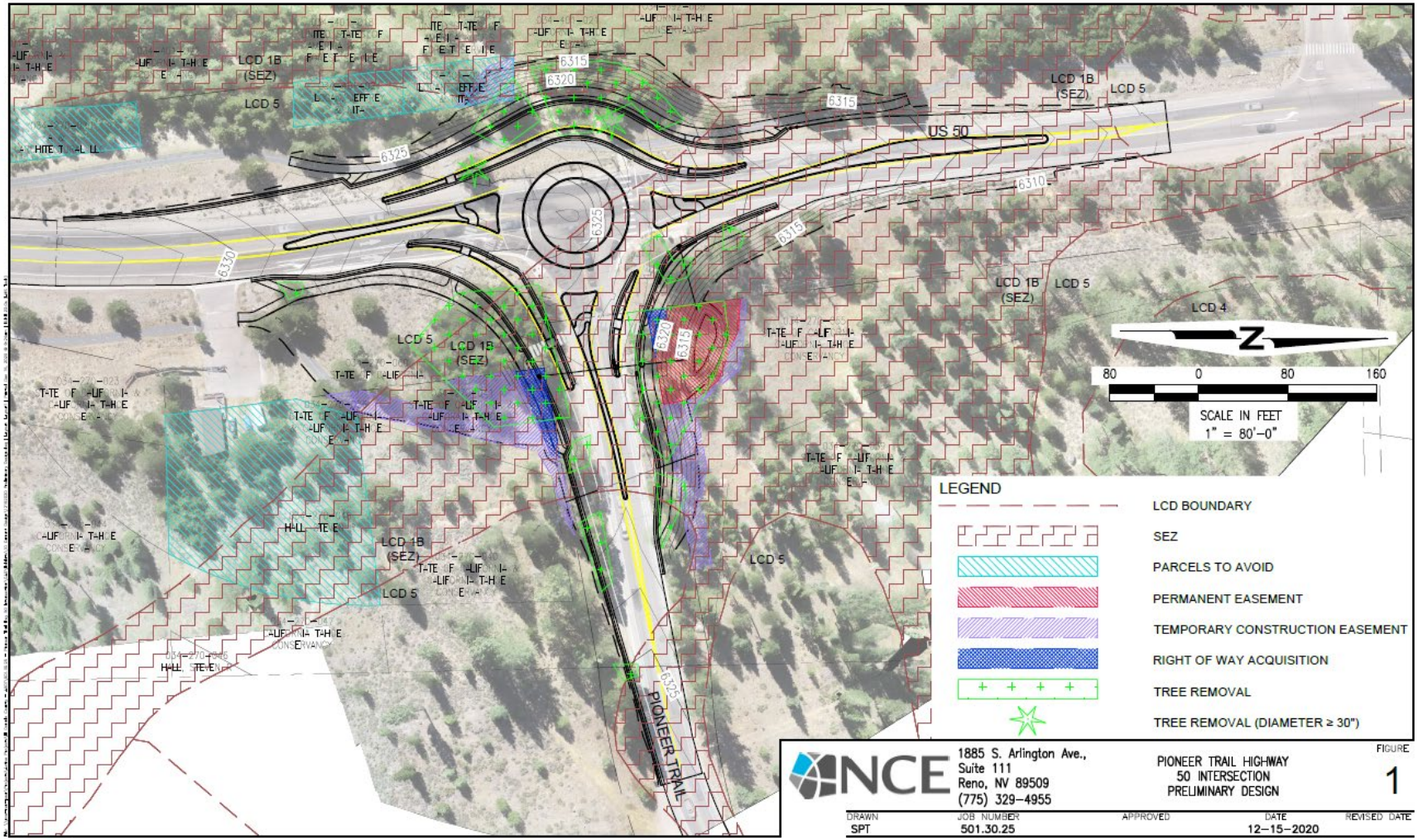


Figure 6. Proposed Project Overview Design Drawing

The project proposed the following roundabout features:

- Standard roundabout geometric features such as a shared-use path, crosswalks, splitter islands, truck apron with central island, and landscape buffer between the circulatory roadway and shared-use path.
- Landscaping, hardscaping, and/or a gateway sign for the community of Meyers may be constructed in the central island. Splitter islands, and landscape buffer areas located between the sidewalk and the traveled way would be treated with rock mulch.
- Removal and replacement of existing curb and gutter as needed.
- Concrete construction of new curb, gutter, and shared-use path with grading to conform to existing features.

To improve sight distance and reduce the difference in existing grade breaks, the roundabout finish grade would be set at an elevation higher than the existing grade. Grinding of the existing roadway is expected to be up to 14.5 inches in depth (deepest existing asphalt concrete thickness) and up to 53 feet wide (the full width of all vehicle lanes US 50 south of Pioneer Trail). Construction depths for the islands would range up to 1 foot to the top of proposed subgrade, with widths up to 10 feet for the approach splitter island.

3.4.2 Sidewalk and Bicycle Lanes

An 8-foot-wide shared-use path (sidewalk and bike path) would be integrated into the roundabout alignment. Approximately 580 linear feet of the existing Class I shared-use path on the west side of US 50 would be integrated into the project by realigning the trail approximately 48 feet to the west to allow for construction of the roundabout; this segment of path would be constructed of hot mix asphalt consistent with the existing shared-use path. Approximately 1,200 linear feet of new concrete shared-use path would be constructed to provide connections to these paths for on-road cyclists at each roundabout leg. Proposed improvements are anticipated to include:

- Bicycle lanes on approaches to the roundabout
- Removal and replacement of existing shared-use path to accommodate the new intersection
- New shared-use paths to connect to existing paths
- Crosswalks within the roundabout may include the installation of Rectangular Rapid Flashing Beacons, Pedestrian Hybrid Beacon, or equivalent traffic control device
- Removal and replacement of existing signage as needed

All pedestrian facilities would be compliant with the Americans with Disabilities Act accessibility requirements. All crossings would be marked with the California Manual on Uniform Traffic Control Devices (MUTCD)-compliant crosswalk markings and signing.

Construction depths for the sidewalk/shared-use path would range up to 1.0 foot to the top of proposed subgrade, the width of the 8-foot-wide path.

3.4.3 Striping and Signage

The project proposes to restripe US 50 and Pioneer Trail within the limits of the project area. The traveled way would be striped in conformance with the California MUTCD.

Existing signage would be removed and replaced as appropriate. New roadside-mounted signs would be placed to assist in navigating the approach to the roundabout and through the roundabout. Overhead signs are not anticipated but may be included if determined necessary during final design.

3.4.4 Site Drainage and Water Quality Features

The project is proposing to install permanent Best Management Practices (BMPs) to improve water quality and meet County, TRPA, Caltrans, and federal standards. These water quality features would include a new infiltration basin on the northeast corner of the intersection with the goal of routing as much of the runoff as possible to the basin. The project proposes to generally maintain existing site drainage patterns and, where feasible, the existing storm drain system would be maintained and adjusted as needed. Specifically, the project proposes to:

- Construct a new infiltration basin at the northeast corner of the proposed roundabout intersection, sized to store the anticipated volume of runoff (the 20-year, 1-hour storm event, or equivalent to 1-inch of rainfall within one hour) and overflow features for conveyance of larger storm events;
- Extend an existing culvert located 220 feet east of the intersection on Pioneer Trail; the culvert would be extended on both sides to accommodate limits of proposed grading;
- Modify an existing reinforced concrete pipe culvert, located 250 feet north of Pioneer Trail, to tie into two relocated traction sand traps via a new lateral pipe and one new traction sand trap on the western shoulder of southbound US 50;
- Install two new catch basins with 1-foot sumps at the southeast corner to capture flows and perpetuate existing drainage patterns. These two catch basins would be connected via laterals to a storm drainpipe under Pioneer

Trail to outlet to the new infiltration basin at the northeast corner of the roundabout intersection;

- Install two additional catch basins with sumps along the northeast corner of the intersection to capture runoff from Pioneer Trail and US 50; one would be connected via a lateral to the storm drainpipe under Pioneer Trail, and the other would be connected to a lateral which outlets directly into the infiltration basin. Both pipes discharging into the infiltration basin would include flared end sections, and where design warrants, additional outfall protection; and,
- Revegetate roundabout fill slopes with native species to accommodate site drainage, as part of restoration and site stabilization.

3.4.5 Lighting

The project proposes to remove and replace the existing intersection and pedestrian lighting in conformance with Caltrans Highway Design Manual (Caltrans 2019) and TRPA standards. At a minimum, lighting would be provided at the vehicle-vehicle conflict points at the intersection, vehicle-pedestrian conflict points at the crosswalks, and at the nose of each splitter island. Existing lighting at the intersection is approximately 33 to 34 feet in height; new lighting to be installed would be approximately 39.5 feet in height, with a 15-foot mast arm.

All lighting would be downcast lighting to help protect the night sky and minimize light spill-over.

3.4.6 Utilities

Construction of the roundabout would require modification of various existing utilities in conflict with the proposed improvements. Anticipated modifications to utilities would:

- Modify existing utilities to include relocation of a power pole and various cabinets at the northeast corner;
- Remove four existing traffic signals;
- Upgrade the existing transformer and conduit/wiring to support additional lighting proposed as part of the project; and,
- Minimally relocate and/or modify existing sanitary sewer manholes on the west side of US 50 north of the intersection and on the north side of Pioneer Trail.

Modification of existing line utilities would involve excavations approximately 1 foot below existing depths of lines. The proposed drainage system work and utility relocations are anticipated to require excavations no deeper than 9 feet.

Existing signal poles have pile foundation depths of 12 feet below existing grade with a diameter of 3.5 feet. It is possible part of the foundation may be abandoned instead of removed. Where complete removal is required, excavation is anticipated to involve a total depth of 13 feet with a 5-foot diameter.

The existing telephone pole currently located in line between the gutter inlet apron on north side of Pioneer Trail westbound and the southernmost transformer box will require a bury-depth of 4-to-6 feet in a hole about 2 feet in diameter if it is relocated.

3.4.7 Tree Removal

Replacement of the existing signal intersection by constructing a roundabout and associated shared-use path increases the intersection's footprint; therefore, removal of trees adjacent to the existing ROW (approximately 160 trees) is required to implement the project. Refer to Section 4.4 – Biological Resources for locations of proposed tree removal.

A stand of 48 lodgepole pine trees at the southeast corner of the proposed roundabout footprint creates prolonged slippery conditions due to cooler road surface temperatures caused by "shading" of the road surface at the right turn movement from US 50 northbound onto Pioneer Trail. Removal of this stand of trees is anticipated to benefit automobile safety.

As discussed in Section 4.4 below, all tree removals must conform with the TRPA Code.

3.4.8 Construction Access and Staging

Several potential locations for construction staging have been identified for the project. Three of the potential staging areas are located off-site within existing ROWs (Lots A, B, and C).

The locations are described below and depicted on previous **Figure 2**:

Lot A: Public ROW, Northmost End and West Side of Santa Fe Road

This is public ROW that is currently developed and previously disturbed. This location is reasonable for material/equipment storage, easily accessible from County roadways, and not far from the project site.

Lot B: Public ROW, Northwest corner at the intersection of Country Club Drive and Bakersfield Street

This is a public ROW that is currently developed and previously disturbed.

Lot C: Public ROW, Northeast end of Arapahoe Street

This is a public ROW that is currently developed and previously disturbed.

3.4.9 Construction Schedule

The project is scheduled for construction in the dry months of 2022 and is anticipated to require approximately 120 days to construct. All improvements associated with the build alternative have been designed to allow for construction staging that maintains traffic flow during construction with minimal closures. The project would be constructed with live traffic to the maximum extent practicable. Construction would be phased in work zone areas – west US 50, east US 50, and Pioneer Trail. Three to four work zones would be established, and work would occur in no more than two of these areas at a time.

3.4.10 Equipment and Labor Force

Anticipated equipment to construct the project includes crew trucks, low-boy trailers, a crane, water trucks, excavators, temporary trench protection, trench plating, medium or large saw cutting machines, cold-milling machinery, grading blade, formwork, curb and gutter machine, sheepsfoot compactor, paving machinery, steam roller, striping truck, and a thermo truck.

The labor force is anticipated to require excavation/pipe installation crews; saw cutting, electrical, and crane specialists; and representatives from all utility companies. Construction of the concrete roundabout truck apron and splitter islands would require masons, grading specialists, pavers, and asphalt milling personnel. Grading and compacting crews would prepare the subgrade and base rock for paving crews. Final work would involve electricians, sign, fence, and landscaping/irrigation crews.

3.4.11 Traffic During Construction

As discussed in Section 3.5.8, a Traffic Control Plan would be developed, approved, and implemented during construction.

Temporary paved surfaces including shoulder widening, temporary paved access roads, and temporary bike/pedestrian access may need to be constructed to keep the flow of traffic moving safely during construction; all would have associated temporary striping. The project would be constructed by 'zones' to allow traffic to be shifted from one side of the road away from the active work zone for worker safety. Once one portion is completed, vehicle and pedestrian/bike traffic would be shifted to the newly constructed side.

3.5 CONSTRUCTION CONTROLS

The project is required to comply with local, state, and federal regulations pertaining to protection of human health, safety, and environment.

The following required construction controls from local, state, and federal agencies are incorporated into the project design and are considered a part of the proposed project.

3.5.1 Air Quality

The El Dorado County Air Quality Management District (AQMD) District Rule 223 includes requirements for construction projects. Control measures for construction and other earth moving activities must follow the guidelines presented in Table 1 of Rule 223-1 'Best Management Practice'. These requirements include, but are not limited to, creation and implementation of a Fugitive Dust Control Plan, trackout management practices at the construction site, visible emissions limitation, vehicle speed limitations, material handling, and control for stockpiles and disturbed areas.

3.5.2 Biological Resources

The project is required to implement the following applicable TRPA Code standards that protect biological resources:

Vegetation

Vegetation shall not be disturbed, injured, or removed except in accordance with the TRPA Code or conditions of project approval. All trees, major roots, and other vegetation not specifically designated and approved for removal in connection with a project shall be protected according to methods approved by TRPA. All vegetation outside the construction site boundary, as well as other vegetation designated on the approved plans, shall be protected by installing temporary fencing pursuant to subsections 33.6.9 and 33.6.10. Disturbed areas shall be revegetated pursuant to 33.6.8.

The County is required to obtain a one-time 'Less Than 3 Acre Conversion Exemption' permit from CalFire to comply with the requirements of 14 California Code of Regulations (CCR) §1104.1(a): Harvesting of trees that is a single conversion to a non-timber growing use of timberland of less than 3 acres.

Invasive Weeds

The following weed best management practices were identified in the project's Natural Environment Study (NES) to protect against the spread of noxious and invasive weeds during construction, and have been incorporated into the project:

- All hay, straw, hay bales, straw bales, seed, mulch, or other material used for erosion control or landscaping shall be free of noxious weed seeds and propagules. Noxious weeds are defined in CCR Title 3, Division 4, Chapter 6, Section 4500 and the CDFA's Plant Quarantine Manual;

- All equipment brought to a project area for construction shall be thoroughly cleaned of all dirt and vegetation prior to entering the site to prevent importing noxious weeds;
- All materials brought to a project area, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weed seeds and propagules; and,
- El Dorado County shall maintain and implement an effective program for the monitoring and control of noxious weeds.

3.5.3 Cultural Resources

The proposed project is subject to the regulations and standards established in the National Historic Preservation Act, the California Register of Historical Resources (Public Resources Code [PRC] § 5024.1(a)), PRC §5097.5), and the TRPA Code. Projects on the SHS are additionally subject to the regulations and standards in the Caltrans SER. The County is required to implement the following applicable regulations and standards that protect cultural resources:

- The Caltrans SER, Volume 2 (revised 2015) contains procedures that shall be followed if previously unidentified archaeological resources are encountered during construction, and the following compliance measures are integrated into project implementation:
    - In the event of inadvertent discovery during construction, construction activity near the property will be stopped and all reasonable measures needed to avoid, minimize, or mitigate further harm to the property will be implemented. Once a discovery is made, the Section 106 Programmatic Agreement provides for the following actions:
        - The Caltrans district notifies the Headquarters' Cultural Studies Office and State Historic Preservation Office within 48 hours. Caltrans may furnish this information through correspondence, hard copy, electronic media, telephone, or meetings, at its discretion, taking into account the capabilities of the consulting parties. Caltrans must document this process for the administrative record.
        - The Caltrans district notifies Indian tribes and/or Native American groups that may attach religious or cultural significance to the property within 48 hours.
- TRPA Code (Historic Resource Protection) Section 67.3 – Resource Projection outlines requirements for the accidental discovery of resources during construction (subsection 67.3.1), requirements for site survey and

consultation with the Washoe Tribe (subsection 67.3.2), and requirements for protection of known resources.

- Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If the human remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

3.5.4 Geology and Soils

The project would require the County to prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the Lahontan RWQCB to comply with the NPDES Construction Storm Water NPDES Permit for the Tahoe Basin (Order No. R6T-2016-0010 NPDES No. CAG616002).

The purpose of the SWPPP is to protect soil and water resources from impacts during construction, including groundwater. As part of the SWPPP, the contractor would be required to prepare and adhere to a Temporary BMP Plan, a Spill Contingency Plan, and a Dewatering Plan that will be approved by the County. The plan would designate BMPs to minimize impact from erosion and sedimentation. At a minimum, the following geology and soils controls must be implemented:

- Temporary erosion-control devices shall be placed down-gradient of dirt piles, excavated areas, or stockpiles;
- Coverings shall be placed on all dirt piles during non-working hours;
- Vegetation protection fencing shall be installed to protect existing vegetation where feasible;
- Disturbed areas shall be revegetated to stabilize soils;
- Disturbed areas shall be stabilized with mulch until vegetation is reestablished;
- Tracking controls shall be used; and,
- Parking shall be allowed only on paved areas.

3.5.5 Greenhouse Gas Emissions and Green Energy

The El Dorado County AQMD does not provide guidance for construction-related greenhouse gas (GHG) emission-reduction measures. Therefore, the project will incorporate measures developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) for reducing construction-related GHG emissions.

California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations. The following practices will be incorporated to control exhaust emissions from diesel powered fleets working at the construction site:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required 33 CCR 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site;
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated; and,
- Use a CARB-approved low-carbon fuel for construction equipment (nitrogen oxide emissions from the use of low-carbon fuel must be reviewed and increases mitigated).

3.5.6 Hydrology and Water Quality

The project's post-construction water quality obligations will be set by jurisdiction, with the County's MS4 permit controlling in the County's ROW, and Caltrans' MS4 permit (Order No. 2012-0011-DWQ) controlling water quality in the Caltrans ROW.

As discussed above, the project shall develop and implement a project-specific SWPPP, including a Temporary BMP Plan, a Spill Contingency Plan, and a Dewatering Plan.

These plans must outline measures that will protect hydrology and water quality resources, including groundwater, from negative impacts during construction. The SWPPP will need to be approved by the Lahontan RWQCB.

A Dewatering Plan shall be prepared and submitted for approval by the County, Lahontan RWQCB, and TRPA prior to commencement of construction.

Additionally, TRPA Code Chapter 60: Water Quality – outlines standards intended to protect water quality through requirements for the installation of BMPs to protect

and restore water quality, as set forth in Section 60.4.6 – Standard BMP Requirements.

Construction site stormwater BMPs would follow the Caltrans Construction Site Best Management Practices Manual (Caltrans 2017b) and the TRPA BMP Handbook (TRPA 2014) to control and minimize the impacts of construction-related activities. The following BMPs, at a minimum, are required at the site during construction:

- Temporary erosion and sediment control BMPs to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff (such as reinforced silt fence, erosion control fabric, fiber rolls);
- Tracking controls (such as designated ingress and egress areas) and designated staging areas outside of drainage, swale, and Stream Environment Zone (SEZ) areas. Staging area must be restored in accordance with TRPA Code Section 61.4 (Revegetation);
- Temporary BMPs to prevent wind erosion and sediment transport of disturbed areas, such as use of water for dust control and covering of stockpiles;
- Grading limited to May 1 through October 15, unless an exemption is granted by TRPA and a variance from the Lahontan RWQCB. At the end of the grading season or before completion of the project, all surplus or waste earthen materials from the project site would be removed and disposed of at a TRPA-approved disposal site or stabilized onsite in accordance with TRPA regulations;
- Implementation of the Spill Prevention Plan (as discussed in Section 3.5.7). Project contractors would be responsible for storing onsite materials and temporary BMPs capable of capturing and containing pollutants;
- Use of vegetation protection fencing to prevent damage to trees or other vegetation where possible;
- Use of construction boundary fencing to limit land disturbance to areas not planned for construction; and
- Temporary erosion and sediment control devices will be placed in accordance with the shown plans to protect sediment-laden runoff from discharging from the site.

3.5.7 Hazards and Hazardous Materials

A Spill Prevention Plan shall be developed along with the project-specific SWPPP to detail site-specific BMPs and TRPA-approved methods to prevent accidental spills from impacting water and land resources. The plan shall outline response protocols

and information for contacting the Lahontan RWQCB and TRPA. Additionally, spill containment and absorbent materials shall be always kept onsite, and petroleum products and hazardous waste shall be removed from the project area and disposed of at an appropriate location.

3.5.8 Traffic During Construction

The County will implement a Caltrans project-level Traffic Management Plan (TMP) during construction.

The project-level TMP will include construction restrictions, requirements, and definitions that will apply to the contractor(s) based on the type of work. In general, the project-level TMP will develop strategies for public and motorist information, incident management, construction, demand management, and alternate routes.

Temporary paved surfaces including shoulder widening, temporary paved access roads, and temporary bike/pedestrian access may need to be constructed to keep the flow of traffic moving safely during construction; all would incorporate associated temporary striping. As discussed above, it is anticipated the project would be constructed by 'zones' to allow for traffic to be shifted from one side of the road away from the active work zone for worker safety. Once one portion is completed, vehicle and pedestrian/bike traffic would be shifted to the newly constructed side.

Section 4 Environmental Evaluation

The following sections evaluate the potential adverse impacts of the project in compliance with CEQA and TRPA. Appendix G of the CEQA Guidelines (California Natural Resources Agency 2019) provides a sample checklist with a series of questions designed to enable the Lead Agency, the County, to identify project impacts with respect to 20 environmental topics; this IS generally follows this checklist. Topics from the TRPA IEC are included in the corresponding section with the CEQA checklist.

Except where a specific threshold has been adopted by a public agency and is specified in the sections below, such as an air quality threshold, Appendix G of the CEQA Guidelines is used to provide thresholds of significance for the CEQA checklist questions.

Potential environmental impacts are described as follows:

- **Potentially Significant Impact**: An environmental impact that could be significant and for which no feasible mitigation is known. If any potentially significant impacts are identified in this Checklist, an EIR must be prepared.
- **Less than Significant Impact with Mitigation Incorporated**: An environmental impact that requires the implementation of mitigation measures to reduce that impact to a less than significant level.
- **Less than Significant Impact**: An environmental impact may occur; however, the impact would not exceed significance thresholds.
- **No Impact**: No environmental impacts would result from implementation of the project.

The TRPA IEC similarly groups answers into one of the following categories:

- **Yes**
- **No**
- **No with Mitigation**
- **Data Insufficient**

4.1 AESTHETICS

4.1.1 Environmental Setting

To protect scenic quality thresholds within the Basin, specific areas have been identified as scenic corridors or scenic resources. Scenic corridors include views from Lake Tahoe and from all highways and Pioneer Trail in the Basin. These corridors have been divided into 33 shoreline and 45 roadway units. The scenic quality of these units was rated in 1982 and then again at 5-year intervals for the TRPA threshold evaluation process. The ratings received by these units indicate if the area is in "attainment," (meeting the scenic threshold standards) or "non-attainment" (not meeting the scenic threshold standards).

The project area is located within the Meyers Forest PAS, which has a special planning designation as a scenic restoration area. The project area contains portions of scenic roadway unit 36C (US 50 traversing through Meyers), unit 36B (US 50 traveling north towards Lake Tahoe) and unit 46 (Pioneer Trail) (**Figure 7**). The stretch of US 50 traversing Meyers (Roadway Unit 36C) is designated by Caltrans as a State scenic corridor and by TRPA as a regional scenic highway corridor due to panoramic vistas of Tahoe's alpine peaks (TRPA 2017). Pioneer Trail is designated by TRPA as a regional scenic roadway corridor due to the quality of the existing viewshed and surrounding natural environment. There are no existing views of Lake Tahoe from the project area.

TRPA adopted the Scenic Quality Improvement Plan (SQIP) in 1989 (TRPA 1989). The SQIP sets target areas along the Basin's major highways where improvements to scenic quality are needed and identifies specific measures that can be taken to increase the overall scenic quality. Along the many main highway corridors surrounding Lake Tahoe, scenic quality has declined because of urbanization and the dominance of buildings and structures. One of the primary elements of the SQIP is to apply design standards for highway structures such as improved lighting, guard rails, median treatments, revegetation of disturbed areas, and treatment of cut-and-fill slopes.

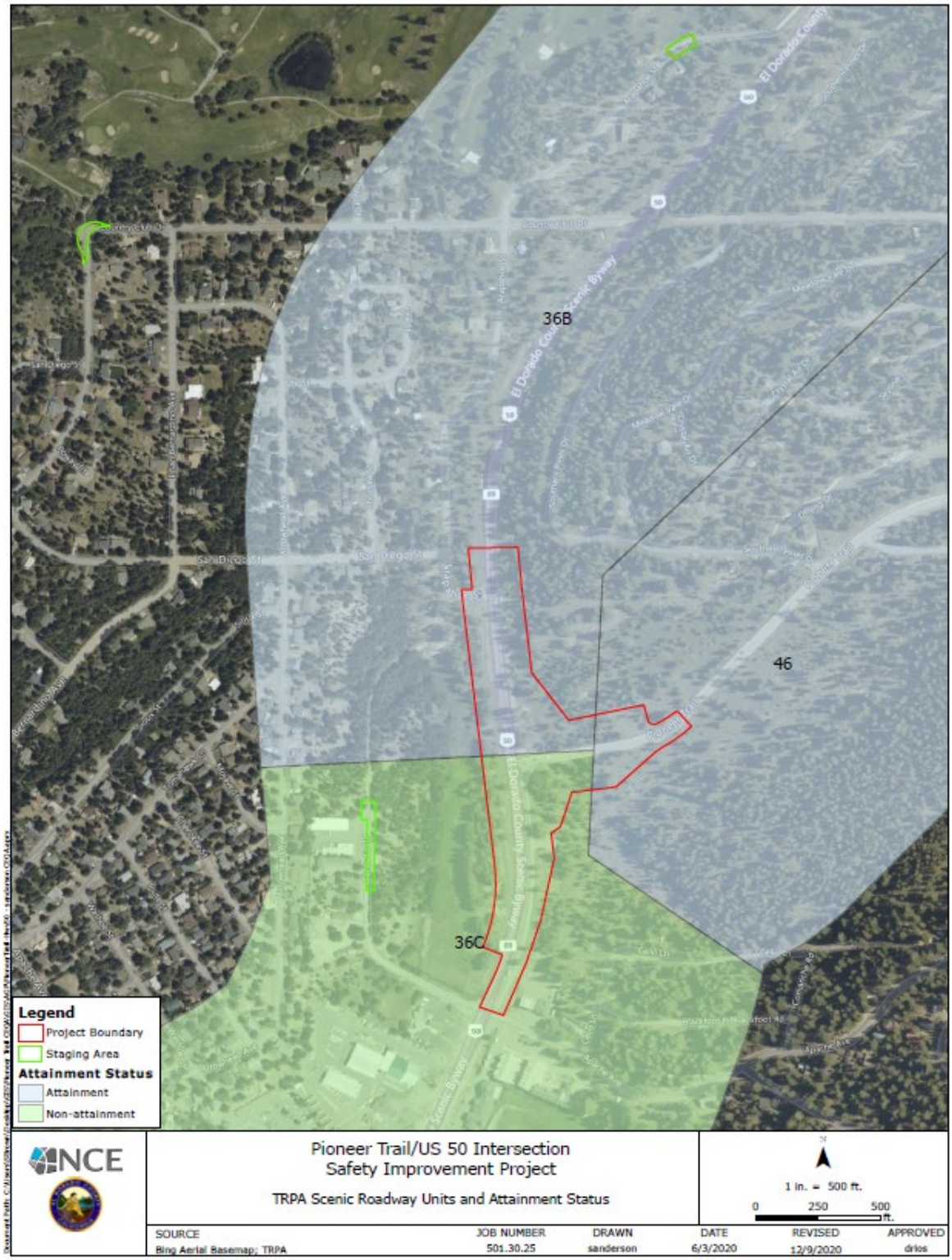


Figure 7. Scenic Roadway Units

4.1.2 CEQA Checklist Summary

Except as provided in Public Resources Code Section 21099, would the project:

CEQA Question	Impact Determination
a) Have a substantial adverse effect on a scenic vista?	Less Than Significant Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway?	Less Than Significant Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less Than Significant Impact
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

4.1.3 Answers to CEQA Checklist Questions

Except as provided in Public Resources Code Section 21099:

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

Less Than Significant Impact

Creating visually dominant features that are out of scale with the surrounding landscape constitutes a significant impact to scenic vistas under CEQA. Elements for evaluating significance include: 1) creation of strong visual contrast; 2) reduction in scenic vista area; and/or 3) non-compliance with scenic resource goals, policies, or standards of federal, state, or local agencies. CEQA relies on local policies to define scenic vistas.

Roundabout and drainage facility construction requires placement of fill material within the boundary of the existing US 50/Pioneer Trail intersection and the removal of trees adjacent to existing pavement. The proposed roundabout and associated islands and shared use trail features would eliminate existing vegetation and increase the amount of man-made paved surfaces at the intersection. **Figure 6** in the project description illustrates the proposed expansion of the pavement and the locations where approximately 180 trees would be removed for the project. Most tree removal would occur on the east side of US 50, with a concentration of trees removed southeast of the existing intersection (approximately 48 trees).

To accommodate the roundabout design and drainage, the existing roadway would be raised compared to the existing roadway elevation, which may result in fill

slopes of up to 8 feet in height on the west and northeast sides of the intersection. As documented in the project description, these 4:1 fill slopes would be revegetated as part of restoration of site disturbance but would be maintained free of trees and shrubs for road safety.

Tree removal, fill importation and construction of the roundabout would create a noticeable deviation to the existing landscape character as viewed from US 50 and Pioneer Trail by modifying existing vegetation patterns, line, color, and form; the fill slopes on the west and northeast side of the roundabout would stand out compared to the existing forested character of the intersection and would be evident but not dominant in degree of change. Visibility of the roundabout and fill slopes would be limited to the immediate area (e.g., 300 to 500 feet from the roundabout) in which viewers are located and obscured from other locations by topography, retained trees, and other ground vegetation. For drivers and shared-use trail users, the roundabout and adjacent fill slopes would not be out of place with other man-made features in the US 50 and Pioneer Trail roadway corridors. Measures included in the design of the fill slopes to reduce the amount of deviation to the adjacent forested/meadow landscape include use of native revegetation materials and naturally occurring types/colors of non-vegetation ground cover and boulders consistent with the adjacent landscape. With these measures in place, the roundabout would not be visually out of place with the adjacent landscape character when compared to other roadway features in the project vicinity.

Tree removal proposed for the roundabout would enlarge background views of nearby ridgelines as seen by drivers when approaching the roundabout from Pioneer Trail and US 50 from the north. Tree removal on either side of Pioneer Trail would widen existing views of Echo and Angora peaks for drivers approaching the intersection. Likewise, drivers on US 50 southbound would experience enhanced views of the ridgeline located south of Meyers because of the tree removal proposed on the northeast corner of the intersection. As such, the proposed intersection changes would not degrade scenic vistas.

As discussed above, revegetation design features included in the project description would reduce the potential for fill slopes to create strong visual contrast and tree removal would not degrade existing scenic vistas. As a result, TRPA scenic quality standards would be unaffected by the proposed roundabout construction. Scenic roadway unit 46 – Pioneer Trail and US 50 north of the Pioneer Trail/US 50 intersection (scenic roadway unit 36B) are in attainment, meaning the minimum threshold standard has been met.

US 50 south of the intersection (US 50 at Meyers, scenic roadway unit 36C) is not in attainment of TRPA scenic threshold standards due to conditions of the built environment located south of the intersection, including poorly designed development and signage along the ROW. The scenic rating of this roadway unit

has been improving gradually as older structures are redeveloped consistent with the Meyers Area Plan Design Standards and Guidelines (El Dorado County and TRPA 2017). As discussed in the Environmental Setting, one of the primary goals of TRPA's SQIP is to apply design standards for highway structures such as improved lighting, guard rails, median treatments, revegetation of disturbed areas, and treatment of cut-and-fill slopes. The project proposes to construct a modern roundabout design with integrated scenic improvements such as native vegetated areas, areas for future placement of a gateway sign, and signage consistent with TRPA's Code of Ordinances, Chapter 38, Signs. Therefore, the project would not adversely affect scenic quality ratings for roadway units 36B, 36C and 46 and could possibly help attain the TRPA scenic quality threshold for unit 36C.

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

Less Than Significant Impact

Refer to discussion of CEQA item a). There are no historic buildings within the project boundary. As discussed in the Environmental Setting, the project area contains portions of US 50 and Pioneer Trail, designated by TRPA as scenic roadway corridors due to quality of their existing viewshed and surrounding natural environment. Although trees will be removed, based on design features to revegetate disturbed areas with native vegetation, and the beneficial effect on mountain peak views from tree removal, the project would not damage views along these scenic roadway corridors.

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

Less Than Significant Impact

The project is in an urbanized area just north of the community of Meyers and proposes to construct a roundabout and streetscape improvements in an existing intersection to better serve and protect residents and visitors in the area. As discussed in CEQA items a) and b) above, the project would not substantially degrade the visual character or quality of public views of the site or surrounding area. Additionally, the project would not conflict with existing zoning of the area or other regulations governing scenic quality.

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

Less Than Significant Impact

As discussed in the Project Description, the project proposes to remove and replace the existing intersection and pedestrian lighting in conformance with the Highway Design Manual (Caltrans 2019), National Cooperative Highway Research Program (NCHRP) Report 672 guidelines, and TRPA standards. At a minimum, lighting would be provided at the vehicle-vehicle conflict points at the intersection, vehicle-pedestrian conflict points at the crosswalks, and at the nose of each splitter island.

All roadside and pedestrian lighting would be downcast lighting to help protect the night sky and minimize light spill over; therefore, impacts of new lighting would be less than significant.

4.1.4 TRPA Checklist

TRPA Questions – Light and Glare	Answers	Discussion
7a) Would the project include new or modified sources of exterior lighting?	Yes	The project proposes to install new roadside and pedestrian lighting consistent with TRPA and Caltrans standards. New lighting would be downcast to help protect the night sky and minimize light spill-over; therefore, impacts are anticipated to be less than significant.
7b) Would the project create new illumination, which is more substantial than other lighting, if any, within the surrounding area?	No	There are numerous sources of lighting in the corridor from existing streetlights, vehicles, and the nearby community of Meyers. All lighting would comply with TRPA standards, would be downcast, and therefore would not be more substantial than other lighting in the surrounding area.
7c) Would the project cause light from exterior sources to be cast off-site or onto public lands?	No	As discussed in the Environmental Setting, the project occurs at an existing intersection ROW with existing lighting. All proposed roadside and pedestrian lighting would be downcast lighting to help protect the night sky and minimize light spill-over.
7d) Would the project create new sources of glare through the siting of the improvements or using reflective materials?	No	The proposed project would not create new sources of glare through the siting of the improvements. Caltrans signage and protective reflectors would be designed to Caltrans standards for reflective materials that assist and do not distract drivers.

TRPA Questions – Scenic Resources/Community Design	Answers	Discussion
18a) Would the project be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe?	Yes	Refer to discussion of CEQA item a). As discussed in the Environmental Setting, the project area is not visible from Lake Tahoe and contains portions of scenic roadway units 36C and 36B (US 50) and unit 46 (Pioneer Trail). These units are designated by TRPA as regional scenic roadway corridors due to quality of the existing viewshed and surrounding natural environment, and US 50 is designated due to panoramic vistas of Tahoe's alpine peaks. The project proposes tree removal and thinning activities which will expand views of background ridgelines/peaks and may have a beneficial impact on existing views of surrounding mountain peaks for drivers approaching the intersection. Additionally, once constructed, the replacement of the existing signalized intersection with a modernized roundabout design would have a beneficial impact to the existing scenic quality of the highway system, consistent with the Meyers Area Plan transportation element.

TRPA Questions – Scenic Resources/Community Design	Answers	Discussion
18b) Would the project be visible from any public recreation area or TRPA designated bicycle trail?	Yes	The proposed project lies within a scenic corridor and would be visible from TRPA designated trails immediately adjacent to the project area. Both class 1 shared-use path and class 3 bike lanes are present within and surrounding the project area as shown on **Figure 4** in the Project Description; however, there are no existing connections between the facilities at the intersection. The crosswalk at the north side of the intersection across US 50 does not connect to another pedestrian facility; all other pedestrian movements are prohibited. The Class I bicycle facility parallel to the west side of US 50 does not connect to the Class II facility or the Class I pathway on the east side of US 50. The project proposes improvements which would improve connectivity to the existing facilities to provide connectivity at the intersection to existing trails in the area which currently do not have connection with each other in the project area.
18c) Would the project block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area?	No	Construction of the roundabout would not block an existing view of Lake Tahoe or other scenic vista seen from public roads and areas. As discussed in CEQA item a), the project is anticipated to redevelop the intersection with improvements identified by the SQIP as beneficial to scenic quality of highway systems.

TRPA Questions – Scenic Resources/Community Design	Answers	Discussion
18d) Would the project be inconsistent with the height and design standards required by the applicable ordinance or Community Plan?	No	The proposed project does not involve the construction of any buildings. The project would comply with applicable Caltrans, County, and TRPA design standards.
18e) Would the project be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines?	No	The proposed project is consistent with the SQIP and would comply with TRPA's Design Review Guidelines as discussed throughout this section.

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Setting

As discussed in the project description, the project area is zoned by TRPA as the Meyers Forest PAS; the general land use designation for this area is Conservation. The Planning Statement for this PAS states this area should be retained as open space and managed appropriately for visual enhancement and maintenance of early successional stage vegetation (TRPA 2002).

The project area contains forestland, as defined by PRC §12220 (g): "Forest land" land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

The forestland located within the project area is comprised predominantly by Lodgepole pine, and forested areas are managed by private property owners and the CTC. There are no U.S. Forest Service-managed forestlands associated with the project. The project area contains no timberland or timberland zoned Timberland Production, as defined by Government Code Section 51104(g): "Timberland production zone" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h).

Although the project area is zoned for conservation of forest land, the PAS for Meyers Forest states that "some recent timber harvest has been allowed to help eliminate a problem with insect infestation" (TRPA 2002).

There is no farming, agriculture land use, or Williamson Act contracts on or near the project site.

4.2.2 Regulatory Setting

CEQA requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

4.2.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) §12220(g)), timberland (as defined by PRC §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))?	Less Than Significant Impact with Mitigation Incorporated
d) Result in the loss of forest land or conversion of forest land to non-forest use?	Less Than Significant Impact with Mitigation Incorporated
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?	Less Than Significant Impact

4.2.4 Answers to CEQA Checklist Questions

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact

As discussed in the Environmental Setting section, the project is not located in an area of 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 (California Department of Conservation 2016). Therefore, there would be no impact.

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

No Impact

Williamson Act Contracts are formed between a county or city and a landowner for the purpose of restricting specific parcels of land to agricultural or related open space use; private land within locally-designated agricultural preserve areas is eligible for enrollment under a contract (California Department of Conservation 2019a).

As discussed in the Environmental Setting, the area is zoned by TRPA as the Meyers Forest PAS – 123 and has a land use designation as conservation. There is no agricultural use zoning associated with the project, or agricultural preserves and therefore no Williamson Act contracts. There would be no impact.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) §12220(g)), timberland (as defined by PRC §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))? AND

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

Less Than Significant Impact with Mitigation Incorporated

The project area is zoned as Meyers Forest PAS, and contains forestland as defined in PRC §12220(g). There are no timberland resources associated with the project.

The Meyers Forest PAS has a conservation land use designation that prohibits removal of trees larger than 30 inches diameter at breast height (dbh) unless certain findings can be made. TRPA Code Section 61.1.4.A.7 allows for removal of trees larger than 30 inches dbh when required to implement EIP projects. As stated in the project description, the proposed project is included in TRPA's EIP program as a sustainable recreation and transportation project (EIP #03.01.02.0026). Three 30 inch or larger trees are located within the footprint of the proposed roundabout and cannot be avoided to implement the EIP project. Therefore, the Code findings for removal of trees larger than 30 inches dbh can be made for permitting. Impacts on large tree resources would be less than significant.

The project proposes to remove up to 160 total trees on public lands to construct the roundabout improvements. The tree removal is required to accommodate the roundabout footprint that extends beyond the existing ROW of the signalized intersection.

As discussed in Section 3.5 – Construction Controls, the County is required to file a 'Less Than 3 Acre Conversion Exemption' form with CalFire to comply with the requirements of 14 CCR §1104.1(a): Harvesting of trees that is a single conversion to a non-timber growing use of timberland of less than 3 acres.

Per TRPA Code Section 61.1.8, substantial tree removal may occur if activities on project areas larger than 3 acres propose the removal of 100 or more trees 14-

inches dbh or larger, or, propose tree removal that as determined by TRPA after a joint inspection with appropriate state or federal Forestry staff does not meet the minimum acceptable stocking standards set forth in subparagraph 61.1.6.H. Trees proposed for removal range between 6 to 36-inches dbh in size; however, the exact number of live trees 14 inches dbh or greater proposed for removal is not known at this time. Final tree removal amounts and size information would be provided to TRPA during final design and for the EIP permit approval process. Because final permit approvals have not occurred, it is unknown if proposed tree removal would be considered substantial per TRPA Code. TRPA has established protocols for mitigating tree loss on EIP projects that have been determined to mitigate impacts to less than significant. As such, the County will implement **Mitigation Measure FR-1** to determine if the project qualifies as substantial removal and ensure the project area meets the minimum stocking standards.

- **Mitigation Measure FR-1: Tree Removal Assessment**. Prior to final design development, the County shall coordinate with TRPA to determine if proposed tree removal qualifies as substantial removal. Should TRPA determine substantial removal would occur, as set forth in TRPA Code subparagraph 61.1.8, the County shall submit a harvest/tree removal plan prepared by a qualified forester and develop a conservation plan with area to be reforested/protected as required by TRPA. The plans, as approved by TRPA, shall become a part of the project and prescriptions contained in the plan shall be conditions of approval.

Finding: Implementing Mitigation Measure FR-1 would follow established TRPA mitigation protocols to reduce potentially significant impacts to tree resources to less than significant.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Less Than Significant Impact

Refer to responses a-d. There is no agricultural or farming use associated with the project. The project proposes tree removal within forested land; however, removal is necessary to construct the public use transportation project and must be located within the existing infrastructure corridor. Because the project is required to comply with TRPA Code and project approvals process for tree removal, impacts would remain less than significant, and the project would not result in a conversion of forest land to non-forest land.

4.3 AIR QUALITY

4.3.1 Environmental Setting

The project is located within the El Dorado County portion of the Lake Tahoe Air Basin (LTAB). Mobile sources of air pollution, mainly motor vehicles, are among the most significant sources of pollution and greenhouse gases in the Tahoe Basin. The LTAB is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, air temperature gradients, and existing air pollutant sources coupled with local topography affect the dispersion of air pollution and air quality in the LTAB.

Most airborne pollutants in the LTAB come from three sources related to populated areas that generate airborne anthropogenic materials: road dust, vehicle exhaust, and chimney smoke. Undeveloped areas in the LTAB produce airborne dust and smoke from natural sources like forest fires as well as direct and indirect effects of land management practices (e.g., prescribed burns). In addition, airborne materials generated in downwind areas, including the San Francisco Bay Area and the Central Valley, are carried upwind to the LTAB by the region's prevailing winds. As a result of the various potential emission sources, air quality regulations in the LTAB focus on the following air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, fine particulate matter ($PM_{10,}$ and $PM_{2.5}$), and lead. These pollutants are commonly referred to as "criteria air pollutants."

According to the TRPA Environmental Threshold Carrying Capacities (ETCC), the indicators for carbon monoxide, ozone, particulate matter, and Vehicle Miles Traveled (VMT) are in non-attainment (TRPA 2020c). For other criteria pollutants, the LTAB is either in attainment or unclassified for the remaining national, state, and regional standards.

4.3.2 Regulatory Setting

Air Quality Standards

Air quality within the LTAB is regulated by several agencies including TRPA, the United States Environmental Protection Agency (EPA), CARB, and the County. These agencies develop rules, regulations, policies, and/or plans to achieve the goals and directives imposed through legislation.

Federal

The EPA is responsible for implementing the federal Clean Air Act (CAA) (1970), including establishing health-based National Ambient Air Quality Standards (NAAQS) for air pollutants. NAAQS established for criteria pollutants under the CAA are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, $PM_{10,}$ and $PM_{2.5}$, and

lead. The standards set for criteria pollutants are periodically reviewed and revised as applicable.

Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the CAA Amendments of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. Of the 21 identified mobile source air toxics (MSAT) compounds, the EPA has listed seven as "priority" MSATs: benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, 1,3-butadiene, naphthalene, and polycyclic organic matter.

The FHWA released Updated Interim Guidance in October 2016 (FHWA 2016b) for determining when and how to address MSAT impacts in the National Environmental Policy Act (NEPA) process for transportation projects. The MSAT rules reduce hazardous air pollutants, also known as air toxics, emitted by cars and trucks. The nine criteria mobile air toxics for which highway projects need to assess include 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. This Updated Interim Guidance incorporates new analysis conducted using the EPA's Motor Vehicle Emissions Simulator 'MOVES2014a' which reflects diesel particulate matter (diesel PM) being the dominant MSAT of concern for highway projects.

Screening Criteria

The project's potential for MSAT impacts was analyzed using FHWA's 2016 Interim Guidance on Addressing MSAT, the Caltrans Flowchart for Analyzing Mobile Source Air Toxics, and the California Air Resources Board Air Quality and Land Use Handbook (GHD 2021).

Based on FHWA's Updated Interim Guidance for analyzing MSAT, the project is considered a 'Tier 2' project – a project with low potential for MSAT effects. The types of projects improve operations of the facility without adding substantial new capacity (GHD 2021).

For these projects, a qualitative assessment of emissions projections should be conducted. This qualitative assessment should compare, in narrative form, the expected effect of the project on traffic volumes, vehicle mix, or routing of traffic and the associated changes in MSAT for the project alternatives, including no-build, based on VMT, vehicle mix, and speed. Because the emission effects of these projects typically are low, the FHWA expects there would be no appreciable difference in overall MSAT emissions among the various alternatives.

State

In California, CARB is responsible for implementing the California Clean Air Act (1988) and has established California Ambient Air Quality Standards (CAAQS),

which are to date more restrictive than the national standards. In general, the CARB works with local agencies to develop policies, guidance, and regulations related to state and federal ambient air quality standards; coordinates with local agencies on transportation plans and strategies; and provides assistance to local districts and transportation agencies to meet air quality standards established under both the federal and California clean air acts. With respect to the CAAQS, the project area is in attainment for all standards except the 24-hour PM_{10} standard.

Local - TRPA

TRPA has jurisdiction within the LTAB-portion of El Dorado County regarding air quality. The TRPA Bi-State Compact between California and Nevada states that the Regional Plan shall provide for attaining and maintaining federal, state, or local air quality standards, whichever are strictest, in the respective portions of the Lake Tahoe Region for which the standards are applicable.

Because TRPA's authority is granted directly from Congress, TRPA has the authority to adopt air quality and other environmental quality thresholds, and to enforce ordinances designed to achieve those thresholds.

Table 1 below describes the ETCC for the LTAB.

Table 1. Tahoe Regional Planning Agency Air Quality Thresholds of Significance

Pollutant	Primary Construction Threshold	Secondary Construction Threshold
ROG	82 lbs/day	n/a
NOx	82 lbs/day	n/a
Carbon Monoxide	8-hour average: 6 ppm	1-hour average: 20 ppm
PM_{10}	Annual arithmetic mean: 20 µg/m^3	24-hour average: 50 µg/m^3
$PM_{2.5}$	Annual arithmetic mean: 12 µg/m^3	24-hour average: 65 µg/m^3
Ozone	8-hour average: 0.07 ppm	1-hour average: 0.08 ppm

Table Notes:
n/a = not applicable
lbs/day = pounds per day
NOx = nitrogen oxides
PM = particulate matter; number refers to size of PM in microns in diameter or smaller
ppm = parts per million

ROG = reactive organic gases
µg/m^3 = micrograms per cubic meter

According to the TRPA ETCC, the indicators for carbon monoxide, ozone, particulate matter, and VMT are in non-attainment (TRPA 2019). For other criteria pollutants, the LTAB is either in attainment or unclassified for the remaining national, state, and regional standards.

Local – El Dorado County AQMD

The El Dorado County AQMD is the primary agency responsible for air quality regulation in the LTAB. As part of that role, the El Dorado County AQMD has prepared the 2002 CEQA Guide to Air Quality Assessment (El Dorado County 2002). The purpose of the Guide is to facilitate the evaluation and review of air quality impacts for projects in El Dorado County that are subject to CEQA. The guide's intent is to facilitate and provide consistency in the preparation of analyses that inform decision-makers and the public about the air quality implications of a project. The Guide to Air Quality Assessment has established construction thresholds for air quality for priority pollutants shown in **Table 2**.

Table 2. El Dorado County AQMD Thresholds of Significance

Pollutant	Construction Threshold
ROG	82 lbs/day
NOx	82 lbs/day
PM_{10}	Project would cause or contribute to a violation of Ambient Air Quality Standards
Carbon Monoxide	Project would cause or contribute to a violation of Ambient Air Quality Standards

Table Notes:
lbs/day = pounds per day
NOx = nitrogen oxides
PM = particulate matter; number refers to size of PM in microns in diameter or smaller
ROG = reactive organic gases
Source: El Dorado County 2002

Screening Criteria - Construction

For roadway projects, El Dorado County recommends use of the Roadway Construction Emissions Model (RCEM) to estimate emissions associated with linear construction projects (El Dorado County 2002). The RCEM is a spreadsheet-based model that can use basic project information (e.g., total construction months, project type, total project area) to estimate exhaust emissions from heavy-duty construction equipment, haul trucks, and worker commute trips associated with linear construction projects, as well as fugitive dust. Results of the model quantifies construction-related criteria air pollutant emissions for construction projects.

Screening Criteria - Operational

The project was evaluated for its anticipated contribution to operational emissions using the EMFAC2021 model (v1.0.0) to assess baseline condition (no-build, year 2018) versus operational build year 2023, and 2040 for long-range assessment.

4.3.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	Less Than Significant Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Less Than Significant Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact

4.3.4 Answers to CEQA Checklist Questions

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact

Projects that could generate emissions in excess of the El Dorado County AQMD and the TRPA ETCC recommended significance thresholds would be considered to potentially conflict with or obstruct implementation of the applicable air quality plan. The AQMD has identified the most common sources of emissions from construction projects as site preparation, earthmoving, and general construction. The emissions generated from these activities include the following:

- Combustion emissions: (reactive organic gases [ROG], nitrogen oxides [NOx], carbon monoxide, sulfur oxides, PM_{10}) from mobile heavy-duty diesel and gasoline powered equipment, portable auxiliary equipment, and worker commute trips; and
- Fugitive dust (PM_{10}) from soil disturbance or demolition.

Short-term construction-generated emissions are not projected to exceed applicable thresholds of significance due to the short duration required for construction and adherence to the applicable County and TRPA requirements outlined in the construction controls Section 3.5.1, Air Quality. The project is required to comply with AQMD Rule 223, which includes requirements for

construction projects, including preparation of a Fugitive Dust Control Plan. Other control measures for construction and other earth moving activities must follow recommendations presented in Table 1 of Rule 223-1 'Best Management Practice'. These BMPs include, but are not limited to, stabilizing disturbed soil, limiting vehicular traffic, applying water to disturbed soil, limiting size of staging area, and use of tarps to cover loose soils. Implementation of the required controls is anticipated to keep construction emissions to a less than significant level.

Additionally, as presented below in item b), the project would result in lower emissions for all pollutants in 2023 and 2040 except for PM_{10} in year 2040 (GHD 2021).

Thus, implementation of the project would not conflict with nor obstruct implementation of applicable air quality plans.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact

The project has the potential to produce air pollutant emissions during construction activities, but also has the potential to reduce area emissions during operations by improving circulation and encouraging non-motorized trips.

Construction Screening

Construction of the project would result in short-term increases in emissions caused by typical construction activities, such as grading and excavation, and vehicle exhaust from construction equipment. Increased emissions would consist of ROG, nitrogen dioxide, particulates, carbon monoxide, sulfur dioxide, and NOx. Emissions of ozone-precursors could result from the operation of both on and off-road motorized vehicles and equipment.

Average daily construction exhaust emissions for the project were estimated using the RoadMod (RCEM) Model (version 9.0.0). Inputs to the model included the construction years, total expected duration, proposed equipment usage, and total road length constructed. Other model inputs such as soil import and export, concrete and asphalt truck trips were input to the model. The model predicts emissions of ozone precursor pollutants (i.e., ROG and NOx) and particulate matter (i.e., $PM_{10,}$ and $PM_{2.5}$). Conservative estimates for all model inputs were used to present a 'worst-case' scenario of emissions generated by construction of the project.

Table 3 displays a summary of the average daily emissions estimates from work associated construction of the roundabout, pedestrian and bicycle improvements, lane striping, and streetscape improvements. The results of the RoadMod emission

calculations are included in **Appendix B**. The emissions presented are based on the best information available at the time of calculations.

Table 3. Estimated Construction Emissions for Project Construction

Scenario	ROG	NOx	Total PM_{10} (exhaust + dust)	Total $PM_{2.5}$ (exhaust + dust)
Total construction emissions (tons)	0.06 tons	0.20 tons	1.88 tons	0.40 tons
Average daily emissions (pounds)	1.90 lbs/day	5.48 lbs/day	50.31 lbs/day	10.64 lbs/day

Table Notes:
*Assumes 120 workdays total (one 4-month construction season)
lbs/day = pounds per day
NOx = nitrogen oxides
PM = particulate matter; number refers to size of PM in microns in diameter or smaller
ROG = reactive organic gases

Operational Screening

GHD conducted operational air emission modeling for criteria air pollutants and GHG emissions utilizing the EMFAC2021 model. The baseline year used for the emissions analysis is 2018, as it represents the 'existing conditions' of the project area and vicinity. The project buildout year is 2023, and the long-range planning horizon is 2040. Operational parameters for Existing, No Build Alternative, and Build Alternative include AADT, fleet mix, average speeds, and VMT. Traffic information used comes from the Intersection Control Evaluation (ICE) and traffic operations analysis (TOA) report prepared for the project prior to traffic changes resulting from the Covid-19 restrictions (GHD 2020). The project roadway length of 1,350 feet (0.255 mile) was used to estimate VMT.

As shown in Table 4, the proposed project (Build Alternative) would result in lower emissions for all pollutants in 2023 and 2040 except for an increase of PM_{10} in year 2040 (0.02 tons) (GHD 2021). A memorandum, summarizing results of the calculated operational emissions, is provided with **Appendix B,** and summarized below.

Table 4. Air Pollutant and Greenhouse Gas Operational Emissions Estimates

Scenario	NOx	ROG	PM10	PM2.5	CO	CO_2	CH_4
2018 Existing Operations	1.4	0.36	0.07	0.04	4.79	1,345.73	0.05
2023 with No Build Alternative	1.11	0.27	0.05	0.03	3.01	1,225.12	0.04
2023 with Build Alternative	0.54	0.08	0.04	0.02	2.45	764.60	0.01
Change (tons)	-0.56	-0.18	0.00	-0.01	-0.56	-490.52	-0.03
Change (percent)	-51%	-68%	-10%	-37%	-18%	-39%	-68%
2040 with No Build Alternative	0.36	0.10	0.03	0.01	1.82	1,124.14	0.02
2040 with Build Alternative	0.16	0.03	0.05	0.01	1.54	700.14	0.01
Change (tons)	-0.20	-0.07	0.02	0.00	-0.28	-424.00	-0.01
Change (percent)	-56%	-72%	37%	0%	-15%	-38%	-72%

Table Notes:
1. All pollutant quantities in annual tons.
2. PM_{10} and $PM_{2.5}$ emissions estimates include running emissions and brakewear.
Difference (change) between No Build Alternative and Build Alternative based on non-rounded numbers.

Whereas the project does not include any uses that would cause an increase in long-term operational emission of ROG or NOx that exceed 55 lbs/day and reduces projected emissions of all pollutants over baseline conditions, a considerable contribution to cumulative impact on air quality would not occur. Cumulative effects would be beneficial.

Mobile Source Air Toxics Emissions - Qualitative

The project would result in an increase in vehicle speed as existing long queuing, long delay, and congestion conditions change to improved flow and reduced congestion. Vehicles would not idle as long at a roundabout as at a signal or stop sign because there would be no requirement to stop or queue while passing through a roundabout. A literature review by the Insurance Institute for Highway Safety found that roundabouts can reduce fuel consumption by 23 to 34% (IIHS018). Because the project would reduce congestion without increasing VMT or AADT, the project will help reduce fuel consumption and associated vehicle emissions. Therefore, it is anticipated that the project would reduce MSAT emissions, as compared with the No Build Alternative (GHD 2021).

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on

regulations now in effect, an analysis of national trends with EPA's MOVES2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 45 percent (FHWA 2016b).

Mobile Source Air Toxics Emissions - Quantitative

Although the project meets the requirements of a 'Tier 2' project where only qualitative assessment is necessary per FHWA guidance, at the request of Caltrans a project-specific quantitative assessment of MSAT was conducted. Results of this analysis show MSAT pollutants associated with the proposed project would be substantially lower than that of the 'no-build' scenario. Results of the quantitative MSAT emissions analysis is included in GHD's *Assessment of Air Quality Pollutant, Greenhouse Gas, and Mobile Source Air Toxics* memorandum, included with **Appendix B**.

In summary, the project would not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause a meaningful increase in MSAT or other operational pollutants. As shown in Table 4, the project would have a beneficial effect on air quality through reduced operational emissions. By pollutant type, the Build Alternative is estimated to generate approximately 10% to 68% fewer operational emissions than the No Build Scenario in Year 2023. The only pollutant that would increase with the Build Alternative would be PM_{10} in year 2040, but it is still a reduction from baseline conditions. The Build Alternative is estimated to generate 0.05 lb/day, or 0.0099 ton/year, of additional PM_{10} as compared to the No Build Alternative.

Whereas the project would cause a reduction in long-term operational emission of air pollutants over baseline conditions except for a negligible increase in PM_{10} in year 2040 a considerable contribution to cumulative impact on air quality would not occur. Cumulative effects would be beneficial.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

Sensitive receptors are children, elderly, asthmatics, and others whose are at a heightened risk of negative health outcomes due to exposure to air pollution. The locations where these sensitive receptors congregate are considered sensitive receptor locations. Sensitive receptor locations may include hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine (California Health and Safety Code § 42705.5(a)(5)).

The nearest sensitive receptor to the project area is the Lake Tahoe Environmental Science Magnet School, located approximately 0.5 miles west of the project area.

Residential uses adjacent to the project area, and the Tahoe Paradise Golf Course located south of the project area may also be considered sensitive to emissions.

As discussed in CEQA items a) and b), the project design incorporates construction controls that protect against significant amounts of pollutants from being generated by the project during construction, including fugitive dust control, should persons susceptible to pollution be present within the project area. Operational and cumulative emissions (including MSAT)are anticipated to be reduced. Therefore, project effects on sensitive receptors would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact

During construction, operations may periodically generate odors from exhaust emissions, ground disturbance, and paving operations. Odors created by construction operations would be temporary, would occur within the project footprint, and would dissipate rapidly from the source with an increase in distance and due to the linear nature of construction activities.

Dust and emission reduction BMPs as discussed in Section 3.5.1 would minimize the impact on ambient odors of the natural area. Once the project is complete, it would not generate objectionable odors. Therefore, impacts would be short-term and would not be objectionable to a substantial number of residents within the area; impacts would be less than significant.

4.3.1 TRPA Checklist – Air Quality

TRPA Questions	Answers	Discussion
2a) Would the proposed project result in substantial air pollutant emissions?	No	Refer to discussion of CEQA item a) and b). Short-term construction-generated emissions are not projected to exceed applicable Standard Levels due to the short duration required for construction and adherence to applicable County and TRPA requirements. Operational impacts of the proposed project are anticipated to have a beneficial impact on air quality.
2b) Would the proposed project result in deterioration of ambient (existing) air quality?	No	Refer to discussion of CEQA item b). Once constructed, the proposed project is anticipated to have a beneficial impact on air quality due to an improvement in traffic flow and reduction of idling that contributes to a reduction in vehicle emissions.

4.4 BIOLOGICAL RESOURCES

4.4.1 Environmental Setting

The project area is largely developed, consisting of the existing Pioneer Trail/US 50 ROW intersection. Adjacent to the ROW is fragmented Jeffrey pine forest, lodgepole pine forest, and perennial grassland vegetation. Meyers Creek is located approximately 200 feet west of the project area/US 50 road corridor (**Figure 8**).

NCE conducted a literature and database review to identify existing biological and botanical information within and adjacent to the project area in support of an NES prepared for Caltrans (NCE 2020a; **Appendix C**). The purpose of the NES was to identify the potential for special status species (SSS) and critical habitat to occur within the project area and within a one-mile radius around the project area (herein referred to as the Biological Study Area, or BSA). NCE scientists also conducted reconnaissance-level surveys to inventory habitats, SSS, and non-SSS. SSS include all botanical or wildlife species with special protection or consideration under federal, state, and local regulatory policies.

A United States Fish and Wildlife Service (USFWS) species list was accessed through the Information Planning and Conservation (IPaC) website for the proposed project area and vicinity; results of the IPaC report indicate no critical habitat exists within the project area. The Caltrans-signed Preliminary Environmental Analysis Report also indicated no need for a Biological Assessment. As a result, it was determined that the project would have no effect on federally endangered, threatened, or candidate species; therefore, no Section 7 consultation with the USFWS is required for this project.

The following subsections summarize results of the NES.

Wildlife

Special status species databases were reviewed to determine the potential for special status wildlife to occur within the area. The following site-specific references and background information were reviewed:

- California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] n.d.);
- Information for Planning and Conservation (IPaC; USFWS n.d.); and,
- TRPA Special Interest Species (TRPA 2007).

The database review identified a total of 16 animal SSS known to occur or with the potential to occur within the BSA. Table 3 of the NES (**Appendix C**) lists all the SSS that have potential to occur within the BSA as well as a brief rationale as to the

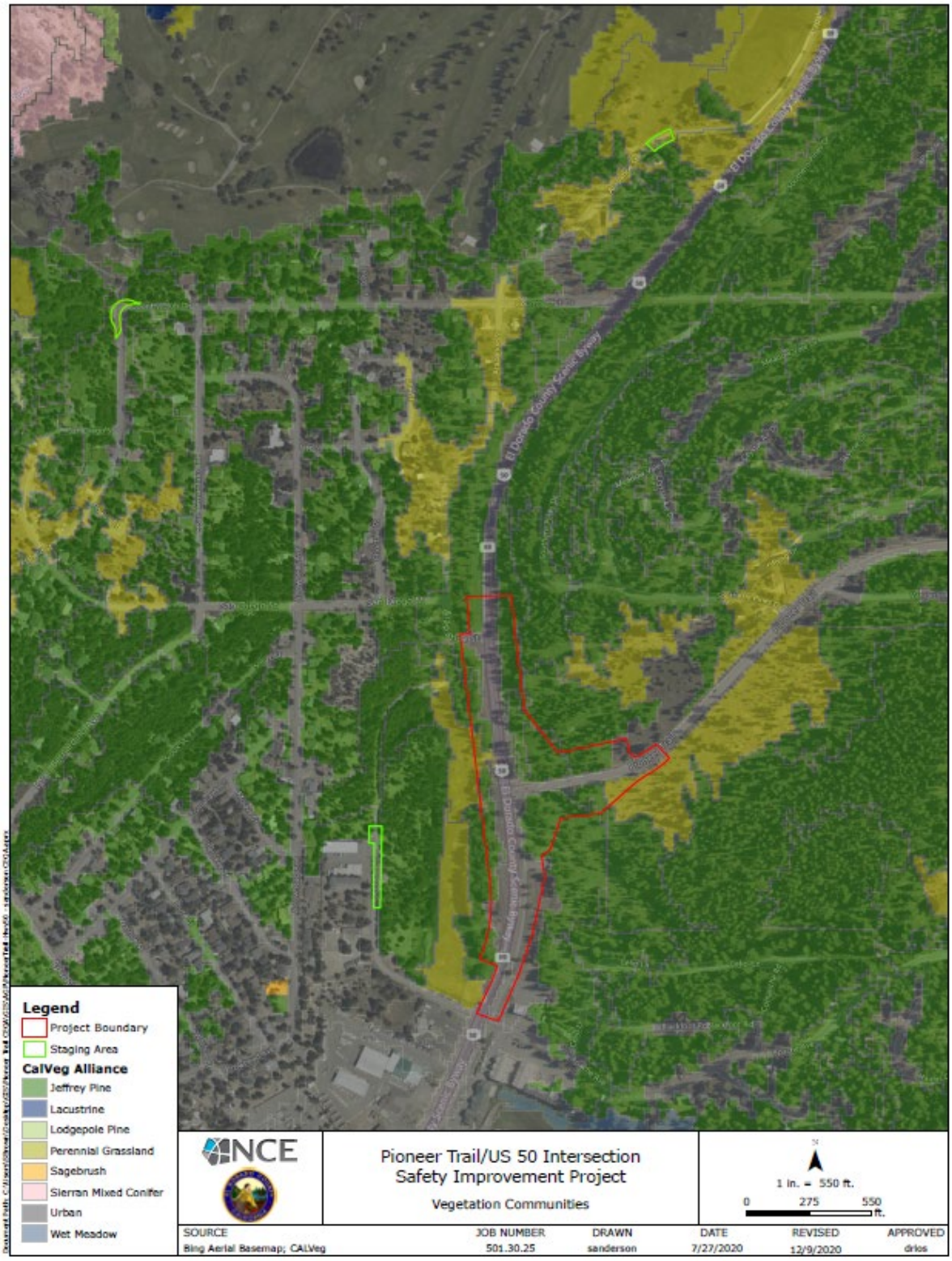


Figure 8. Vegetation Communities

conclusion that due to the disturbed nature of the project area and lack of suitable habitat, SSS would not occur within the project area.

Additionally, suitable habitat is absent for the three federally listed animal species known to occur in the region of the project (Lahontan cutthroat trout, North American wolverine, and Sierra Nevada yellow-legged frog) (NCE 2020a).

Wildlife Corridors

A wildlife corridor is an area of habitat connecting wildlife populations and larger areas of similar wildlife habitat. These corridors generally consist of native vegetation and allow wildlife species to find water, food, shelter, and potential mates. Corridors enable the movement of animals and the continuation of viable populations, thus playing a role in the maintenance of biodiversity. Results of the NES conclude the project area does not include any wildlife corridors (NCE 2020a).

Botanical Resources

The project area contains areas of existing developed roadway surrounded by forested land (**Figure 8**). Vegetation types were initially identified with the CALVEG Alliances geographic information system (GIS) data (U.S. Department of Agriculture 2020) then verified based on reconnaissance-level botanical surveys. Biologists conducted the surveys by walking the entire BSA following CDFW protocols (CDFW 2018).

A total of 30 special status plant species were identified within a nine-quad search in the vicinity of the project area based on historical documentation in the CNDDB and the California Native Plant Society's Rare Plant Inventory (NCE 2020a).

No botanical SSS were identified during reconnaissance-level surveys, and it has been determined botanical SSS do not have the potential to occur within the project area due to the lack of undisturbed suitable habitat within or adjacent to the project area. Additionally, none of the plant communities in the project area qualify as Natural Communities of Special Concern (NCE 2020a). A complete description of the vegetation communities present within the BSA are included in the attached NES (**Appendix C**).

Invasive Species

One invasive plant species, Sulphur cinquefoil (*Potentilla recta*) was identified during reconnaissance level surveys (NCE 2020a). For the purposes of this report, noxious weeds are those plants which are designated as "noxious" by the United States Department of Agriculture, or the California Department of Food and Agriculture, any plants listed as "Moderate" or "High" risk on the California Invasive Plant Council's Invasive Plant Inventory, weed species listed as "Medium" or "High" priority by the United States Forest Service Lake Tahoe Basin Management Unit and any plants listed by the Lake Tahoe Basin Weeds Coordinating Group.

Aquatic Resources

An aquatic resource delineation survey was conducted by NCE wetland specialists on September 17, 2019 to evaluate the potential of jurisdictional waters of the United States within the project area. The aquatic resources delineation resulted in the identification of three (3) ephemeral aquatic resource features that, at the time of the delineation and preparation of the Aquatic Resource Delineation Report, were jurisdictional features regulated under Section 404 of the Clean Water Act (CWA). No wetlands or riparian habitat were identified within the project area, and no potentially jurisdictional features were identified within the staging areas (NCE 2020b).

Since the development of the Aquatic Resources Delineation Report, the 2020 Navigable Waters Protection Rule (NWPR) (effective June 22, 2020) went into effect, notably changing the definition of 'waters of the United States' (WOUS). Under the 2020 NWPR, ephemeral drainages are no longer considered WOUS, and are therefore not regulated under Section 404 of the CWA (EPA 2020).

Per the 2020 NWPR, there are no federally jurisdictional drainages associated with the project. The County's consultant, NCE, has obtained concurrence of this determination from the United States Army Corps of Engineers (USACE). A record of the correspondence is provided in **Appendix D**, along with the initial (pre-NWPR) Aquatic Resource Delineation Report.

The aquatic resource drainages are, however, still considered surface waters of the State of California.

Stream Environment Zones

The TRPA Code defines SEZ as, "Generally an area that owes its biological and physical characteristics to the presence of surface or ground water." This definition includes perennial, intermittent, and ephemeral streams; wet meadows, marshes, and other wetlands; riparian areas, beaches, and other areas expressing the presence or influence of surface or ground water. TRPA regulates SEZ within the Tahoe Basin under the Clean Water Act's 208 Plan program.

The northern portion of the project area is mapped as SEZ (TRPA Land Capability District 1B) based on a 2012 Land Capability Verification (LCV) for the Meyers Erosion Control Project (El Dorado County 2016). The project area was not specifically verified as part of the 2012 LCV effort – the SEZ boundary for the project area is based on the TRPA 'Sinclair' data layer (**Figure 9**).

4.4.2 Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS. Section 9 of the FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). This statute also governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law.

Under Section 7 of the FESA, federal agencies are required to consult with the USFWS and/or National Oceanic and Atmospheric Administration–National Marine Fisheries Service if their actions, including permit approvals or funding, could adversely affect a federally listed species (including plants) or its critical habitat.

Clean Water Act

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into WOUS, which includes wetlands under Sections 401 and 404 of the CWA and Section 10 of the Rivers and Harbors Act.

Section 401 requires that an applicant proposing to conduct any activity that may result in a discharge to a WOUS must apply for and secure a Water Quality Certification prior to construction activities. As discussed in the Environmental Setting, there are no WOUS associated with the project, and therefore Sections 404/401 of the CWA do not apply.

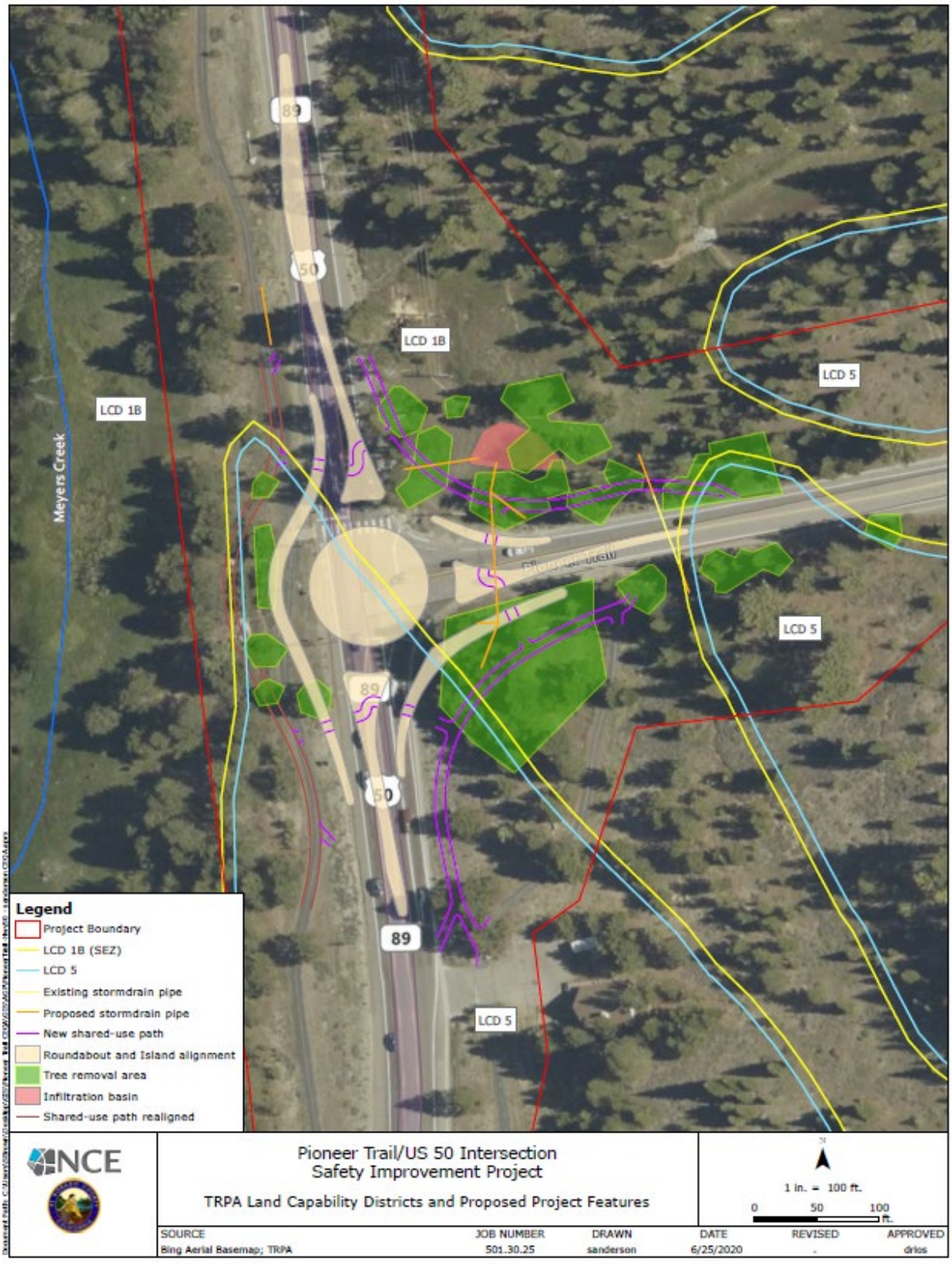


Figure 9. TRPA Land Capability Districts and Proposed Project Features

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game (CDFG) Code (Section 3500) also prohibits the destruction of any nest, egg, or nestling.

Executive Order 13112 – Invasive Species

Executive Order 13112 requires federal agencies to combat the introduction or spread of invasive species in the United States. Invasive species are defined 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 guidance issued August 10, 1999, directs the use of the 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 analysis of a proposed project within California.

State

California Fish and Wildlife

The CDFW is responsible for protecting and conserving fish and wildlife resources, and the habitats upon which they depend. Section 1602 of the California Fish and Game Code requires that the CDFW review any project that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake.
- Change the bed, channel, or bank of any river, stream, or lake.
- Use material from any river, stream, or lake.
- Deposit or dispose of material into any river, stream, or lake.

Under the Lake and Streambed Alteration (LSA) Program, entities are required to notify the CDFW of proposed impacts through an LSA Notification. If it is determined by the CDFW that the activity, as described in an LSA Notification, would substantially alter a river, stream, or lake, and may substantially adversely affect existing fish or wildlife resources, then an LSA Agreement must be prepared. The LSA Agreement includes necessary mitigation measures to protect fish and wildlife resources from significant impacts.

Local – Tree Removal

TRPA Code regulates the removal of trees under Section 33.6.5. TRPA Code also states requirements for retained tree protection during construction, provides standards for soil and vegetation protection during tree removal, and prevents tree removal within SEZ unless certain conditions are met.

4.4.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
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 & Wildlife (CDFW) or U.S. Fish & Wildlife Service (USFWS)?	Less Than Significant Impact 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 CDFW or USFWS?	Less Than Significant Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less Than Significant Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant Impact
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

4.4.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact with Mitigation Incorporated

The NES (NCE 2020a) reviewed the proposed project in sufficient detail to determine the extent to which the project may affect any federally designated SSS and/or designated critical habitat.

Database searches identified 30 federally listed plant species and 16 federally listed wildlife species with potential to occur within the project area. The official list is provided in the attached NES (**Appendix C**). None of the 30 special status plant species have potential to occur due to the lack of undisturbed suitable habitat within or adjacent to the project impact area, and no botanical SSS were observed during field surveys.

Additionally, the 16 wildlife SSS identified by the database research of the BSA were determined to be absent within the project impact area as noted in Table 3 of the attached NES, and no suitable habitat exists for the three federally listed animal species known to occur in the region of the project area.

Migratory Birds

Presence of trees within the project area contain suitable habitat for nesting migratory birds. Migratory birds are protected under the MBTA, and birds of prey are also protected in California under provisions of the CDFG Code, Section 3503.5. Both make it illegal to "take" protected species except under the terms of a permit. It is possible that nesting habitat could be disturbed during construction due to tree removal, noise, and vibrations from construction equipment. This would be a potentially significant impact on migratory birds, and/or birds of prey. Therefore, Mitigation Measure Bio-1 requires pre-construction surveys and if active nests are found, construction to be delayed until birds have fledged or a qualified biologist has determined it is safe to proceed without risking a take:

- **Mitigation Measure BIO-1, Pre-construction Avian Survey**: If any construction activities (e.g., grubbing or grading) are scheduled during the bird nesting season (typically defined by CDFW as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist, as determined by TRPA or CDFW, to conduct a pre-construction survey of the project area to include a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests appropriate to the conditions found, and locate any other special status species. The pre-construction survey shall be conducted no more than 10 days prior to the implementation of construction activities (including staging and equipment storage). Any special status species (including migratory birds) shall not be disturbed unless under the direction provided by a qualified biologist. If an active nest is found during construction, disturbance should not occur until young have fledged or under the direction provided by a qualified biologist.

Finding: Implementing Mitigation Measure (MM) BIO-1 would reduce potentially significant impacts to migratory birds and nesting birds of prey to less than significant.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

Less Than Significant Impact

As discussed in the Environmental Setting, the project area does not contain riparian habitat.

Aquatic Resources

As discussed in the Environmental Setting, there are no wetlands or aquatic resource features meeting the definition of a WOUS; therefore, there are no federally regulated aquatic resource features.

The project area does contain surface waters of the state of California. Project grading and installation of site drainage improvements will occur over and within ephemeral drainages. Water quality impacts to waters of the state are discussed in Section 4.10 – Hydrology and Water Quality.

California Fish and Game Code Section 1602 requires a LSA Notification or Agreement to be prepared if a project would significantly alter a bed or bank of an aquatic feature. It is unknown at this time if the CDFW will consider these drainages to be under their jurisdiction. If the CDFW chooses to be involved, the LSA permit provides a mechanism for Trustee agencies to closely review projects and establish mitigation protocols that they have determined will mitigate what they consider to be adverse impacts on sensitive natural communities to less than significant. Therefore, additional mitigation is not proposed at this time.

Stream Environment Zone

New disturbance and land coverage in the SEZ land capability district (LCD) 1B is required to implement the project. The project proposes the roundabout and associated Class I/shared-use trail that results in approximately 26,000 square feet of new coverage and 26,000 square feet of disturbance within the SEZ boundary.

Both TRPA and the Lahontan RWQCB prohibit new SEZ disturbance except for limited uses, such as public service, that can demonstrate compliance with restrictive findings. As discussed in Geology and Soils, Section 4.7, the project complies with required findings and results in an overall reduction in SEZ disturbance by implementing **Mitigation Measure GEO-1**, which provides restoration in the amount of 1.5:1 times the disturbance calculated for the project.

- **Mitigation Measure GEO-1: SEZ Restoration Credit for New Trail Disturbance.** See Section 4.7, Geology and Soils, for additional discussion.

Finding: Compliance with requirements of TRPA Code and Lahontan Basin Plan to mitigate for coverage caused by the new Class 1 shared-use trail and roundabout by providing offsetting SEZ restoration in the amount of 1.5:1 mitigates potential impact to SEZ to less than significant.

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

No Impact

As discussed in the Environmental Setting, there are no state or federally protected wetlands in the project area; therefore, there would be no impact.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact

As discussed in the Environmental Setting, the project area does not contain designated wildlife corridors, and the developed nature of the site makes it unlikely for the area to be used as a wildlife corridor. It is possible for migratory species such as birds and mammals to passively use the area; however, the project does not propose to modify any existing undeveloped land areas or install structures in a manner that would impede potential migration of mammals. As provided in **Mitigation Measure BIO-1**, the project will be surveyed for migratory birds nesting in the project area prior to construction to prevent significant impacts to a migratory bird species during construction; therefore, additional mitigation for migratory birds would not be required and impacts would be less than significant.

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

Less Than Significant Impact

Refer to CEQA items c) and d) above in Section 4.2 – Agricultural and Forestry Resources. Within the project area, approximately 160 trees between the size of 6 inches dbh and 36 inches dbh, will be removed during construction of the roundabout. Three trees over 30-inches dbh would be removed within the roundabout and shared-use path footprint. As documented in the analysis for CEQA items 4.2 c) and d), the removal of trees larger than 30 inches dbh is permissible for this EIP project under TRPA Code Section 61.1.4.A.7. Therefore, the proposed project would not conflict with local policies and ordinances protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

The project area contains land designated by TRPA as 'Conservation' associated with the Meyers Forest PAS. The project would not conflict with the planning statement associated with this land use designation, which identifies public service transportation routes as a permissible use.

There are no other Habitat Conservation Plans, Natural Community Conservation Plan, or other adopted conservation plans associated with the project area; there would be no impact.

4.4.1 TRPA Checklist

TRPA Questions – Vegetation	Answers	Discussion
4a) Would the proposed project result in removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system?	No	Refer to CEQA Question e) above; the project is exempt from TRPA Tree Removal requirements as it is part of an EIP program and required for public health and safety. The project must comply with TRPA vegetation protection controls during construction and would only remove vegetation necessary for project implementation and at the approval of TRPA.
4b) Would the proposed project result in removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table?	No	As discussed in the Environmental Setting, there is no riparian vegetation associated with the project, nor is there critical wildlife habitat; therefore, there would be no direct indirect impacts to critical wildlife habitat or riparian vegetation associated with the project.
4c) Would the proposed project result in the introduction of new vegetation that would require excessive fertilizer or water, or would provide a barrier to the normal replenishment of existing species?	No	Revegetated areas would utilize native species as to not require fertilizer or excessive watering. Additionally, because the project is being constructed in an existing developed intersection, construction of the project would not result in a barrier to the normal replenishment of existing species.

4d) Would the proposed project result in change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora, and aquatic plants)?	No	Construction of the project would not result in a change of diversity of species. Required tree removal associated with construction of the roundabout would not result in a change of distribution of the species on a regional level. As discussed in the Environmental Setting, one invasive weed species, Sulphur cinquefoil, was identified in the project area. The following weed best management practices were identified in the NES to protect against the spread of noxious and invasive weeds during construction, and have been incorporated into the project: • All hay, straw, hay bales, straw bales, seed, mulch, or other material used for erosion control or landscaping shall be free of noxious weed seeds and propagules. Noxious weeds are defined in Title 3, Division 4, Chapter 6, Section 4500 of the CCR and the California Quarantine Policy – Weeds. • All equipment brought to a project area for construction shall be thoroughly cleaned of all dirt and vegetation prior to entering the site to prevent importing noxious weeds. • All materials brought to a project area, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weed seeds and propagules. • The property owner shall maintain and implement an effective program for the monitoring and control of noxious weeds.

TRPA Questions – Vegetation	Answers	Discussion
4e) Would the proposed project result in the reduction of the numbers of any unique, rare, or endangered species of plant?	No	Refer to the response to CEQA question a) above. There are no SSS plant species associated with the project. There would be no impact.
4f) Would the proposed project result in removal of stream bank and/or backshore vegetation, including woody vegetation such as willows?	No	No such habitat or vegetation exists within the project area; drainages delineated by NCE within the project area were determined to be in uplands and do not contain such species. There would be no impact.
4g) Would the proposed project result in removal of any native live, dead, or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications?	Yes	Refer to CEQA items c) and d) above in Section 4.2 - Agricultural and Forestry Resources. Within the project area, approximately 180 trees between the size of 6 inches dbh and 36 inches dbh, will be removed during construction of the roundabout. Three trees over 30-inches dbh would be removed within the roundabout and shared-use path footprint. As documented in the analysis for CEQA items 4.2 c) and d), the removal of trees larger than 30 inches dbh is permissible for this EIP project under TRPA Code Section 61.1.4.A.7. However, the project will implement **Mitigation Measure FR-1** to conduct a tree removal assessment to determine with the TRPA if significant impacts would occur.
4h) Would the proposed project result in the reduction of the numbers of any unique, rare, or endangered species of plant?	No	Tree removal required for the project is associated with tree stands immediately adjacent to an existing transportation corridor. While the affected trees provide habitat for commonly found wildlife species and nesting birds, the removal does not affect late seral habitat defined as an old growth ecosystem.

TRPA Questions – Wildlife	Answers	Discussion
5a) Would the proposed project result in change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians, or microfauna)?	No	Refer to response to CEQA question a) above. There are no wildlife corridors, nursery sites, or critical habitat within the project area. Implementation of **Mitigation Measure BIO-1** would protect against potential significant impact to nesting bird species. There are no aquatic species associated with the project.
5b) Would the proposed project result in reduction of the number of any unique, rare, or endangered species of animals?	No	Refer to the Environmental Setting and response to CEQA question a) above. There are no unique, rare, or endangered species of animals associated with the project or project area.
5c) Would the proposed project result in introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	No	The project proposes to construct transportation improvements in an existing, developed transportation corridor, and therefore does not propose features that may act as a barrier to the migration or movement of animals. As discussed in CEQA item d) above, there are no wildlife corridors associated with the project. Additionally, incorporation of **Mitigation Measure BIO-1** would reduce any potential impacts to migrating bird species to a less than significant level.

TRPA Questions – Wildlife	Answers	Discussion
5d) Would the proposed project result deterioration of existing fish or wildlife habitat quantity or quality?	No	There is no existing fish habitat associated with the project area. As discussed throughout this section, no critical or sensitive natural communities were identified within the project area. Potential impacts to migratory bird species would be mitigated to less than significant through implementation of **Mitigation Measure BIO-1.** No other significant fish or wildlife impacts requiring mitigation were identified. Potential for wildlife habitat is limited due to the existing use of the project area as a transportation corridor.

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

Project screening for cultural and historic resources as part of the project was conducted by NCE archaeologists between 2019 and 2020. Screening efforts consisted of an archival review, Native American tribal consultation, an intensive pedestrian survey, and recordation of any identified resources. An associated Archaeological Survey Report (ASR) was prepared by NCE to detail results of the screening efforts. The ASR (NCE 2020c) was used to support preparation of a Historic Property Survey Report (HPSR) consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR 800). The HPSR is included in **Appendix E.**

Key objectives of the ASR included establishing the Area of Direct Impact (ADI) and the Area of Indirect Impact (AII), collectively referred to as the Area of Potential Effect (APE), and identifying prehistoric, ethnohistoric, and/or historic-period archaeological resources within or immediately adjacent to the APE.

Archival data and archaeological surveys conducted in October 2019 and March 2020 identified two built environment resources within the APE: a segment of the Old Placerville Road (aka Pioneer Trail) and a segment of Old Highway 89 (NCE 2020c). The segment of Old Highway 89 was an isolated and abandoned segment of road determined exempt from evaluation per Attachment 4 of the Section 106 Programmatic Agreement (Section 106 PA) under Property Type 1 (NCE 2020c). The segment of Old Placerville Road, however, has been determined to be eligible for the National Register of Historic Places. No other historic or archaeological resources were identified within the APE.

The County established a 13.9-acre APE for the Project. In consultation with Caltrans, it was determined the ADI and AII have coincident boundaries encompassed within the APE. At the time of cultural and historic screening efforts, and APE establishment for the project, a larger boundary was determined for the project that included an area subsequently determined to be an Environmentally Sensitive Area (ESA). The ESA was removed from the project area during project development.

4.5.2 Regulatory Setting

Federal

The National Historic Preservation Act (NHPA; 1966) defined the role and responsibilities of the federal government in historic preservation and established the National Register of Historic Places (NRHP). The NHPA directs agencies to identify and manage historic properties under their control, to undertake actions

that would advance the Act's provisions and avoid actions contrary to its purposes, to consult with others while carrying out historic preservation activities, and to consider the effects of their actions on historic properties.

State

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The CRHR helps government agencies identify and evaluate California's historical resources and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC §5024.1(a)). Any resource listed in, or eligible for listing in, the CRHR must be considered during the CEQA process.

Caltrans

Projects on the Caltrans SHS must comply with federal and State environmental laws and regulations designed to protect cultural resources significant in American archaeology, architecture, history, culture, and engineering. To meet legal requirements for cultural resources management, Caltrans personnel must follow the guidelines outlined in Volume 2 of the SER (Caltrans 2015).

Local

TRPA Code (TRPA 2020a) Section 67.3 – *Resource Protection*, outlines requirements for managing the accidental discovery of resources during construction (Subsection 67.3.1), and requirements for protection of known resources.

4.5.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines § 15064.5?	Less Than Significant Impact with Mitigation Incorporated
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5?	Less Than Significant Impact with Mitigation Incorporated
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less Than Significant Impact with Mitigation Incorporated

4.5.4 Answers to CEQA Checklist Questions

a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines § 15064.5?

Less Than Significant Impact with Mitigation Incorporated

As discussed in the Environmental Setting, a segment of the Old Placerville Road was identified as a historic resource located within the original project APE and is considered eligible for listing in the National Register of Historic Places. Due to the proximity of project activities to this resource, it was recommended that the site be protected from any potential project effects by the establishment and enforcement of an Environmentally Sensitive Area as provided for in accordance with Stipulation X.B.1.a and Attachment 5 of 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*.

The ESA boundary has been depicted on the project plans as defined in the contract Standard Special Provisions 14-1.02. ESA barriers (high visibility orange fencing) must be erected prior to construction activities as specified in the ESA Action Plan (NCE 2020d; **Appendix F**) to avoid project construction activities from encroaching into this boundary. No project-related activities including but limited to paving, utility relocation, maintenance, staging, equipment parking, streetlight installation, replanting, or other ground disturbance shall take place within the ESA. The project has been specifically designed to avoid the ESA to prevent project construction activities and features from impacting the resource.

Implementing **Mitigation Measure CR-1** would reduce potential impacts on the Old Placerville Road resource to less than significant.

- **Mitigation Measure CR-1**: The County shall implement the ESA Action Plan, and ensure the ESA is delineated on Contractor's project plans and delineated in the field by use of high visibility orange fencing to avoid project impacts from encroaching into this boundary.

Finding: Implementation of the ESA Action Plan required by MM CR-1 would protect the resource from potential adverse construction or operational impacts.

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

Less Than Significant Impact with Mitigation Incorporated

The proposed project has the potential for direct impacts from general construction activities and the use of temporary staging areas. The project will involve

excavation of earth with heavy equipment, stockpiling of material, and heavy equipment driving over the ground. Road grading and the construction of the multi-use path will minimally impact vegetation and potential cultural resources as the top two feet of surface soils were previously disturbed by erosion control projects, utility installation, logging, and landscaping projects. Construction will occur within and immediately adjacent to the ROW where deep excavation for lighting, storm drain facilities, and utilities will occur within previously undisturbed ground with a higher potential to impact potential prehistoric and historic cultural resources.

However, it is highly probable that maintenance of the US 50 and neighborhood ROWs, installation of advanced utilities, and erosion control ditches throughout the APE have substantially disturbed and modified the landscape. Excavation of storm drain facilities and utilities will occur on the north side of Pioneer Trail away from the ESA; excavation of new streetlight foundations has the highest potential to disturb the recommended eligible site. The ESA Action Plan specified in **Mitigation Measure CR-1** was established to not only protect the historic road segment discussed in a), above, but to provide the construction crew with training regarding inadvertent cultural resource discoveries. Implementation of **Mitigation Measure CR-1** would reduce the potential impact to less than significant.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact with Mitigation Incorporated

Based on the known historic uses of the area, and the prior ground disturbance within the APE, and the fact that no prehistoric period cultural resources were identified in the APE, human remains are not expected to be discovered during construction activities. However, the possibility of encountering human remains during earth disturbance still exists, and could result in significant impact if not mitigated; therefore, the County requires projects to include Mitigation Measure CR-2, which requires the following provisions should human remains be encountered during construction:

- **Mitigation Measure CR-2**: Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If the human remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

4.5.1 TRPA Checklist – Archaeological/Historical

TRPA Questions	Answers	Discussion
20a) Would the proposed project result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object, or building?	No	Refer to the responses to CEQA questions a) through c) above. The project has established an ESA boundary to prevent project impacts to an identified archaeological site/historic resource. No other significant sites or resources with potential to be impacted by the project were identified.
20b) Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records?	No	Refer to discussions for CEQA questions a) through c) above. Project screening efforts identified archaeological resources associated with the project; however, the segment of Old Highway 89 is an 'exempted and isolated road resource' pursuant to Attachment 4 of Section 106 PA, and the resource eligible for listing in NRHP (Old Placerville Road) will be protected by establishment of an ESA and has been removed from the project boundary.
20c) Is the property associated with any historically significant events and/or sites or persons?	No	Native American correspondence was initiated by NCE on August 27, 2019. The letter requested a record search of their Sacred Lands File (SLF) and a contact list for regional tribes that may have knowledge of cultural or tribal resources in the vicinity of the APE. A response was received from the NAHC on September 19, 2019, which indicated negative SLF results within the APE. Additionally, consultation with the Washoe Tribe indicate there are no known cultural resources associated with the project area.

TRPA Questions	Answers	Discussion
20d) Does the proposed project have the potential to cause a physical change which would affect unique ethnic cultural values?	No	The project would be constructed in an existing developed transportation corridor. Results of Native American consultation efforts indicate there are no unique ethnic cultural values associated with the project area (NCE 2020c).
20e) Would the proposed project restrict historic or pre-historic religious or sacred uses within the potential impact area?	No	The project would be constructed in an existing transportation corridor; implementation of the project would have no effect on pre-historic, historic, or sacred uses of the project area as none were identified during screening efforts and during Native American consultation.

4.6 ENERGY

4.6.1 Environmental Setting

Within the project area, existing energy use includes traffic lights and street lighting at the US 50/Pioneer Trail intersection.

The County relies on conserving energy sources, waste reduction practices, sustainable buildings, and innovative land use planning to reduce energy impacts.

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

- Decreasing overall per capita energy consumption,
- Decreasing reliance on natural gas and oil, and
- Increasing reliance on renewable energy resources.

4.6.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less Than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

4.6.3 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

The project would not result in a significant new need or use of energy. The project proposes to remove and replace the existing intersection, traffic signals, and pedestrian lighting in conformance with Caltrans and roundabout lighting standards. At a minimum, lighting would be provided at the vehicle-vehicle conflict points at the intersection, vehicle-pedestrian conflict points at the crosswalks, and at the nose of each splitter island. This would be energy efficient lighting consistent with current code.

Energy for the project would also be required during construction but would not require additional capacity on a local or regional scale. As discussed in Section 3.5,

the project would implement the Basic Construction Emission Control Practices and the measures listed in the Guidance for Construction GHG Emissions Reductions developed by the SMAQMD (2019), which includes use of BMPs to reduce use of fossil fuels and increase energy efficiency of construction vehicles.

Once operational, the project has potential to reduce fuel consumption by implementing a roundabout circulation improvement that would reduce vehicle idling and reduce fuel consumption.

Because use of energy would be consistent with current code for efficiency, and the project has the potential to reduce overall fuel use once constructed and would comply with construction efficiency requirements, the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The impact would be less than significant.

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

No Impact

The project proposes transportation improvements that reduce fuel consumption by reducing idling time and replace automotive trips with pedestrian and bicycle trips, consistent with local and state goals for energy efficiency, as identified within the Tahoe Metropolitan Planning Organization (TMPO) Regional Transportation Plan/Sustainable Communities Strategy (TRPA and TMPO 2012).

The removal and replacement of the existing intersection and pedestrian lighting would be in conformance with Caltrans and roundabout lighting standards. Energy efficiencies, including the removal of existing traffic signals, would offset minor new energy use, as discussed above. Implementing BMPs to reduce fossil fuel use by construction vehicles and use of energy efficient equipment during construction would also be consistent with these goals and policies.

4.6.1 TRPA Checklist

TRPA Questions – Natural Resources	Answers	Discussion
9a) Would the proposed project result in substantial increase in the rate of use of any natural resources?	No	Refer to CEQA items a) and b) above. The project includes transportation improvements consistent with local and state goals to reduce fuel consumption by providing options to switch from automobile use to pedestrian or bicycle use.
9b) Would the proposed project substantial depletion of any non-renewable natural resource?	No	Refer to CEQA items a) and b) above, and TRPA 9a. The project would not result in substantial depletion of any non-renewable energy resources.

TRPA Questions – Energy	Answers	Discussion
15a) Would the proposed project result in the use of substantial amounts of fuel or energy?	No	Refer to CEQA a) above. Replacement of old streetlamps and installation of new lighting would be consistent with local and state standards for energy efficiency and would not result in a substantial increase in energy use. The project is anticipated to result in a decrease of fuel consumption associated with automobile use.
15b) Would the proposed project result in substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	No	Refer to responses above. The project is required to implement energy and fuel-efficient methods during construction, and new lighting impacts are anticipated to be less than significant. Therefore, the project would not require a substantial increase in demand on existing sources or require development of new sources of energy.

4.7 GEOLOGY AND SOILS

4.7.1 Environmental Setting

The project is located primarily within previously disturbed road ROW and roadway within a county unincorporated area, in the Lake Tahoe basin of the Sierra Nevada Mountain Range.

The approximate elevation range of the project area is between 6,330 to 6,345 feet above mean sea level. Project area topography consists of relatively flat terrain that increases in slope going south on US 50/SR 89.

Regional Geologic Setting

The project area is at the margin of two geologic regions: The Sierra Nevada and Basin and Range Geomorphic Regions. Characteristic of the Sierra Nevada Region, the geologic setting of the project area is mountainous developed primarily on granitic bedrock of the Sierra Batholith (Saucedo 2005), which represents a series of igneous intrusions that occurred during the Paleozoic Era around 575 to 270 million years ago. The Sierra Nevada region has been uplifted as a tectonic block. The tectonic conditions and geologic structure of the Lake Tahoe Basin are characteristic of the Basin and Range Region. The Lake Tahoe Basin is a fault-bounded valley formed by the extensional tectonic regime that defines the Basin and Range.

The project area is composed of two geologic map units (Saucedo 2005). Pliocene to Holocene (Q) and Pleistocene glacial drift (Qg). Pleistocene glaciation played a major role in shaping the landscape visible today. Four glacial episodes were evident, which is common in most portions of the basin. The most easily recognized features are moraines that formed along the edges of glacial lobes as they advanced away from the mountains.

Seismicity and Faulting

The Lake Tahoe Basin is seismically active with many known faults including the North Tahoe Fault, West Tahoe Fault, and the East Tahoe Fault (Saucedo, 2005). Active faults are those that have moved during the past 11,000 years, and generally only active faults are considered in evaluating seismic risk for building construction. The most active segment of this fault system in the Tahoe area is located at the base of the eastern side of the mountains about 9 miles east of the project area; no known faults are mapped through or in the immediate vicinity of the proposed roadway alignment (Corestone 2019).

The mapped faults in the general area of the project site are shown on **Figure 10** below. The nearest mapped fault is a Quaternary age (less than 1.6 million years old) fault segment associated with the Tahoe Valley fault zone and is mapped about

1.6 miles northeast of the project site. The nearest Holocene age fault is part of the West Tahoe – Dollar Point fault zone and is about 2 miles west of the site. This fault zone is also identified as an Alquist-Priolo Earthquake Fault Zone by the California Geological Society.

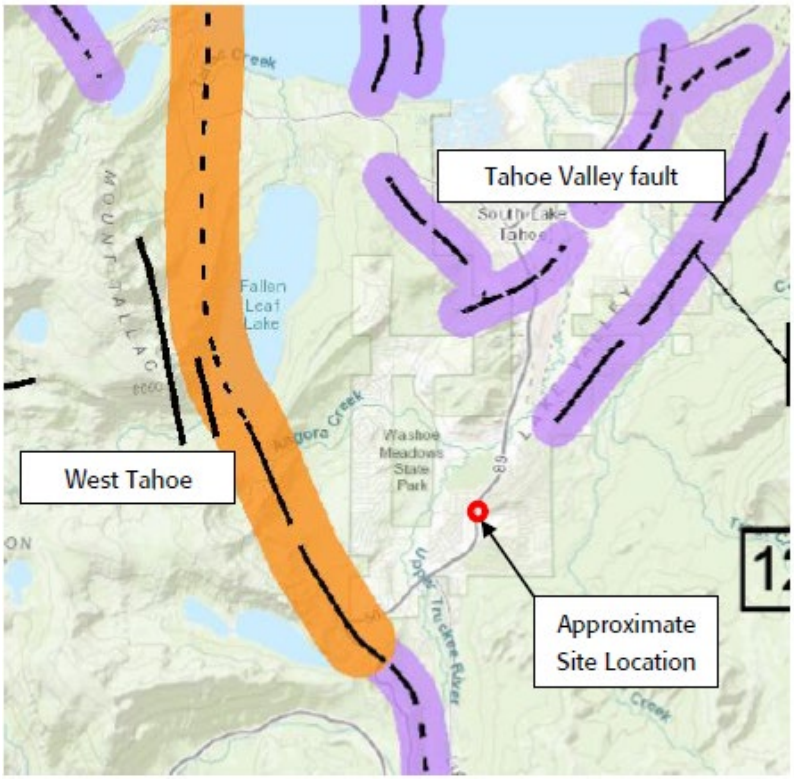


Figure 10. Fault Activity Map

Source: Corestone Engineering 2019.

Liquefaction

Liquefaction occurs in water-saturated sediments that are shaken by moderate to large earthquakes. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, and fine-grained sand deposits. The site is overlain by dense soils underlain by bedrock at shallow depths, and groundwater is greater than 11.5 feet deep. Based on the subsurface materials characteristics, the potential for soil liquefaction at the project site is negligible (Corestone 2019).

Groundwater

Geotechnical borings and pavement cores were collected for the project in October 2019. Groundwater was not encountered during collection of the borings which extended to 11.5 feet below ground surface.

The full Geotechnical Report is included as **Appendix G**.

Soils

The soils profile throughout the project area typically consists of silty sand, silty, clayey sand, and poorly graded sand soils with low to moderate amounts of gravel through the maximum depth of exploration, 11.5 feet beneath the existing grades. The site soils are brown to light reddish brown, moist to very moist, loose to dense, and contain about 10 to 35 percent non-plastic to low plasticity fines and 0 to 15 percent subrounded to rounded gravel. A cobble was encountered in boring B-08 near the ground surface (Corestone 2019).

Land Capability and Coverage

TRPA established a land capability system based upon the Bailey Land Classification System methodology (Bailey 1974). Land capability classification delineates the amount of impermeable development coverage (e.g., base allowable land coverage) that may exist within an LCD. LCDs 1 to 3 are more sensitive to development, and LCDs 4-7 are more suitable for development (TRPA 2016).

LCD 1 is the most environmentally fragile (LCD 1b, also referred to as SEZ) is assigned whenever land is influenced by a stream or high groundwater. As presented in Section 4.4 – Biological Resources, the northern portion of the project area is mapped as SEZ (LCD 1B) based on TRPA's 'Sinclair' data layer. The rest of the project area is mapped as LCD 5.

Existing impermeable surface coverage within the project area includes a segment of paved shared-use path and paved ROWs for Pioneer Trail and US 50. Table 4 in Section 4.7.4 below (TRPA Checklist) presents existing versus proposed coverage associated with the project.

4.7.2 CEQA Checklist Summary

Would the project:

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

4.7.3 Answers to CEQA Checklist Questions

a) Would the project directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for

the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact

As discussed in the Environmental Setting, the project area does not lie within an Alquist-Priolo Earthquake Fault Zone and no unmapped faults were suggested within the site during the geotechnical investigation. Therefore, no additional fault investigation or mitigation is considered necessary for the proposed project (Corestone 2019).

ii. Strong seismic ground shaking?

No Impact

The project proposes to construct transportation improvements in an existing transportation corridor. Because the site does not lie within an Earthquake Fault Zone and no unmapped faults were suggested within the site during the geotechnical investigation, strong seismic ground shaking is not anticipated to occur at the project site.

iii. Seismic-related ground failure, including liquefaction?

No Impact

Liquefaction can occur when wet or saturated cohesionless soils temporarily lose strength due to the buildup of excess water pressure during events such as earthquakes. As discussed in the Environmental Setting, based on the subsurface materials characteristics, the potential for soil liquefaction at the project site is negligible (Corestone 2019). The proposed roadway improvements would not be subject to liquefaction and therefore would not risk transportation safety due to seismic-related ground failure.

iv. Landslides?

No Impact

Areas with potential to be impacted by earthquake-induced landslides are typically on or below steep slopes, or adjacent to existing landslide deposits. The project area has relatively flat topography and no known historic landslide deposits, thus the probability of the project area being affected by landslide movement would be very low to none. The proposed roadway improvements would not create slopes or directly or indirectly cause potential substantial adverse effects related to landslides in the vicinity of the project.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact

During construction, the project may have potential to cause the loss of topsoil or cause erosion during earth moving and clearing activities. The project would implement erosion and sediment BMPs as outlined in Section 3.5 that would prevent significant soil loss or erosion during construction. Implementation of the project SWPPP would further reduce the potential for erosion and topsoil loss during construction to less than significant.

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

No Impact

Results of the geotechnical investigation indicate the soils encountered in the project area are exclusively sandy soils with adequate subgrade strength characteristics; these soils should cause minimal geotechnical-related concerns for the structural improvements of the proposed project (Corestone 2019).

Additionally, the project is proposing to construct a roundabout in an area within existing ROWs and public streets. These areas have already been determined through past construction to be suitable for transportation improvements and are not located in areas with unstable soils. The proposed improvements are not sensitive to landslide, lateral spreading, subsidence, liquefaction, or collapse; therefore, there would be no impact.

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

No Impact

The project area does not contain expansive soils as defined in Table 18-1-B of the Uniform Building Code (1994). Additionally, results of the geotechnical investigation indicate the soils encountered in the project area are exclusively sandy soils with adequate subgrade strength characteristics that result in minimal geotechnical-related concerns for the structural improvements of the proposed project. Therefore, there would be no impact related to expansive soils.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

The project does not propose the use of septic tanks and would not require use of alternative wastewater disposal services; therefore, there would be no impact from these systems.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

The Northwest Information Center records search revealed there are no previously paleontological resources identified within the project area. No unique geological resources were identified during review of geologic resources within the project boundary, and no fossiliferous geologic structures underly the project area. Therefore, the project would not directly or indirectly destroy any unique paleontological resources or unique geologic feature.

4.7.4 TRPA Checklist – Land

TRPA Questions	Answers	Discussion
1a) Would the proposed project result in compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)?	No, with Mitigation	The project proposes new land coverage and disturbance within LCD 1B (SEZ) and LCD 5, required to implement the roundabout design and incorporate the existing shared-use path to the west of the new roundabout footprint. Both TRPA and Lahontan prohibit new SEZ disturbance except for limited uses, such as public service facilities, that can demonstrate compliance with restrictive findings. The project is estimated to result in approximately 26,000 square feet of new land coverage and 26,000 square feet of new disturbance within the SEZ (LCD 1B), as outlined below in **Mitigation Measure GEO-1** below.
1b) Would the proposed project result in a change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions?	No	The project does not propose to change the topography or ground surface within the project area.

TRPA Questions	Answers	Discussion
1c) Would the proposed project result in unstable soil conditions during or after completion of the proposal?	No	Refer to discussion of CEQA item c). The project is proposing to construct a roundabout, shared-use path, restripe streets in primarily disturbed ROW and adjacent compatible lands. During construction, there is potential for increased runoff and wind and soil erosion from disturbed soils within the project area. However, implementation of the project SWPPP and compliance with TRPA BMP requirements would ensure the project is stabilized during construction from significant impact. Disturbed areas would receive final stabilization such as revegetation of disturbed slopes, paved travel-ways, improved site drainage, and permanent water quality BMP features; therefore, the project would not result in unstable soil conditions during or after completion of the project.

TRPA Questions	Answers	Discussion
1d) Would the proposed project result in changes in the undisturbed soil or native geologic substructures or grading more than 5 feet?	No	Preliminary geotechnical investigation reveals no severe soil or shallow groundwater constraints within the project area (Corestone 2019). Soil borings indicate a depth to groundwater more than 12 feet below ground surface (bgs). Construction of the project would require excavations of up to 13 feet for relocation of utilities, construction of storm drainpipes, and installation of lighting. TRPA Code Subsection 33.3.6 requires projects that propose excavations more than 5 feet prepare a Soils and Hydrology Report application for TRPA approval. The report must outline groundwater protection procedures in the event of interception. Compliance with TRPA Code reduces the potential impact of excavations to less than significant on groundwater resources.
1e) Would the proposed project result in the continuation of or increase in wind or water erosion of soils, either on or off the site?	No	Refer to discussion of CEQA item b). The project would implement erosion and sediment BMPs as outlined in Section 4.7 that would prevent significant soil loss or erosion during construction.
1f) Changes in deposition or erosion of beach sand, or changes in siltation, deposition, or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake?	No	There are no rivers or lakes in the project area. Stormwater drainages located in uplands are present within the project area. There are no project features that impact sand or littoral processes; there would be no impact.

TRPA Questions	Answers	Discussion
1g) Would the proposed project result in exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards?	No	Refer to discussion of CEQA items a) and c). The project vicinity has relatively level topography, and soils within the project area are primarily composed of alluvium derived from igneous intrusive rock, like granodiorite, and igneous extrusive rock, mostly andesitic lahar not susceptible to expansion or liquefaction. There are no faults crossing the project area, and the proposed roadway improvements would not increase the exposure of people or property to geologic hazards.

TRPA and Lahontan Coverage Findings

The project proposes new land coverage and disturbance of SEZ (LCD 1b) for construction of the roundabout and shared-use trail. The increased land coverage is approximately 26,000 square feet/0.6 acres and the new disturbance (e.g., pervious fill areas) is also approximately 26,000 square feet (**Table 5**). Both TRPA and Lahontan prohibit new SEZ disturbance except for limited uses, such as public service facilities, that can demonstrate compliance with restrictive findings. The following discussion demonstrates that the project will comply with the applicable findings.

Table 5. LCD 1B (SEZ) Coverage and Disturbance Calculations

LCD 1B (SEZ)	Existing (square feet)	Proposed square feet)	Total Increase (square feet)	Total Increase (acres)
SEZ Coverage – Road	37,390	60,222	22,832	0.52
SEZ Coverage – Shared-Use Path	3,121	6,137	3,016	0.07
Coverage Totals	40,511	66,359	**25,848**	**0.6**
Disturbance Totals	6,946	32,852	**25,906**	**0.6**
Total SEZ Impact			**51,754**	**1.2**

Table Notes:
LCD = land capability district
SEZ = stream environment zone

TRPA Findings

TRPA Code Chapter 30 contains the criteria pertinent to land coverage within LCD 1b.

In 2013, TRPA adopted a revised Regional Plan and Code of Ordinances (TRPA 2013) altering the review and offsetting restoration required for certain shared-use trails in SEZ. TRPA Code Section 30.5.2.C allows exemption from general SEZ disturbance prohibitions for construction of public service facilities within SEZ which meet certain criteria:

TRPA Code Section 30.5.2.C – Public Service

Land coverage and disturbance for public service facilities may be permitted in Land Capability District 1b (Stream Environment Zone) if TRPA finds that:

1. The project is necessary for public health, safety, or environmental protection.

As discussed in the Project Description, the purpose of the project is to improve safety for both motorized and non-motorized transportation uses. The project results in environmental benefits including reduction of emissions and providing for improved water quality treatment.

2. There is no reasonable alternative, including a bridge span or relocation, that avoids or reduces the extent of encroachment in the stream environment zone:

   The project is required in its location as the project proposes transportation improvements to an existing transportation corridor/ROW, located within mapped SEZ. The project requires encroachment into the SEZ to accommodate the roundabout footprint and retain a shared-use trail in this location for public use. Alignment of the roundabout was chosen based on being able to construct most of the transportation improvements within already disturbed roadway ROW.

3. The impacts of the land coverage and disturbance are fully mitigated in the manner set forth in subparagraph 30.5.1.B.5, with the exception that the restoration requirement in such subsection shall apply exclusively to stream environment zone lands and shall include coverage and disturbance within the permitted Bailey coefficients.

   Subparagraph 30.5.1.B.5: The impacts of the coverage and disturbance are fully mitigated through means including, but not limited to, the following:

   a. Application of best management practices

      The project incorporates permanent best management design features to slow and capture runoff to allow for infiltration of surface runoff to groundwater. These features include a new infiltration basin to the north east of the roundabout and curb and gutters throughout.

      Additionally, as discussed in Section 3.6 – Construction Controls, the project will implement a contingency groundwater Dewatering Plan in addition to standard required BMPs as a part of the SWPPP to include measures to capture, store, and appropriately discharge groundwater should groundwater (although unlikely) be encountered during construction.

   b. Restoration, in accordance with subsection 30.5.3, of land in Land Capability Districts 1a, 1c, 2, 3, and 1b (Stream Environment Zone) is required in the amount of 1.5 times the area of land in such districts covered or disturbed for the project beyond that permitted by the coefficients in Table 30.4.1-1.

As reported above in **Table 5**, total new coverage and disturbance resulting from the project is estimated to be 1.2 acres (approximately 52,000 square feet).

Applying the required SEZ restoration amount of 1.5 times the project disturbance amount, the project must restore a total of 78,000 square feet (or approximately 1.8 acres) of SEZ. One half (39,000 square feet) of the SEZ restoration credits must come from hard land coverage.

To offset the new disturbance impacts for this project, at a 1.5:1 ratio, the County proposes to utilize banked SEZ restoration credits from a previously restored and banked EIP project, the 2010 Angora Creek Stream Environment Zone Restoration Project (El Dorado County 2016) (refer to **Mitigation Measure GEO-1** below). As part of this project, the County restored/enhanced 6.85 acres (298,392 square feet) of SEZ and/or wetlands within and adjacent to Angora Creek. Up to 257,396 square feet (5.91 acres) of restoration is still banked and available from implementation of this project. The County may have other banked EIP projects that could be applied as well.

As described below, the project must additionally meet the restrictive findings of the Lahontan Basin Plan to disturb SEZ.

Lahontan RWQCB Findings

The Lahontan RWQCB adopted Basin Plan includes prohibitions for discharge in SEZ (Prohibition 5.2) as well as possible exceptions to the prohibition if certain circumstances are met. The Regional Board may grant exemptions from Prohibition 5.2 under the following circumstances:

(3) For public service facilities if all the following findings can be made:

a) The project is necessary for public health, safety, or the environment

Refer to response for TRPA findings #1 above.

b) There is no reasonable alternative, including spans, that avoids or reduces the extent of encroachment

Refer to response to TRPA findings #2 above. The existing intersection, where transportation and safety improvements are proposed, is mapped within SEZ. Total grading extent and extent of project disturbance has been minimized to what is necessary to implement the project.

c) and (d) The impacts are fully mitigated and SEZ is restored at an amount 1.5 times the area of SEZ developed or disturbed by the project

The project must mitigate at a 1.5:1 ratio and proposes to do so by use of existing mitigation credits banked from the County's 2010 *Angora Creek Stream Environment Zone Restoration Project* and by using land coverage restoration credits banked from past County EIP projects:

- **Mitigation Measure GEO-1: SEZ Restoration Credit for New SEZ Coverage and Disturbance**. Compliance with TRPA Code Regional Plan

Update and Lahontan Basin Plan requires new disturbance in SEZ meeting certain criteria to be offset with SEZ restoration at a 1:1.5 ratio. To mitigate the impact to SEZ, the County will utilize SEZ restoration credits from projects previously restored and banked. These projects, or others eligible at the time of final project approvals, include:

- 2010 Angora Creek Stream Environment Zone Restoration Project near View Circle in El Dorado County restored/enhanced 6.85 acres (298,392 square feet) of SEZ and/or wetlands within and adjacent to Angora Creek – up to 257,396 square feet (5.91 acres) of restoration is still banked and available from implementation of this project.
- Various County EIP project banked SEZ coverage credits.

4.8 GREENHOUSE GAS EMISSIONS

The term greenhouse gas is used to describe atmospheric gases that absorb solar radiation and subsequently emit radiation in the thermal infrared region of the energy spectrum, trapping heat in the Earth's atmosphere. Greenhouse gases of concern include carbon dioxide, methane, nitrous oxide, and fluorinated gases. Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases have a broader, global impact.

Greenhouse gases differ by the amount of heat each traps in the atmosphere, known as global warming potential. Carbon dioxide is the most significant greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of carbon dioxide is assigned a value of 1, and the warming potential of other gases is assessed as multiples of carbon dioxide. Generally, estimates of all greenhouse gases are summed to obtain total emissions for a project or given period, usually expressed in metric tons or million metric tons CO_2e.

4.8.1 Environmental Setting

California's GHG reduction requirements aim to reduce VMT to improve air quality by reducing GHG emissions from automobiles (TRPA 2017). GHG planning guidance for the Lake Tahoe Basin is outlined in the TMPO Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) which anticipates reducing GHG emissions by focusing on regional land use and transportation policies. Strategies in the 2017 RTP/SCS include transit programs (free-to-the-user transit, transit priority access, transit schedule coordination, etc.), parking management, and mobility/circulation improvements such as this project.

Emissions Modeling

A recent GHG emissions analysis was conducted for the Kings Beach Western Approach Project, a project similar in scope and size to the proposed project, to determine the impacts to operational GHG emissions associated with replacing a signalized intersection with a roundabout improvement. Results of the analysis indicate substantially lower operational GHG emissions are associated with implementation of a roundabout design as opposed to a signalized intersection, primarily due to a reduction in vehicle idling[1].

4.8.2 Regulatory Setting

The State of California has taken several legislative steps including Assembly Bills (AB) and Executive Orders to reduce increases in GHG emissions. CARB is the lead agency in the development of reduction strategies for greenhouse gases in California (CARB 2017). California's GHG reduction requirements aim to reduce vehicle miles traveled, thereby improving air quality by reducing GHG emissions from automobiles.

In September 2019, the EPA, and the National Highway Traffic Safety Administration (NHTSA) issued the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (SAFE Part One)* that revoked California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California. In April 2020, the federal agencies issued the *SAFE Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (Final SAFE Rule)* that relaxed federal GHG emissions and fuel economy standards. Staff at CARB have estimated emissions impacts from the *SAFE* Vehicles Rules and actions adopted by the EPA and NHTSA in late 2019 and early 2020.

Based on these federal actions in the past year to undermine motor vehicle GHG standards and California's requirements for zero-emission vehicles have necessitated changes to California's modeling tools for estimating on-road vehicle emissions (CARB 2020).

On November 20, 2019, CARB released the EMFAC off-model adjustment factors to account for SAFE Part One (CARB 2020). These adjustment factors were only for criteria pollutants, and the EPA considered them to be acceptable for use in transportation conformity determinations in California. This directive specifically provides the off-model adjustment factors that can be used to adjust tailpipe carbon dioxide (CO2) emissions output from the EMFAC model (EMFAC2014 and EMFAC2017) to account for the impacts of both SAFE Part One and the Final SAFE

[1] Placer County. 2020. *Initial Study/Mitigated Negative Declaration/Initial Environmental Checklist for the Kings Beach Western Approach Project*.

Rule. These adjustment factors have been incorporated into the operational GHG analysis conducted by GHD (GHD 2021).

Local

GHG planning guidance for the Lake Tahoe Basin is outlined in the 2017 RTP/SCS, which anticipates reducing GHG emissions by focusing on regional land use and transportation policies. Strategies in the 2017 RTP/SCS include transit programs (free-to-the-user transit, transit priority access, transit schedule coordination, etc.), parking management, and mobility improvements such as this project (TRPA 2017).

The El Dorado County AQMD is the primary agency responsible for air quality regulation in the LTAB. As part of that role, the El Dorado County AQMD has prepared a CEQA Guide to Air Quality Assessment. Currently, El Dorado County does not have any adopted quantitative federal or state guidelines for GHG emission impacts.

However, the El Dorado County AQMD was part of the committee of air districts in the Sacramento Region involved in the development of GHG Standard Levels of 1,100 metric tons CO_2e per year for the construction phase of projects or the operational phase of land use development projects, or 10,000 direct metric tons CO_2e per year from stationary source projects. If a project exceeds the Standard Level, the level of mitigation is based on demonstrating consistency with CARB's Climate Change Scoping Plan and the AB 32 goals for reducing GHG emissions, which is currently a 21.7 percent reduction from 2020 "no action taken" emissions (SMAQMD 2019).

4.8.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

4.8.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

Construction Emissions Screening

The project would result in short-term, temporary increases in GHG emissions during construction due to equipment and vehicle use at the site, for the period of 120 days. During the construction period heavy equipment, such as excavators and haul trucks, and worker commute would generate GHGs.

As discussed above, the Standard Levels for construction related GHG emissions is 1,100 metric tons of CO_2e per year.

Construction emissions of GHG were estimated using the RCEM model, as presented in Section 4.3 – Air Quality. Based on a 120 day construction estimate, the project is anticipated to emit a total of 211 metric tons of CO_2e over the life of the project, which is well below the significance threshold. The calculation spreadsheet is included as **Appendix B**.

As presented in Section 3.5, the County would implement the Basic Construction Emission Control Practices and the measures listed in the Guidance for Construction GHG Emissions Reductions developed by the SMAQMD (2019), which includes measures to improve fuel efficiency, minimize idling, limit emissions, use green energy sources, and recycling of materials.

Operational Emissions

As presented in **Table** 4 (Section 4.3 – Air Quality), operational emissions modeling conducted by GHD indicates the project would result in reductions of all pollutants including carbon monoxide (CO), carbon dioxide (CO_2) and methane (CH_4) as opposed to the 'no-build' scenario (**Appendix B**; GHD 2021). Therefore, the project is anticipated to have a beneficial impact on GHG emissions.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact

As presented above in the Environmental Setting and CEQA item a), the project would have a less than significant contribution to GHG emissions during construction and would result in an overall reduction of GHGs once operational. Therefore, once operational, the project would help attain the State's goals defined in AB 32.

4.9 HAZARDS AND HAZARDOUS MATERIALS

4.9.1 Environmental Setting

A search of the project site on the State Water Resources Control Board (SWRCB) GeoTracker website and the Department of Toxic Substances Control (DTSC) EnviroStor website was conducted. The search revealed that most hazardous waste sites in the region (pursuant to Government Code 65962.5) are located south of the

project site, in the city of Meyers. No sites in the project vicinity were identified on EnviroStor (DTSC 2020). The SWRCB GeoTracker website revealed a leaking underground storage tank (LUST) site to the east of US 50. Clean up for this location was completed in 2013 and the site's status is 'case closed' (SWRCB 2020).

The California Hazardous Material Incident Report System list identifies one site within the project area related to a sewage release in 2010 that was contained and cleaned up (Caltrans 2020). A review of the LUST list indicates that there are four LUST facilities within approximately 0.5 miles of the project site with the potential for environmental concerns from these facilities being moderate.

A Phase I Initial Site Assessment (ISA) and preliminary site investigation for aerially deposited lead (ADL) was prepared by NCE to identify, to the extent feasible, Recognized Environmental Conditions resulting from the improper use, manufacture, storage, and/or disposal of hazardous or toxic substances at or in the vicinity of the project area that may be encountered during construction and/or need to be considered as part of the acquisition of ROW. The preliminary site investigation for ADL included collection of soil and groundwater samples within the proposed excavation areas, and the collection of soil samples within unpaved areas of the ROW. Findings of the investigations are summarized below.

Groundwater

There were no Recognized Environmental Conditions identified during review of the project area, historical topographic maps, historical aerials, or other historical record reports related to the project area. Impacts to soil and groundwater from total petroleum hydrocarbons in the vicinity of several facilities near (but outside of) the southern perimeter of the project area were identified. Based on the nature of the releases at these facilities and their proximity and upgradient locations relative to the project area, the potential for environmental concerns from these facilities to have impacted the project area is low. Based on the current design, there are no excavations planned within 500 feet of the nearest facility that could have fuel impacted soil and/or groundwater, therefore encountering impacts due to their operations is unlikely.

ADL

Results of the preliminary ADL investigation indicate aerially deposited lead is present within the project area (NCE 2020e). Three of the 88 samples collected (two surface and one sample collected from 1.5-feet below ground surface) exceeded the screening value for unrestricted use (80 milligrams per kilogram [mg/kg]); however, no sample results exceeded the screening criteria for a commercial/industrial setting (320 mg/kg).

Additionally, the exposure point concentration (EPC) for all samples collected is below human health screening criteria for unrestricted use (80 mg/kg) (NCE 2020e). EPCs are intended to be representative of soil within the project area.

The Phase I ISA and Preliminary Site Assessment for ADL report is included in **Appendix H**.

4.9.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact
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 with Mitigation Incorporated
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
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

4.9.3 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

The project's use of hazardous materials is limited to fuels and other maintenance-related chemicals to run equipment machinery. New concrete and asphalt materials

would be used to construct the new roundabout and old asphalt would be disposed of as construction waste or used as structural fill if allowable.

Transport and use of hazardous materials are anticipated to be minimal. The use, storage, and management of fuels and other vehicle-related chemicals as well as construction materials would be managed according to the onsite SWPPP. For example, the SWPPP requires that equipment fueling and maintenance, if performed at the job site, must be performed in a designated area utilizing secondary containment with a spill kit nearby. Rinsing of concrete tools and chutes would also be performed according to the SWPPP, including utilizing concrete washouts and/or requiring that wastewater be kept within the concrete truck and hauled offsite for recycling.

Therefore, the project would have a less than significant impact on hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials.

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

Less Than Significant Impact with Mitigation Incorporated

As described above (checklist question a), hazardous materials used as part of the proposed project are expected to be minimal and the required onsite SWPPP will manage use of fuels and chemicals. Should a spill occur during construction, spill procedures in the SWPPP will be followed to prevent significant impacts.

Results of the Phase I ISA indicate that based on the nature of the releases at the facilities, where impacts to soil and groundwater from total petroleum hydrocarbons were identified, and their proximity and upgradient locations relative to the project area, the potential for environmental concerns from these facilities to have impacted the project area is low. Based on the current design, there are no excavations planned within 500 feet of the nearest facility that could have fuel impacted soil and/or groundwater, therefore encountering impacts due to their operations is unlikely (NCE 2020e).

As discussed in the Environmental Setting, ADL is known to exist within the project area; however, the calculated exposure point concentration for ADL data collected for the entire project area and for each depth profile were below applicable screening criteria for unrestricted use (NCE 2020e).

The DTSC entered into an enforceable agreement with Caltrans for the management of ADL contaminated soils that are excavated by Caltrans during highway improvement projects, titled Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement). The Agreement requires all ADL-contaminated soils with a lead concentration above unrestricted use (currently 80

mg/kg) to be properly managed by Caltrans. The management activities to which this Agreement generally applies are the stockpiling, disposal, tracking, transportation, and final placement of ADL-contaminated soils. The DTSC monitors compliance with the Agreement and tracks highway improvement projects that reuse ADL-contaminated soils (DTSC 2016).

The project is anticipated to qualify for "no coverage requirement" based on the Caltrans and DTSC Agreement Criteria (Table 1 of the Agreement as presented in the attached Phase I ISA/ADL [**Appendix H**]) as reported concentrations are below the Extractable Lead Concentration threshold. Similarly, if the project or portions of the project are not covered by the agreement, as the exposure point concentration for lead in soil for the site does not exceed the published health-based screening value for unrestricted use, excavated soils would not be considered hazardous waste, would not have a cover requirement, and thus would be less than significant (NCE 2020e).

However, for risk management purposes, it is recommended that excavated soils requiring off-haul be stockpiled and profiled prior to disposal at an appropriate waste disposal facility and should not be re-used onsite for any purpose. Because the project does not propose to reuse ADL-contaminated soils as part of the project, and significant impacts would not occur as the EPC for lead in soil for the site does not exceed the published health-based screening value for unrestricted use, construction of the project would not create a significant harm to the environment through release of hazardous materials.

However, exposure of construction workers to potentially contaminated soils needs to be considered during earth-moving activities. Lead enters the body through inhalation or ingestion of lead-containing materials and is not readily absorbed through the skin. The primary concern is exposure through ingestion of contaminated soil. Another concern is that shoes or clothing contaminated with lead-containing soils will enter vehicles, offices, or homes, and provide a source for lead contamination and exposure to others (Caltrans 2017c).

Therefore, the Contractor shall adopt the following work practices to minimize the potential for contamination and ingestion of lead-contaminated soils, and to prevent exposure to the public. The following work practices are based on Caltrans' Code of Safe Practices Manual (Caltrans 2017c):

- **Mitigation Measure HAZ-1: Develop Lead Compliance Plan**

  The Contractor shall develop and implement a Lead Compliance Plan (LCP). The LCP shall outline requirements mandated in 8 CCR §1532.1 Lead, to ensure the risks of potential worker exposure to inorganic lead through inhalation of airborne dust or ingestion lead from soils contaminated with ADL. Additional components of the LCP shall include:

- Prior to performing any excavation work at the locations containing material classified as hazardous, employees and subcontractors shall complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified.
- Educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling, containment, and disposal procedures.
- Hold regular meetings to discuss and reinforce contaminated soil handling, containment, and disposal procedures (incorporate into regular safety meetings and tailgates).

Finding: Implementation of HAZ-1 would protect construction workers against potentially significant risks of ADL.

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

No Impact

The nearest school is the Lake Tahoe Environmental Science Magnet, a public elementary school, located approximately 0.9 miles to the west. As discussed above, hazardous materials used as part of the proposed project are anticipated to be limited. Construction-related vehicles would produce routine emissions that would be temporary and less than significant. For a discussion on air quality, see Section 4.3.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact

EnviroStor is the DTSC's data management system for tracking cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further, also known as the Cortese List. As noted in the Environmental Setting, no sites in the project vicinity were identified on EnviroStor.

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

No Impact

The nearest airport, Lake Tahoe Airport, is located approximately 2.3 miles north of the project site. The project is not located within a comprehensive land use planning area, and the project does not involve habitable improvements that would be sensitive to airport operations.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact

The project proposes the construction of a roundabout and shared-use trail improvements that involve construction in roadways included in the County's emergency response plans. The roads would remain open throughout construction with some restrictions. As discussed under construction controls in the Project Description, a Caltrans project-level TMP would be implemented which includes strategies for public and motorist information, incident management, construction, demand management, and alternate routes. Emergency response and evacuation would be maintained throughout construction.

As part of the TMP, a Public Awareness Campaign (PAC) would be implemented to educate motorists, merchants, residents, and visitors about potential construction plans and schedule. Public awareness is expected to reduce the traffic demand in the construction zone by encouraging motorists to take alternate routes or to travel outside of closure hours. The PAC would inform the public about the construction project and how it could affect their travel through the project area. The PAC would be run through the County and Caltrans District 3 Public Information Officer (PIO). The PIO would ensure that project information is available on the Caltrans District 3 website and the County would provide the same updates on their website. The alternate route strategy of the TMP may include one detour during construction due to the temporary closure of the southbound left turn movement onto Pioneer Trail. This is a low volume movement with 35 to 70 vehicles during the peak weekend period. In the event of fire and use of a detour route is necessary, the proposed detour route (via a U-turn movement at the US 50 at SR 89 roundabout) would add approximately 5 minutes to this movement. Other closures would be of short duration on routes that do not add significant length to travel times for the public.

As part of the Caltrans approved TMP, the Contractor is required to weekly submit a traffic control plan for the following week, outlining which types of control would be used. The weekly traffic control plan would contain a detailed contingency plan, addressing equipment standby and emergency notification. During construction activities requiring closures and extended delays, the contractor must provide appropriate personnel to monitor activities and make decisions regarding activation of a contingency plan, if necessary.

Implementation of the required TMP would ensure temporary impacts to emergency access or evacuation remain less than significant during construction. Once constructed, the project would have a beneficial effect by improving circulation and safety within the existing intersection.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact

The project involves the implementation of a three-leg modern roundabout at an existing intersection that once constructed, would improve traffic flow and safety. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

4.9.1 TRPA Checklist

TRPA Questions – Risk of Upset	Answers	Discussion
10a) Would the proposed project involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions?	No	Refer to CEQA questions a) and b). Hazardous materials used as part of the proposed project are expected to be minimal and the required onsite SWPPP will manage use of fuels and chemicals. Should a spill occur during construction, spill procedures in the SWPPP will be followed to prevent significant impacts. Should ADL be encountered, **Mitigation Measure HAZ-1** ensures worker safety is protected through implementation of a Lead Compliance Plan.
10b) Would the proposed project involve possible interference with an emergency evacuation plan?	No	Refer to CEQA question f).

TRPA Questions – Human Health	Answers	Discussion
17a) Would the proposed project result in creation of any health hazard or potential health hazard (excluding mental health)?	No	As discussed in CEQA question b), **Mitigation Measure HAZ-1** ensures proper measures are in place to protect worker health and safety in addition to public exposure to potential ADL during construction activities.
17b) Would the proposed project result in exposure of people to potential health hazards?	No	Refer to answer for 17a above.

4.10 HYDROLOGY AND WATER QUALITY

4.10.1 Environmental Setting

Watershed and Water Quality

The project area is located within the Angora Creek – Upper Truckee River sub watershed of the Upper Truckee River watershed. The project area is within the jurisdictional limits of the Lahontan RWQCB, designated Region Number 6, which sets policy on implementing state and federal water quality law.

The Caltrans Water Quality Planning Tool identified two area water bodies on the 303(d) list of impaired receiving water bodies. The Upper Truckee River is listed as requiring a Total Maximum Daily Load (TMDL) for iron and phosphorus as being addressed with an EPA-approved TMDL. The Upper Truckee River is tributary to Lake Tahoe, which is listed for nitrogen, phosphorus, and sedimentation/siltation TMDLs. The Caltrans Water Quality Planning Tool identifies the project as being located within a high-risk receiving watershed (Caltrans 2020).

The Lahontan Basin Plan identifies the existing or potential beneficial uses of the Upper Truckee River as a surface water of the Lake Tahoe hydrologic unit with the receiving body being Lake Tahoe. The beneficial uses include Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Navigation (NAV), Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Migration of Aquatic Organisms (MIGR), and Spawning, Reproduction, and Development (SPAWN).

Existing Stormwater Drainage Patterns

The survey area was delineated for drainages utilizing the presence of ordinary high-water mark indicators, evidence of frequent surface water flows, and a connection to a traditional navigable waterway. These characteristics were indicative of a jurisdictional WOUS.

As discussed in Section 4.4 – Biological Resources, ephemeral drainage/stormwater drainage features are present within the project area. The drainages carry hydrological connection via existing culverts underneath US 50 and discharge to Meyers Creek, approximately 200 feet to the west of the project boundary. Meyers Creek is a tributary to the Upper Truckee River which drains into Lake Tahoe.

Existing runoff treatment BMPs within the project area include dual traction sand traps. A pair of traction sand traps are located along the southeastern corner of the US 50/Pioneer Trail intersection. Approximately 250 feet north of the US 50/Pioneer Trail intersection are a pair of traction sand traps that are tied into a cross culvert under US 50.

Additional information regarding the existing stormwater drainage patterns versus proposed improvements to the system are included in the attached Stormwater Data Report (**Appendix I**).

Flood, Tsunami and Seiche Hazards

The project area is delineated on Federal Emergency Management Agency (FEMA) map panel 06017C0632E, effective September 26, 2008. The project area is designated as 'Zone D' - Area of Undetermined Flood Hazard. The project area is not located within a FEMA Special Flood Hazard Area 1% (Caltrans 2020).

Tsunamis, or seiches as they are called when they occur within an enclosed body of water, can also be generated within Lake Tahoe by the numerous faults crossing through the basin. The potential for seiche-related waves up to 30 feet can occur along the shores of Lake Tahoe (TMPO and TRPA 2012). The project site is approximately 5.5 miles from Lake Tahoe and therefore is not subject to tsunami and seiche hazards.

Groundwater

Geotechnical borings and pavement cores were collected for the project in October 2019. Results from the geotechnical investigation indicate that groundwater was not encountered during collection of the borings that were advanced to 11.5 feet below the existing grade (Corestone 2019). It is possible for seasonal snowmelt to saturate the subgrade soils and potentially result in perched water layers during the spring months.

4.10.2 Regulatory Setting

Federal

Clean Water Act and NPDES Permit

Section 402 of the CWA requires NPDES permits for stormwater discharges from municipal storm drain systems. The Basin Plan (Lahontan RWQCB 2017) is the Lahontan Water Board's planning document. The Water Board issues the municipal stormwater NPDES permits to address stormwater impairments and recommend actions. Stormwater discharges into the County's municipal stormwater drainage system are regulated by the Lahontan RWQCB under the Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049.

Section 303(d) of the CWA authorizes the EPA to assist jurisdictions in listing impaired waters and developing TMDLs for these waterbodies. A TMDL establishes the maximum levels of each pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality. In California, the State and Regional water boards assess water quality monitoring data for the State's surface waters every 2 years to determine if they contain pollutants at levels that

exceed protective water quality standards. Water bodies and pollutants that exceed these standards are placed on the State's 303(d) List. The determination is governed by the Water Quality Control Policy for developing California's Clean Water Act Section 303(d) List. Currently, the 2016 303(d) list is in effect.

State

Statewide Construction General Permit

Because the proposed project would disturb more than 1 acre, it is subject to the statewide Construction General Permit Order 2009-0009-DWQ, which regulates stormwater leaving construction sites. Under this order, site owners must notify the State and implement a SWPPP prepared by a Qualified SWPPP Developer. The SWPPP must outline measures that would protect hydrology and water quality resources, including groundwater, from negative impacts during construction through implementation of BMPs and monitoring the effectiveness of BMPs. This permit is administered by the State Water Resources Control Board and overseen by the RWQCB.

Porter-Cologne Water Quality Control Act

Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State are subject to State regulation. Because the USACE determined that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the project may require a Waste Discharge Requirement permit to be issued by the Regional Water Quality Control Board.

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The TRPA Code of Ordinances contains requirements and standards intended to achieve water quality thresholds, goals, and policies. TRPA Code Chapter 60 - Water Quality, includes requirements for installation of BMPs and standards for grading and excavation. The following TRPA water quality standards that apply to the project are as follows: Section 60.4 – runoff shall be controlled with implementation of BMPs; Chapter 35 – regulations pertaining to development, grading or filling of lands within 100-year floodplains, recognition of natural hazards including development within floodplains (with certain exceptions for erosion control and water quality projects); Chapter 33.3 – standards for grading and excavation, including requirement of grading to take place between May 1 and October 15.

4.10.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less Than Significant Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less Than Significant Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on or off-site;	Less Than Significant Impact
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;	Less Than Significant Impact
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less Than Significant Impact
iv. impede or redirect flood flows?	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact

4.10.4 Answers to CEQA Checklist Questions

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact

As discussed in Section 4.4 – Biological Resources and the Environmental Setting above, the project area contains surface waters of the State. These drainages are ephemeral and function as stormwater runoff.

Construction Impact

During construction of the project, grading, excavation, and general ground disturbing activities may have the potential to temporarily impact water quality of waters of the State and nearby Meyers Creek and Lake Tahoe by changing drainage patterns and introducing sediment. Groundwater may be encountered during utility

relocation activities, relocation of power poles, removal of signal poles, and installation of light poles that could require dewatering.

As discussed in the project description, the County is required to implement an approved SWPPP to protect surface and groundwater quality during construction. The project would also implement an approved groundwater Dewatering Plan as a component of the SWPPP to include procedures for the capture, storage, and appropriate discharge for groundwater. These measures include temporary erosion and sediment control BMPs, tracking controls, grading and schedule timing limitations, and are designed to ensure sediments and construction contaminates do not enter waters of the State and/or receiving waters.

Additionally, as part of the final project approvals, the County is required to submit TRPA Soils/Hydrologic report (TRPA Code Subsection 33.3.6B). The report includes a summary of the geologic, soil, and hydrologic conditions expected to be encountered within the project corridor and the qualifications of the personnel conducting the soil/hydrologic investigation. The report would also be required to including measures to ensure groundwater flows are maintained to prevent groundwater from leaving the site as surface water. Compliance with TRPA Code Subsection 33.3.6B would ensure groundwater quality and movement is minimized during construction.

As discussed in the Regulatory Setting, because only 'non-federal' waters of the State exist within the project area, the project may require a WDR permit to be issued by the RWQCB. The RWQCB will use this permit to review planned BMPs to ensure there will be no adverse effects on waters of the State. The RWQCB may add additional avoidance and minimization measures that the Contractors must implement to prevent significant water quality impacts to waters of the State; therefore, impacts will remain less than significant and additional mitigation is not required.

Operational Impact

The project proposes to construct permanent water quality BMP features as discussed in the Project Description. The facilities would capture runoff and allow for infiltration to prevent sediment transport to Meyers Creek and Lake Tahoe; therefore, concentrated runoff from modified impervious surfaces and slopes associated with the project is not anticipated, and there would be no long-term impacts to water quality once the project is constructed.

Because the New Impervious Surface within Caltrans ROW is less than the threshold of one acre, no additional treated area is required per Section 4.3 of the Caltrans Project Planning and Design Guide (Caltrans 2020). Because the New Impervious Surface area is less than one acre in Caltrans ROW and less than 5,000

square feet in the County ROW, the project is not subject to the hydromodification requirements set forth within the MS4 permits.

Because the project proposes permanent water quality features anticipated to have a beneficial impact on water quality once constructed and would obtain required permits as necessary to comply with state requirements for protection of surface and groundwater quality during construction the project would not result in a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact

As discussed in the Environmental Setting, the project area does not contain shallow groundwater based on boring collected as part of the Geotechnical Investigation; however, there is still potential for snowmelt to cause saturated soils during spring runoff periods, or to be below 12 feet in some pole excavation locations. As discussed in CEQA a) above, the project would implement a contingency Dewatering Plan to protect both surface and groundwater due to construction impacts.

Additionally, the project provides for site drainage and permanent water quality features which would capture and infiltrate runoff within the project area. Therefore, the project would not result in a significant impact to groundwater recharge or sustainable management in the basin.

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

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

Less Than Significant Impact

As discussed in the Project Description, the project proposes improvements to the existing site drainage system while maintaining existing flow patterns to the maximum extent possible (Caltrans 2020). Proposed improvements include new storm drainpipes, catch basins, curb and gutter, and an infiltration basin. These features would capture potentially polluted runoff and allow for infiltration and treatment onsite and would not result in erosion off-site.

The project would result in additional impervious area and thus would result in a minor increase in runoff volume. This increased volume would be partially offset through construction of an infiltration basin sized to contain and treat the Water Quality Volume anticipated for the site, and therefore runoff volumes would not

have an adverse effect on downstream facilities (Caltrans 2020). The infiltration basin would additionally reduce runoff volumes from regular precipitation events from the portion of the project area that drains to it. For site drainage flowing towards the US 50 culvert, an increased flow velocity is not anticipated in the receiving Meyers Creek as flow velocities would be slightly attenuated as they pass through the system of dual traction sand traps before discharging into the cross culvert and downstream channel. Therefore, drainage improvements and new impervious area would not cause substantial erosion or siltation.

Erosion related to construction activities would be controlled through the SWPPP, BMPs, and other construction controls to prevent erosion and siltation.

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

Less Than Significant Impact

Refer to response to CEQA items a), b), and c)(i), above. Proposed impacts from new impervious areas are anticipated to have minimal impact on the amount or rate of runoff, and new drainage improvements would allow for increased runoff capture and infiltration onsite. Therefore, the project would not result in significant runoff capable of causing flooding on or off site.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact

Refer to responses above. Results of the Stormwater Data Report indicate the project would have minimal impact on the existing stormwater drainage system and proposed improvements such as catch basins and the infiltration basin would result in a reduction of polluted runoff leaving the site.

iv) Impede or redirect flood flows?

No Impact

Flood flows are not anticipated in the project area as the project area is not within a FEMA designated flood hazard area. Additionally, the proposed roadway improvements and water quality features within the project area do not include structural elements such as buildings, walls or dams that could impede or redirect flood flows. Therefore, there would be no impact.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

No Impact

As discussed in the Environmental Setting, the project area is not within a FEMA designated Special Flood Hazard Area, or in an area subject to tsunami or seiche as it is located over 5.5 miles away from the shoreline of Lake Tahoe. Therefore, there would be no impact.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact

The Lake Tahoe Basin Plan sets forth water quality standards for the surface and ground waters of the region. As discussed throughout this section, the project includes construction of green infrastructure improvements for water quality treatment, consistent with the goals of the Basin Plan.

The project would not conflict with implementation of the Basin Plan as it would not adversely affect beneficial uses or contribute to an exceedance of water quality objectives established to protect beneficial uses. The project is proposing to install permanent water quality features and use BMPs to improve water quality and meet local, state, and federal standards.

Implementation of the project is anticipated to result in an improvement in stormwater runoff quality associated with road-based pollutants compared to the existing condition.

4.10.1 TRPA Checklist – Water Quality

TRPA Questions	Answers	Discussion
3a) Would the proposed project result in changes in currents, or the course or direction of water movements?	No	Refer to response to CEQA item c) above. The intent of the site drainage design is to maintain existing flow patterns to the maximum extent possible while providing for site drainage improvements. The project would not alter the course of streams or rivers.
3b) Would the proposed project result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site?	No	Refer to responses to CEQA items a) through c) above. Through implementation of the infiltration basin, it is anticipated that 100% of the water quality volume from the State ROW area contributing to the infiltration basin would be treated and infiltrated. The infiltration basin has been sized to contain and infiltrate the stormwater runoff volume from all impervious surfaces generated by the 20-year, 1-hour storm (1 inch of rainfall in the Tahoe Basin) which drains to the basin (Caltrans 2020).
3c) Would the proposed project result in alterations to the course or flow of 100-year flood waters?	No	Refer to CEQA item c) iv. above.
3d) Would the proposed project result in change in the amount of surface water in any water body?	No	Refer to CEQA item c) i. above.
3e) Would the proposed project result in discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?	No	Refer to CEQA item a) above. The project is anticipated to result in beneficial impacts to existing water quality.

TRPA Questions	Answers	Discussion
3f) Would the proposed project result in alteration of the direction or rate of flow of ground water?	No	Refer to CEQA items a) and b) above. As part of the final project approvals, the County is required to submit TRPA Soils/Hydrologic report (TRPA Code Subsection 33.3.6B). The report includes a summary of the geologic, soil, and hydrologic conditions expected to be encountered within the project corridor and the qualifications of the personnel conducting the soil/hydrologic investigation. The report must also include measures to ensure groundwater flows are maintained to prevent groundwater from leaving the site as surface water. Compliance with TRPA Code Subsection 33.3.6B would ensure groundwater quality and movement is minimized during construction.
3g) Would the proposed project result in change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	No	Refer to 3f) above. Preliminary investigations indicate a depth to groundwater more than 12 feet. Construction of the project is anticipated to require excavations up to 13 feet bgs; any required dewatering is anticipated to be minimal. Additionally, the project would implement a contingency Dewatering Plan and submit a TRPA Soils/Hydrologic report.
3h) Would the proposed project result in substantial reduction in the amount of water otherwise available for public water supplies?	No	The project would have no impact to public water supply.

TRPA Questions	Answers	Discussion
3i) Would the proposed project result in exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?	No	Refer to response to CEQA items c) and d) above.
3j) Would the proposed project result in the potential discharge of contaminants to the groundwater or any alteration of groundwater quality?	No	Refer to response to CEQA items a) and b), and TRPA 3f) above.
3k) Is the project located within 600 feet of a drinking water source?	No	The project is not located within 600 feet of a drinking water source as depicted on TRPA's El Dorado County Source Water Assessment Map (TRPA 2000).

4.11 LAND USE AND PLANNING

4.11.1 Environmental Setting

The project is located within PAS 123-Meyers Forest. PAS are considered land use and zoning guidance documents for both TRPA and the County. The PAS 123 general land use classification is Conservation, the management strategy is mitigation, and it contains a special designation as a scenic restoration area; the project is located within Scenic Roadway Units 36 (US 50/State Route 89) and Unit 46 (Pioneer Trail). The planning statement for this area states that it is to be retained as open space and managed appropriately for visual enhancement and maintenance of early successional stage vegetation.

The project area occurs within the County ROW of Pioneer Trail, federal highway US 50/Caltrans owned State Route 89, on adjacent publicly owned parcels belonging to the CTC, and a portion of land of owned by private property owners.

4.11.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Physically divide an established community?	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less Than Significant Impact

4.11.3 Answers to CEQA Checklist Questions

a) Would the project physically divide an established community?

No Impact

The overall purpose of the project is to improve traffic flow and safety within the existing intersection. The proposed shared-use path improvements would connect to other trail segments, providing greater non-motorized access in the community; therefore, the project would not divide an established community and impacts are anticipated to be beneficial.

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

Less Than Significant Impact

The project is located within PAS 123 – Meyers forest, and has a Conservation general land use designation. The Meyers Forest PAS allows for public service transportation routes as a permissible use within the plan area. Project activities would occur within County ROW, federal highway US 50/Caltrans owned State ROW, on adjacent publicly owned parcels belonging to the CTC, and a portion of land of owned by private property owners.

The project would require acquisition of ROW from one property southeast of the intersection and acquisition of ROW and a permanent easement from one property northeast of the intersection to accommodate the larger footprint associated with the proposed roundabout. Temporary construction easements would be required from two properties southeast of the existing intersection, one property northeast of the intersection, and one property southwest of the intersection.

The project would comply with the County and TRPA land use plans, policies, and regulations by implementing controls to protect or avoid impacts to sensitive resources and mitigating any impacts to less than significant levels, as described in the other sections of this IS/IEC. The proposed project is consistent with the Basin Area Plan and the Regional Transportation Plan goals of improving transportation-related air quality by reducing emissions and improving pedestrian and cyclist mobility.

Therefore, because the project is required to comply with the County and TRPA land use plans, policies, and regulations by implementing controls to protect or avoid impacts to sensitive resources and mitigate impacts, significant impact would not occur due to a conflict with the land use plan, policy, or regulations.

4.11.1 TRPA Checklist – Land Use

TRPA Questions	Answers	Discussion
8a) Would the proposed project include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan?	No	A public service transportation route is a permissible use within the PAS 123 plan area. As discussed in CEQA item b) above, the project complies with all applicable local and regional land use planning regulatory documents. There would be no impact.
8b) Would the proposed project expand or intensify an existing non-conforming use?	No	There are no existing non-conforming uses associated with the project. There would be no impact.

4.12 MINERAL RESOURCES

4.12.1 Environmental Setting

Minerals are naturally occurring chemical elements or compounds, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat, and oil-bearing rock, but excluding geothermal resources, natural gas, and petroleum.

Within the Tahoe Basin, the extraction for mineral resources is not permitted (Placer County Community Development Resource Agency and TRPA 2016).

According to the State Mining and Geology Board (California Department of Conservation 2019b) there are no state or regionally valuable mineral resources within the project boundary.

4.12.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact
b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	No Impact

4.12.3 Answers to CEQA Checklist Questions

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

No Impact

As discussed in the Environmental Setting, there are no known mineral resources of value associate with the project area. The proposed project would therefore not result in the loss of a known mineral resource.

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

No Impact

According to the State Mining and Geology Board and TRPA PAS, there are no resource recovery sites associated with the project; therefore, there would be no impact.

4.13 NOISE

4.13.1 Environmental Setting

Noise is defined as a sound or series of sounds that are intrusive, objectional, or disruptive to daily life. Significant noise generators within the Tahoe Basin include motor vehicles, public transit, and a variety of stationary sources in urban settings.

The Noise Element of both the Tahoe Regional Plan and the El Dorado County General Plan serve as an advisory tool for regional decision-makers regarding noise and provides land use compatibility guidelines for noise. For areas zoned for single-family residential uses, both entities have established 60 dBA Ldn as the TRPA threshold evaluated noise level. For schools and residences in this region, the normally acceptable noise level is 60 dBA Ldn, while for parks the normally acceptable noise level is 70 dBA Ldn. TRPA identifies motor-vehicle use as a strong influencer of noise threshold attainment and looks to reduce noise by transitioning to a more walkable development pattern in town centers and improving pedestrian, bicycle, and transit facilities.

The proposed project site is located adjacent to the Highway 50 corridor, which acts as a major route entering the Lake Tahoe Basin. The site is located within an area characterized by low density residential, conservation, and recreational areas, which include a golf course, several homes, and a community recreation area. The closest residence is located approximately 200 feet from the project area boundary. Within the project area, existing sources of noise include motor vehicles from US 50/SR 89, Pioneer Trail, and the nearby community of Meyers.

Noise is defined as a sound or series of sounds that are intrusive, objectional, or disruptive to daily life. Significant noise generators within the Tahoe Basin include motor vehicles, public transit, and a variety of stationary sources in urban settings.

4.13.2 Regulatory Setting

TRPA

The TRPA Code (Chapter 68: Noise Limitations) establishes noise limits for areas within TRPA's jurisdiction. Community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. TRPA prescribes the development standards for Meyers Forest PAS, which set the maximum community noise equivalent level at 50 Community Noise Equivalency Levels (CNEL). The maximum CNEL for the US 50 corridor is 65 CNEL.

Project construction between 8:00 a.m. and 6:30 p.m. is exempt from noise limitations per TRPA Code section 68.9 - Exemptions to Noise Limitations, and subsection 22.7.5 for temporary activities. Per TRPA Code 68.8.1 - Project Review,

TRPA will not approve a project which causes a community noise standard (CNEL) to be exceeded.

Prior to approving a temporary activity that may exceed such limitations, TRPA shall provide notice and an opportunity to be heard. TRPA may approve such temporary activities provided it finds that:

A. The activity is not injurious or disturbing to the health, safety and general welfare of persons or property in the neighborhood, and the general welfare of the region, and the applicant will take reasonable steps to protect against such injury; and,

B. The activity is in a plan area designated commercial, public service, or tourist; is limited to no more than ten hours duration and is between the hours of 8:00 am to 10:00 pm; or the activity is a race or exhibition, is limited to no more than six hours in duration and is conducted during daylight hours.

4.13.3 CEQA Checklist Summary

Would the project result in:

CEQA Question	Impact Determination
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant Impact with Mitigation Incorporated
b) Generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	No Impact

4.13.4 Answers to CEQA Checklist Questions

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact with Mitigation Incorporated

Noise levels are measured to regulate ambient noise and protect people from exposure to excessive noise. Different land uses have different acceptability levels

in terms of noise disturbance. For example, industrial uses have a higher noise threshold than residential uses. Noise standards provide a means of assessing exposure and compatibility based on specific uses.

The project would primarily be constructed Monday through Friday during the exempt hours of 8:00 a.m. to 6:30 p.m. per the TRPA Code to reduce the impacts of temporarily increased ambient noise levels on nearby residences (approximately 200 feet from the project area boundary). Construction at night would be required only for one night to construct portions of roundabout circulatory pavement and temporary conform ramps. As discussed in the Regulatory Section, prior to project approval, TRPA would be required to determine whether the proposed project meets the requirements of noise limitation exemptions set forth in TRPA Code and give neighbors an opportunity to be heard regarding the proposed overnight construction activity.

TRPA recognizes automobile use as a strong influencer of noise threshold attainment (TRPA 2006). The project proposes traffic calming features, such as a roundabout, in addition to pedestrian and bicycle improvements which provide for alternative non-motorized modes of transportation. Therefore, once operational, the project is anticipated to help attain the noise threshold and have a beneficial impact on noise threshold attainment.

During construction, workers and nearby residents would be temporarily exposed to noise generated by construction equipment, such as compaction equipment, excavators, backhoes, and loaders. No pile driving is anticipated for the project, which is the primary source of noise during construction; however, because of the short construction season and seasonal travel, nighttime construction is anticipated. The increase in ambient noise would be temporary during construction, would comply with TRPA's Noise Code requirements for construction projects. Construction noise during the nighttime periods could result in noise levels in excess of the established standards set forth in the TRPA or County Code; this would be a potentially significant effect on nearby households. **Mitigation Measure NOI-1** would limit construction hours, require noise-muffling devices/barriers and/or separation for construction-related equipment, and requires noticing of construction schedules for residences adjacent to the project alignment prior to commencement of construction minimizing the potential for noise intrusion to residents. Implementation of **Mitigation Measure NOI-1** would therefore reduce potentially significant impacts from construction noise during nighttime hours to less than significant:

- **Mitigation Measure NOI-1:** The project will implement the following Nighttime Construction Controls to reduce potential noise impacts:

    1. Project construction activities shall be limited to the hours between 8:00 a.m. and 6:30 p.m. Any exceptions to these hours shall be

evaluated on a case-by-case basis and require prior approval by the County and TRPA to ensure the activity is not injurious or disturbing to the health, safety and general welfare of persons or property in the neighborhood, and the general welfare of the region, and the contractor will take reasonable steps to protect against such injury.

2. All internal combustion engines used for construction shall be fitted with manufacturer-recommended mufflers. No equipment shall have an unmuffled exhaust.
3. Residents adjacent to proposed construction activities shall be given advance notice of project construction schedules and shall be notified that substantial temporary increases in local noise levels will occur during project construction.
4. To the greatest extent possible, nighttime construction work will be limited to the portion of the project site furthest from the residences.
5. Generators and compressors required during project construction shall be located as far as possible from existing residents and, if necessary, shielded from view of those residences by portable noise barriers.

Finding: Implementation of Mitigation Measure NOI-1 would reduce potentially significant impacts from construction noise during nighttime hours to less than significant.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact

Vibration is described in terms of frequency and amplitude. Unlike sound, there is no standard way of measuring and reporting amplitude. Construction vibration is generally associated with pile driving and rock blasting. Occasionally, large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. Construction activities would result in intermittent exposure of ground borne vibration in the project area. However, this impact would be temporary and would not occur at the boundary of a residential zone or near historic buildings that are most sensitive to vibration damage. Because impacts would be temporary with no effect on potential sensitive receptors and would comply with the TRPA Noise Ordinance, the impacts from groundborne vibration or groundborne noise levels would be less than significant.

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

No Impact

The Lake Tahoe Airport is located approximately 2.3 miles to the north. Therefore, the project would not expose construction workers to excessive aircraft noise.

4.13.1 TRPA Checklist – Noise

TRPA Questions	Answers	Discussion
6a) Would the proposed project result in increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan?	No, with Mitigation	Refer to discussion for CEQA item a). Construction noise during the nighttime periods could result in noise levels in excess of the established standards set forth in the TRPA or County Code; this would be a potentially significant effect on nearby households. **Mitigation Measure NOI-1** requires prior approval from the County and TRPA, would limit construction hours, require noise-muffling devices/barriers and/or separation for construction-related equipment, and requires noticing of construction schedules for residences adjacent to the project alignment prior to commencement of construction minimizing the potential for noise intrusion to residents.
6b) Would the proposed project result in exposure of people to severe noise levels?	No	Refer to CEQA items a) through c). Increases in noise are anticipated to be temporary during construction and would not be severe.
6c) Would the proposed project result in exposure of people to severe noise levels?	No, with Mitigation	Refer to discussion for CEQA item a). **Mitigation Measure NOI-1** would reduce potentially significant impacts from construction noise during nighttime hours to less than significant. There are no other potentially significant noise levels associated with the project.

TRPA Questions	Answers	Discussion
6d) Would the proposed project result in the placement of residential or tourist accommodation uses in areas where the existing CNEL exceeds 60 dBA or is otherwise incompatible?	No	The project does not propose residential or tourist accommodations as part of the project. There would be no impact.
6e) Would the proposed project result in the placement of uses that would generate an incompatible noise level in close proximity to existing residential or tourist accommodation uses?	No	The project would provide traffic calming and enhancement of non-motorized transportation facilities within an existing transportation corridor. Therefore, the project would not generate an incompatible noise level, and may result in a reduction in ambient noise levels once constructed.
6f) Would the proposed project result in exposure of existing structures to levels of ground vibration that could result in structural damage?	No	Refer to CEQA item b). The project would not expose structures to ground vibrations capable of resulting in structural damage.

4.14 POPULATION AND HOUSING

4.14.1 Environmental Setting

The project is located in El Dorado County in the unincorporated community of Meyers. The population of Meyers is approximately 29,100 persons, or roughly 11,700 households (California Department of Finance 2014-2018). The Meyers Area Plan directs the growth of population and residential uses in the Meyers Area.

4.14.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

4.14.3 Answers to CEQA Checklist Questions

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

No Impact

The project would convert the existing signalized intersection into a three-leg modern roundabout to address pedestrian safety, traffic flow issues, and improve non-motorized access within the intersection and nearby bikeways and trails. The project does not propose change to existing land use or impacts to housing (such as demolition) that would cause need for housing elsewhere. The proposed project would not induce population growth directly by add new housing or commercial uses, or indirectly by adding new infrastructure that opens new areas for development.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

The project is located entirely within existing roadway ROW and adjacent vacant land. Therefore, the project does not require the displacement of people or housing and would therefore not require construction of replacement housing elsewhere.

4.14.1 TRPA Checklist

TRPA Questions – Population	Answers	Discussion
11a) Would the proposed project alter the location, distribution, density, or growth rate of the human population planned for the Region?	No	Refer to response to CEQA items a) and b) above. Construction of the transportation and safety improvements at an existing intersection would have no effect on human population planned for the region.
11b) Would the proposed project include or result in the temporary or permanent displacement of residents?	No	Refer to response to CEQA item b). The project would not displace residents either temporarily or permanently.
11c) Would the proposed project affect existing housing, or create a demand for additional housing?	No	Refer to CEQA items a) and b). The proposed project is a transportation and safety improvement project that does not increase lane capacity or extend infrastructure, and therefore would not induce substantial population growth such as adding new housing or commercial uses.

TRPA Questions – Housing	Answers	Discussion
12a) Would the proposed project affect existing housing, or create a demand for additional housing?	No	There is no existing housing associated with the project. Improvements to the existing intersection would not result in need for additional housing.
12a) Would the proposal result in the loss of housing for lower-income and very-low-income households?	No	As discussed throughout this section, the project would have no impact on housing, including lower-income and very-low-income households.

4.15 PUBLIC SERVICES

4.15.1 Environmental Setting

Fire Protection

The South Lake Tahoe Fire Department consists of three fire stations. The closest station to the project area is the South Lake Tahoe Fire Station 4 at the Lake Tahoe Airport located approximately 2.8 miles to the north, and the Lake Valley Fire Protection District Station 7, located approximately 1.2 miles from the project area. The Department participates in automatic aid and mutual aid response with Lake Valley Fire Protection District, which serves the residents of El Dorado County in the Lake Tahoe Basin through formal contract. The Department also participates in mutual aid with CalFire in the Tahoe Basin and throughout the State.

Police Protection

The project area is served by the California Highway Patrol and the City of South Lake Tahoe Police Department. The Police Department's mission is to work in partnership with the community to protect life and property, to provide leadership in solving neighborhood problems, and to enhance the quality of life in the South Lake Tahoe area. The Department has a mutual aid Critical Incident Protocol with the El Dorado County Sheriff's Office for additional policing needs.

4.15.2 CEQA Checklist Summary

Would the project result in:

CEQA Question	Impact Determination
a) Would the project result in substantial adverse physical impacts associated with the need and/or provision of new or physically altered governmental services and/or facilities to maintain acceptable service ratios, response times, or other performance objectives for any of the public services? i) Fire protection? ii) Police protection? iii) Schools? iv) Parks? v) Other public facilities?	No Impact

4.15.3 Answers to CEQA Checklist Questions

a) Would the project result in substantial adverse physical impacts associated with the need and/or provision of new or physically altered governmental services and/or facilities to maintain acceptable service ratios, response times, or other performance objectives for any of the public services?

i) Fire protection?

ii) Police protection?

iii) Schools?

iv) Parks?

v) Other public facilities?

No Impact

The project is proposing to construct a three-leg modern roundabout at the existing signalized intersection of US 50 and Pioneer Trail. The project would install roundabout, lighting, signage, and bicycle and pedestrian features to improve traffic delay and safety within the area.

The project would not increase dwelling units or road capacity at the proposed intersection, and thus involves no increase in demand for public services such as schools, libraries, or parks. During construction, the project may have a negligible temporary increase in emergency services demand to protect construction equipment or personnel that could be adequately served by existing services. There are adequate fire and police services to protect the construction sites and construction workers without affecting emergency services ratios, response times or other performance objectives. Therefore, the proposed project would not require new or physically altered governmental services and/or facilities to maintain acceptable service ratios, response times, or other performance objectives.

4.15.1 TRPA Checklist – Public Services

Would the proposed project have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas?

TRPA Questions	Answers	Discussion
14a) Fire protection?	No	Refer to CEQA item a) above. There are adequate existing fire services to serve the project area. Safety improvements are intended to have a beneficial impact on emergency calls to the area by reducing vehicle/vehicle, vehicle/pedestrian, and vehicle/bicycle conflicts.
14b) Police protection?	No	Refer to CEQA item a) above. There are adequate existing law enforcement services to serve the project area. Safety improvements are intended to have a beneficial impact on emergency calls to the area by reducing vehicle/vehicle, vehicle/pedestrian, and vehicle/bicycle conflicts.
14c) Schools?	No	Refer to CEQA item a) above. The project would not result in an increase in population growth and would not require new or expanded school facilities.
14d) Parks or other recreational facilities?	No	Refer to CEQA item a) above. The project would not result in an increase in population growth and would not require construction of new or expansion of existing recreation facilities.

TRPA Questions	Answers	Discussion
14e) Maintenance of public facilities, including roads?	No	The project is required to comply with TRPA Code 36.5.5 - Bicycle and Pedestrian Facility Maintenance Plan: *Entities responsible for the construction and maintenance of all projects containing active transportation facilities are required to submit a Maintenance Responsibilities Chart and Plan prior to TRPA permit issuance. These plans must clearly identify responsibilities for capital improvements and annual infrastructure operation and maintenance and identify funding needs and sources.* The project improves an existing transportation facility consistent with adopted plans, and would not have an unplanned effect upon, or result in a significant need for new or altered roadway maintenance services.
14f) Other governmental service?	No	Implementation of the proposed intersection improvements would not result in the need for new or expanded governmental services.

4.16 RECREATION

4.16.1 Environmental Setting

There are no recreation facilities within the project area. As discussed in the Project Description, an existing Class I shared-use trail is located to the west of US 50; this trail does not connect to the Class II bike lane within US 50 in the project area, or the Class I shared-use trail on the east side of US 50. At the existing intersection, pedestrians are only allowed to cross US 50 in the crosswalk on the north side of the intersection. This crosswalk does not connect to another pedestrian facility; all other pedestrian movements are prohibited within the existing project area intersection.

The Paradise Golf Course is located to the southeast of the project area. Adjacent to the project area is also open land that could be passively used for recreational purposes, such as hiking.

4.16.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

4.16.3 Answers to CEQA Checklist Questions

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 project is primarily a roadway safety improvement project that would reduce traffic delay and improve safety for both auto and non-auto users and provide connectivity to the existing trail network. The project does not require construction or expansion of recreational facilities because the project does not influence population growth. Population growth is the main driver for new or expansion of facilities; therefore, the project would not result in the need for additional facilities.

Once constructed, the project would provide improved active transportation connections to existing trails but does not include recreational facilities or require the construction or expansion of such facilities.

b) Would 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

The project would provide improved active transportation connections to existing recreational resources but does not include recreational facilities or require the construction or expansion of such facilities.

4.16.1 TRPA Checklist – Recreation

TRPA Questions	Answers	Discussion
19a) Does the proposed project create additional demand for recreation facilities?	No	Refer to CEQA item a). The proposed project is an infrastructure project designed to enhance safety and mobility within the area. The project would not create an additional demand for recreation facilities within the vicinity.
19b) Create additional recreation capacity?	No	Refer to CEQA item b). The proposed project would not create additional recreation capacity within the area.
19c) Have the potential to create conflicts between recreation uses, either existing or proposed?	No	The proposed project would not change or interfere with recreation uses, and therefore would not cause conflicts between existing or proposed recreation uses in the area.
19d) Result in a decrease or loss of public access to any lake, waterway, or public lands?	No	There are no existing public access uses in the area. There would be no impact.

4.17 TRANSPORTATION

4.17.1 Environmental Setting

The project area contains the existing signalized intersection of Pioneer Trail and US 50. The "T" intersection is currently controlled by four signalized traffic lights (two traffic signals on the east and west sides of US 50 south of the intersection, and two on the east and west sides of US 50 north of the intersection). The annual AADT of Pioneer Trail is approximately 6,335 vehicles per day (FHWA 2016a). The annual AADT of US 50 is approximately 14,600 vehicles per day (Caltrans 2017c). The intersection currently operates at an unacceptable LOS (E or F during Sunday peak hours), due to traffic congestion (**Appendix A**).

As discussed in the Project Description, this intersection was identified as a high collision location in the 2011 *Annual Accident Location Survey* conducted by the County's Department of Transportation. The FHWA Resource Center's *Meyers Road Safety Audit*, conducted in 2016, further identified safety issues at the Pioneer Trail/US 50 intersection. Results of the audit concluded this intersection experiences the highest number of accidents of all the intersections within the Meyers Road Safety Audit study area (FHWA 2016a).

It was determined the area is prone to a higher-than-average accident rate due to many factors, including grading and drainage issues (the southeast corner has standing water after rain events and snowmelt); visibility issues related to signal equipment and tree encroachment; and excess motorist speed while turning from southbound US 50 onto eastbound Pioneer Trail. During winter storm conditions, vehicles regularly slide through the intersection and hit waiting vehicles in the west bound lane of Pioneer Trail (FHWA 2016a); most collisions at the intersection were a result of drivers traveling at unsafe speeds in snowy or icy conditions.

Existing non-motorized transportation features within the project area include limited bike facilities and a crosswalk on US 50 on the north side of the intersection. Except this one crosswalk, all other pedestrian movements are prohibited, and the existing intersection does not have sidewalks or pedestrian ramps. While the existing intersection has a bicycle lane along US 50 southbound, the bicycle lanes in both directions of Pioneer Trail do not extend into the intersection, and the pedestrian and bicycle facilities on the west side of US 50 do not connect to the facilities on the east side of US 50.

4.17.2 Regulatory Setting

Local and Regional Transportation

The following local and regional transportation guidance documents apply to the project:

- The **2020 Draft Regional Transportation Plan (RTP)** is the Lake Tahoe Regional Transportation Plan and Sustainable Communities Strategy, and element of the TRPA Regional Plan. The RTP's vision is a transportation system that prioritizes bicycling, walking, and transit and serves residents and visitors while contributing to the environmental and socioeconomic health of the Region. Important strategies of the Regional Plan and RTP are to reduce the overall environmental impact of transportation in the Region, create walkable, vibrant communities, and provide alternatives to driving.
- The **2010 Lake Tahoe Region Bicycle and Pedestrian Plan** identifies planned bicycle and pedestrian improvements and enables and other implementing agencies to apply for funding assistance (TRPA 2010).
- The **TRPA Code of Ordinances**, Section 36.5.5. Bicycle and Pedestrian Facility Maintenance Plan requires "Entities responsible for the construction and maintenance of all projects containing active transportation facilities are required to submit a Maintenance Responsibilities Chart and Plan prior to permit issuance. These plans must clearly identify responsibilities for capital improvements and annual infrastructure operation and maintenance and identify funding needs and sources."

4.17.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	Less Than Significant Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	Less Than Significant Impact
c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less Than Significant Impact
d) Would the project result in inadequate emergency access?	Less Than Significant Impact

4.17.4 Answers to CEQA Checklist Questions

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact

A common goal of TRPA's Regional Transportation Plan, the Lake Tahoe Region Bicycle and Pedestrian Plan, and the Tahoe Metropolitan Planning Organization is to improve air quality and limit greenhouse gas emissions by transitioning to a more walkable community and improving traffic flow and circulation.

Additionally, the Meyers Area Plan contains several goals, policies, and implementation measures that support improving traffic flow, including the goal to identify opportunities to reduce traffic speeds through Meyers without adversely affecting air quality by using ROW improvements and traffic controls. One of the implementation measures in the plan includes developing and implementing intersection improvements at the US 50/Pioneer Trail intersection that maintain or improve LOS, improve traffic flow, reduce vehicle emissions associated with traffic delays, and improve pedestrian and bicycle safety.

The project proposes to construct a three-leg modern roundabout with pedestrian and bicycle path connections to improve traffic flow, safety, and trail connectivity at the intersection of US 50 and Pioneer Trail. Residents and visitors are currently using the intersection that is considered to have an unacceptable LOS during peak periods. Once constructed, the intersection is anticipated to operate as LOS A (El Dorado County 2017).

Once constructed, the project would have a beneficial impact on transportation circulation, safety for auto and non-auto users, and would provide for environmental benefits. The project would therefore not conflict with any ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

Less Than Significant Impact

CEQA Guidelines §15064.3, subdivision (b) pertains to the use of VMT to analyze transportation impacts. The Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) provides technical recommendations regarding the assessment of VMT, non-binding thresholds of significance, potential exemptions, or presumptions of less-than-significant CEQA impacts, and mitigation measures. Section F of the Technical Advisory notes that maintenance activities and the installation of operational features such as upgrading traffic control devices, adding turn pockets, or installing traffic calming measures are "unlikely to lead to a substantial or measurable increase in vehicle travel." As noted in CEQA Guidelines Section 15064.3(b)(2), transportation projects "that reduce, or have no impact on, vehicle-miles traveled should be presumed to cause a less that significant transportation impact."

The conversion of the intersection from a three-way signalized intersection to a roundabout is an operational improvement intended to slow traffic and reduce queuing conflicts. There are no elements of the proposed project that would induce vehicle travel, such as new lane capacity or land uses changes. Thus, the project is anticipated to have no impact on VMT post-construction. Providing for an alternative mode of non-motorized travel through the project area is additionally anticipated to reduce overall VMT as users switch to walking or biking.

Construction equipment and worker vehicles would generate vehicle trips over the 120 days of construction, which would be temporary and a minor addition to existing VMT. Therefore, the project would have a less than significant impact on VMT.

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

Less Than Significant Impact

As discussed in the Project Description, the proposed project was identified as a needed safety improvement in the Meyers Road Safety Audit (FHWA 2016a). The improvement strategies identified for this location include improving intersection sight distance and improving/extending bike and pedestrian facilities through the intersection. Additionally, the document noted that this intersection is the gateway to Meyers and consideration should be given to intersection types that encourage slower speeds, primarily a roundabout.

A traffic operations analysis (TOA) for the intersection of US 50 and Pioneer Trail was also prepared consistent with Caltrans' Traffic Operation Policy Directive #13-02. Two alternatives were analyzed in the TOA, a traffic signal and roundabout.

Geometry of the roundabout design was analyzed during development of the TOA and was determined to result in a beneficial impact on traffic flow and collision safety. One of the primary benefits of a roundabout at this location is that motorists would have to reduce their speeds while traveling through the intersection, as compared to the signalized intersection. This feature is consistent with the suggested improvements of the Meyers Road Safety Audit and would alert drivers to a change in surroundings upon entering or exiting Meyers. Using the geometric design of a roundabout to control speeds may also decrease the collision rates at the intersection by encouraging slower speeds at all times of the day (El Dorado County 2017); a roundabout would therefore address the primary cause of collisions at this intersection. In addition, the roundabout would reduce delays at the intersection and result in fewer air quality and noise impacts. Unlike the signalized intersection, these benefits of a roundabout can be realized year-round. Additionally, the Inscribed Circle Diameter of the roundabout was designed

specifically to accommodate large vehicles (including emergency response vehicles) and snow removal equipment.

Therefore, the project is anticipated to result in a reduction in the current hazards and provide beneficial safety improvements. Because the project proposes a roundabout improvement, the geometric design of the project is anticipated to result in beneficial effects on safety and compatible uses.

Additional information supporting this determination can be found in the TOA memo, included as **Appendix J**.

d) Would the project result in inadequate emergency access?

Less Than Significant Impact

The results of the TOA indicate that construction of the proposed roundabout would improve emergency response capabilities by improving traffic flow within a heavy-flow intersection as opposed to a signal alternative. A project specific TMP would be employed during construction to ensure adequate emergency access is maintained during construction. Therefore, operational impacts are anticipated to be beneficial, and short-term construction-related impacts would remain less than significant with use of the TMP.

4.17.1 TRPA Checklist – Transportation/Circulation

TRPA Questions	Answers	Discussion
13a) Would the proposed project result in generation of 100 or more new Daily Vehicle Trip Ends (DVTE)?	No	The project does not propose new features with a potential to influence new Daily Vehicle Trip Ends. There would be no impact.
13b) Would the proposed project result in changes to existing parking facilities, or demand for new parking?	No	The project does not propose to construct or modify existing parking facilities and would not result in a need for new parking. There are no new buildings or facilities associated with the project that would result in a demand for new parking.
13c) Would the proposed project result in substantial impact upon existing transportation systems, including highway, transit, bicycle, or pedestrian facilities?	No	As discussed throughout, the purpose of the project is to improve the existing intersection with both auto and non-automobile transportation improvements anticipated to result in a beneficial impact on this part of the highway corridor and bicycle and pedestrian facilities.
13d) Would the proposed project result in alterations to present patterns of circulation or movement of people and/or goods?	No	See responses for CEQA items a) through d). The project proposes transportation improvements that would result in an improvement to the existing pattern of circulation but would not change the movement of people and/or goods other than to make vehicular and pedestrian transportation easier and safer.

TRPA Questions	Answers	Discussion
13e) Would the proposed project result in alterations to waterborne, rail or air traffic?	No	There are no alterations to waterborne, rail, or air traffic associated with the project. There would be no impact.
13f) Would the proposed project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	No	Refer to CEQA items a) through d). As indicated by analyses conducted for the TOA, the project would result in an increased factor of safety for motorists, bicyclists, and pedestrians.

4.18 TRIBAL CULTURAL RESOURCES

4.18.1 Environmental Setting

The APE is located within a region previously inhabited by the Washoe. A Hokan-speaking hunting and gathering group, the Washoe inhabited the chain of valleys along the eastern slope of the Sierra Nevada, from Honey Lake to Antelope Valley. The Pine Nut Mountains and the Virginia Range formed the eastern boundary of Washoe territory, while the western boundary extended several miles beyond the Sierra crest. Much has been written about Washoe land-use in the Tahoe Basin and their use of the region's resources since first contact in the mid-1800s. Lake Tahoe is the center of the Washoe world, both geographically and socially. Legendary and mythological associations to places within the basin are common.

In the late summer and early fall, Washoe began leaving Lake Tahoe and dispersed in small groups to valleys east of the Sierra. Antelope and rabbit were hunted in early fall, both by individuals and in communal drives. Rabbits were dried for winter use. In late fall, collecting pine nuts and deer hunting were important activities along the eastern Sierra and the Pine Nut Mountains to the east. With the coming of winter, Washoe families returned to their favored base camps at lower elevations where their stores of pine nuts, seeds, and dried meat sustained them.

The Washoe trekked to distant places for desired resources, while most circulated in the vicinity of their traditional habitation sites. They were not compelled to cover large expanses of land in their subsistence pursuits, a pattern common to other Great Basin groups. This was due to the large variety of predictable resources that were close at hand. Their relatively rich environment afforded the Washoe a degree of independence and may account for their long tenure in their known area of historic occupancy.

4.18.2 Regulatory Setting

Native American Consultation

In accordance with Assembly Bill 52, as identified in the PRC Section 21080.3.1(b)(2) of CEQA and Section 106 of the National Historic Preservation Act, Native American tribes (tribes) identified by the NAHC must be invited to consult on projects. Additionally, TRPA Code contains requirements for consultation with area tribes (Subsection 67.3.2).

4.18.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k), or	Less Than Significant Impact with Mitigation Incorporated
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC § 5024.1. In applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less Than Significant Impact with Mitigation Incorporated

4.18.4 Answers to CEQA Checklist Questions

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k)?

or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC § 5024.1. In applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporated

The County contacted the NAHC on August 27, 2019, to request a record search of their Sacred Lands File and a contact list for regional Tribes that may have knowledge of cultural or tribal resources within or immediately adjacent to the APE. A response was received from the NAHC on September 19, 2019, indicating the search was negative for sacred lands in the area.

The NAHC identified the tribal representative as Darrel Cruz, Tribal Historic Preservation Office, of the Washoe Tribe of Nevada and California (Washoe Tribe). An inquiry letter was mailed on County letterhead to Mr. Cruz on March 6, 2020. Mr. Cruz indicated the tribe does not have immediate knowledge of cultural resources with the APE that may be affected by the project but did request to be notified in the event of inadvertent findings.

Consultation-related material, including the NAHC letters and responses, the Washoe Tribe consultation letter and email correspondences are included in the attached HPSR/ASR (**Appendix E**).

In the event inadvertent cultural resources are discovered because of project activities, Mitigation Measure TCR-1 will ensure the Washoe Tribe is informed of findings and potential significant impacts to tribal cultural resources are avoided.

- **Mitigation Measure TCR-1: Continue Consultation with Washoe Tribe.** Construction shall cease if a potential cultural resource is inadvertently discovered during construction, and the Washoe Tribe shall be contacted to continue consultation. Construction shall not resume until consultation is considered concluded when either of the following occurs, pursuant to PRC 21080.3.2(b): 1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached

4.18.1 TRPA Checklist – Archaeology

TRPA Questions	Answers	Discussion
20a) Would the proposed project result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object, or building?	No	Refer to the responses to CEQA questions a) through c) in Section 4.5 – Cultural Resources. The project has established an ESA boundary to prevent project impacts to an identified archaeological site/historic resource. No Native American significant sites or resources with potential to be impacted by the project were identified.
20b) Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records?	No	Refer to discussions for CEQA questions a) through c) in Section 4.5 – Cultural Resources. No Native American significant sites or resources with potential to be impacted by the project were identified.
20c) Is the property associated with any historically significant events and/or sites or persons?	No	Native American correspondence was initiated by NCE on August 27, 2019. The letter requested a record search of their SLF and a contact list for regional tribes that may have knowledge of cultural or tribal resources in the vicinity of the APE. A response was received from the NAHC on September 19, 2019, which indicated negative SLF results within the APE. Additionally, consultation with the Washoe Tribe indicate there are no known cultural resources associated with the project area. The project has additionally established an ESA boundary to prevent project impacts to a known nearby historic resource (the Old Placerville Road) as discussed in Section 4.5.1).

TRPA Questions	Answers	Discussion
20d) Does the proposed project have the potential to cause a physical change which would affect unique ethnic cultural values?	No	The project would be constructed in an existing developed transportation corridor. Results of Native American consultation efforts indicate there are no unique ethnic cultural values associated with the project area (NCE 2020c).
20e) Would the proposed project restrict historic or pre-historic religious or sacred uses within the potential impact area?	No	Refer to responses throughout this section. There are no pre-historic, historic, or sacred uses of the project area that would be impacted by project activities.

4.19 UTILITIES AND SERVICE SYSTEMS

4.19.1 Environmental Setting

Underground utilities, including sanitary sewer, water, and communications, are present within the Pioneer Trail and US 50 ROWs. Sewer is present within the western half of the project area, while communications and water are present throughout.

4.19.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	Less Than Significant Impact
c) Result in a determination by a wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less Than Significant Impact
d) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact

4.19.3 Answers to CEQA Checklist Questions

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact

To the maximum extent possible, the project would be designed to avoid utility relocations. Construction of the roundabout would require modification of various existing utilities in conflict with the proposed improvements. Proposed modifications to utilities are anticipated to include:

- Relocation of a power pole and various cabinets at the northeast corner;
- Removal of four existing traffic signals;
- Upgrading the existing transformer and conduit/wiring to support additional lighting proposed as part of the project; and,
- Minor relocation and/or modification of existing sanitary sewer manholes on the west side of US 50 north of the intersection and on the north side of Pioneer Trail.

Utility relocations and signal removals are anticipated to require excavations no deeper than 13 feet.

Additionally, the project proposes a variety of permanent stormwater quality BMPs such as catch basins, piping, and curb and gutter to collect and direct runoff to a new proposed infiltration basin. Therefore, the project provides for onsite capture and treatment of runoff and would not result in the need for expanded drainage facilities.

Therefore, the project would have a minor effect on construction or relocation of utilities that would have less than significant environmental effects.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less Than Significant Impact

The proposed project would have a minor effect on water supplies. Water trucks may be utilized during construction to limit dust associated with ground-disturbing activities; however, this would have minimal impact on existing water supplies that serve the area. The project does not propose features that would require water services, such as irrigation for permanent landscaping; therefore, impacts would be less than significant.

c) Would the project result in a determination by a wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact

Wastewater infrastructure in the project area is connected to the South Tahoe Public Utility District lines. The project would not construct facilities that generate wastewater. During construction, the project may encounter groundwater requiring treatment and disposal; this disposal may be to the sanitary sewer system.

All construction groundwater would be handled per the approved Dewatering Plan and discharged as appropriate. This would be a minor contribution to wastewater treatment or facilities that would not adversely affect the wastewater system

capacity; therefore, the project would have a less than significant impact on wastewater treatment capacity.

d) Would the project generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact

Construction activities associated with the project would generate solid waste. Because waste generation would be temporary during construction and would not reduce available capacities at existing landfills, this amount is not anticipated to be in excess of State or local standards. Disposal of construction waste would comply with federal, state, and local statutes and regulations related to solid waste.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact

Construction activities associated with the project would generate solid waste requiring disposal at area landfills. Waste generated during project construction would be limited to vegetation debris, asphalt, and road subgrade. Waste generation would be temporary during construction and would not reduce available capacities at existing landfills. Disposal of construction waste would comply with federal, state, and local statutes and regulations related to solid waste.

4.19.1 TRPA Checklist – Utilities

Except for planned improvements, Would the proposed project result in a need for new systems, or substantial alterations to the following utilities:

TRPA Questions	Answers	Discussion
16a) Power or natural gas?	No	Refer to CEQA item a) above. The project area is currently served by power for existing electrical needs associated with lighting and traffic signals. The project proposes to upgrade the existing transformer and conduit/wiring to support new lighting proposed as part of the project and remove the signals. New proposed lighting would be energy efficient and would not require a new system or substantial alteration.
16b) Communication systems?	No	The project does not involve modification of or result in the need for new communication systems.
16c) Utilize additional water which amount would exceed the maximum permitted capacity of the service provider?	No	Refer to CEQA item b) above. The project may utilize a negligible amount of water during construction for dust suppression. There are no other water uses associated with the project.
16d) Utilize additional sewage treatment capacity which amount would exceed the maximum permitted capacity of the sewage treatment provider?	No	All construction groundwater would be handled per the approved Dewatering Plan and discharged as appropriate. This could result in a minor contribution to wastewater treatment or facilities that would not adversely affect the wastewater system capacity.

TRPA Questions	Answers	Discussion
16e) Storm water drainage?	No	The project proposes storm water drainage improvements to capture and allow for infiltration and treatment within the project area. The proposed features are anticipated to result in beneficial effects to water quality.
16f) Solid waste and disposal?	No	Refer to CEQA items d) and e) above.

4.20 WILDFIRE

4.20.1 Environmental Setting

The California Department of Forestry and Fire Protection (CAL FIRE) designates fire hazard severity zones for areas under State jurisdiction. For areas under local jurisdiction, CAL FIRE identifies areas that they consider to be Very High Fire Hazard Severity Zones (VHFHSZs); the local jurisdiction must choose whether to adopt the CAL FIRE recommendations. The project area is within a State-designated VHFHSZ and is designated as a Very High risk.

Amador-El Dorado Strategic Fire Plan

The project area lies within the boundaries of the Amador-El Dorado Strategic Fire Plan boundary (CAL FIRE 2014). The Amador-El Dorado Unit's Fire Management Plan assesses the fire potential within the unit and addresses fire safe planning and hazardous fuel reduction concerns of adjacent CAL FIRE Units, National Forests, and local collaborators. The plan is the foundation for planning, prioritizing, and funding the Unit's projects. The plan also outlines fire safety, evacuation planning, and hazardous fuels reduction through the Community Wildfire Protection Plan.

4.20.2 CEQA Checklist Summary

If located in or near State responsibility areas or lands classified as very high fire hazard severity zones:

CEQA Question	Impact Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, because of runoff, post-fire slope instability, or drainage changes?	No Impact

4.20.3 Answers to CEQA Checklist Questions

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact

The proposed project is within the Amador-El Dorado Strategic Fire Plan. The Plan also outlines fire safety, evacuation planning, and hazardous fuels reduction through the community wildfire protection plan. The proposed project would improve fire response capabilities as the roundabout has been designed to accommodate emergency vehicles and would improve traffic delay within the intersection of US 50 and Pioneer Trail once constructed. During construction, the project-level TMP would ensure emergency response and access is maintained during construction. Therefore, the project would not impair the adopted emergency response or evacuation plan and would have a less than significant impact.

b) Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact

The project is located within a relatively flat topographic area and would not construct on steep slopes or construct project features that would have the potential to exacerbate wildfire risk. The project would improve traffic delay and improve safety within the intersection. The project does not propose to construct or modify habitable structures within the project area that could expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; therefore, there would be no impact.

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

No Impact

The proposed project features are largely non-flammable street infrastructure improvements. Native revegetated areas would be affected by a fire coming through the area, but the project would not require the construction of ancillary facilities to protect or service the project such as fire breaks or new utility connections. Therefore, there would be no impact.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, because of runoff, post-fire slope instability, or drainage changes?

No Impact

The proposed project improves traffic delay and safety within the intersection of US 50 and Pioneer Trail. The project area consists of relatively flat terrain and includes permanent stabilization techniques such as revegetation, paving, and drainage features; therefore, the project would not expose people or structures to a significant risk, including downslope or downstream flooding or landslides, because of runoff, pot-fire slope stability or drainage changes.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

4.21.1 CEQA Checklist Summary

CEQA Question	Impact Determination
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number, or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	Less Than Significant Impact with Mitigation
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, or the effects of probable future projects.)	Less Than Significant Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact with Mitigation

4.21.2 Answers to CEQA Mandatory Findings of Significance Questions

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

Less Than Significant Impact with Mitigation

As discussed in Section 4.4, project construction could potentially impact protected avian species during breeding and nesting season; however, with implementation of **Mitigation Measure BIO-1** impacts would be reduced to less than significant levels by requiring pre-construction surveying of the project area and establishing appropriate buffers around nests, should they be encountered.

To protect against potential significant impacts to an identified historic resource, **Mitigation Measure CR-1** requires the County to implement the ESA Action Plan, and ensure the ESA is delineated on Contractor's project plans and delineated in the field by use of high visibility orange fencing to avoid project impacts from encroaching into this boundary. **Mitigation Measure CR-2** protects against potentially significant impacts to human remains, should they be encountered, and **Mitigation Measure TCR-1** provides for measures to comply with consultation requirements with Native American tribes to avoid significant impacts to tribal cultural resources.

Impacts to SEZ would be offset by implementing **Mitigation Measure GEO-1**, which requires the County to offset SEZ coverage and disturbance impacts at a 1.5:1 ratio by obtaining SEZ Restoration. Significant tree removal impacts would be avoided by implementing **Mitigation Measure FR-1**, which requires the County to coordinate with TRPA to avoid substantial tree removal impacts.

Finally, **Mitigation Measure HAZ-1** would protect workers and the public from risks associated with aerially deposited lead during construction.

No other potentially significant impacts to the environment, unique or rare species, habitats, or resources associated with the major periods of California history or prehistory were identified for the project.

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, or the effects of probable future projects.)

Less Than Significant Impact

The project proposes the construction of transportation corridor improvements to improve mobility and safety. Without implementation of the project there is a potential for continued traffic accidents, pedestrian and cyclist safety conflicts, and existing air quality and GHG degradation associated with vehicle idling at a congested intersection. The project would address traffic flow and safety issues by implementing a roundabout design feature, improve air quality and reduce GHG emissions by reducing vehicle idling, improve the pedestrian and bicycle transportation network, and provide for additional opportunities for stormwater infiltration and treatment within the project area. As mentioned in the Project

Description, the project is part of a larger TRPA sustainable recreation and transportation project, that once implemented would help attain the Air Quality threshold.

The project does not result in an increase in population or growth that would require new housing, facilities, or structures that would cause environmental degradation. The project would not result in an exceedance for any criteria air pollutant for which the region is in non-attainment; therefore, there would be no cumulatively considerable net increase in criteria pollutants. It is estimated the project would have a beneficial impact on criteria pollutants, GHG emissions, and water quality.

The project would be consistent with local, state, and federal regulations pertaining to the protection and mitigation of impacts to sensitive resources, and compliance with the terms of permitting conditions would ensure that adverse impacts to resources are mitigated and would not result in cumulative impacts. All identified potentially significant impacts from construction and implementation would be reduced to less than significant with the mitigation measures that have been included in the project.

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

Less Than Significant Impact with Mitigation

The project is a transportation safety improvement project that would increase safety for humans once constructed. As risks associated with aerially deposited lead are unknown at this time, **Mitigation Measure HAZ-1** would protect the health of the public and construction workers, and **Mitigation Measure NOI-1** will implement nighttime construction controls to reduce potential noise impacts to nearby residents during construction.

All potential impacts associated with construction and implementation of the project identified in this IS/IEC are either less than significant after mitigation or less than significant and do not require mitigation. Construction controls including compliance with permits and applicable local, state, and federal regulations and adopted mitigation measures would ensure a less than significant impacts on human beings.

4.21.1 TRPA Checklist – Findings of Significance

TRPA Questions	Answers	Discussion
21a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threated to eliminate a plant of 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 or Nevada history or prehistory?	No, with Mitigation	Refer to CEQA a) above. The project would implement measures to mitigate the potential for impacts to protected avian species, protected SEZ and aquatic resources, geology and soils, and hazardous materials.
21b) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive time, while long-term impacts would endure well into the future.)	No	Short-term construction-generated emissions are not projected to exceed applicable thresholds of significance due to the short duration required for construction and adherence to applicable County and TRPA requirements as discussed in the construction controls (Section 3.5.1, Air Quality). Long-term operational impacts of the project are anticipated to have a beneficial impact on air quality and GHG emissions by improving mobility and traffic flow within the intersection and would help attain the air quality TRPA threshold.

TRPA Questions	Answers	Discussion
21c) Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?)	No	Refer to discussion of CEQA item b). The project would be consistent with local, state, and federal regulations pertaining to the protection and mitigation of impacts to sensitive resources, and compliance with the terms of permitting conditions would ensure that adverse impacts to resources are mitigated and thus would not result in cumulative impacts.
21d) Does the project have environmental impacts which would cause substantial adverse effects on human being, either directly or indirectly?	No	Refer to CEQA item c). The project is a transportation safety improvement project that would increase safety for humans once constructed. All potential impacts associated with construction and implementation of the project identified in this IS are either less than significant after mitigation or less than significant and do not require mitigation.

Section 5 Mitigation Monitoring and Reporting Plan

CEQA requires review of any project that could have significant adverse effects on the environment. In 1988, CEQA was amended to require reporting on and monitoring of mitigation measures adopted as part of the environmental review process. This Mitigation Monitoring and Reporting Plan (MMRP) is designed to aid the County of El Dorado in their implementation and monitoring of measures proposed in the IS for the proposed project.

Table 6 provides details of the MMRP. The mitigation measures are taken from the IS and are assigned the same number as in the IS. The MMRP describes the actions that must take place to implement each mitigation measure, the timing of those actions, and the entities responsible for implementing and monitoring the actions.

Table 6. Mitigation and Monitoring Plan

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
BIO-1	**Pre-construction Avian Survey:** If any construction activities (e.g., grubbing or grading) are scheduled during the bird nesting season (typically defined by CDFW as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist, as determined by TRPA or CDFW, to conduct a pre-construction survey of the project area to include a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests appropriate to the conditions found, and locate any other special status species. The pre-construction survey shall be conducted no more than 10 days prior to the implementation of construction activities (including staging and equipment storage). Any special status species (including migratory birds) shall not be disturbed unless under the direction provided by a qualified biologist. If an active nest is found during construction, disturbance should not occur until young have fledged or under the direction provided by a qualified biologist.	County's Contractor	County of El Dorado	Prior to construction	Verified by: Date:
CR-1	**Environmentally Sensitive Area Action Plan:** The County shall implement the ESA Action Plan, and ensure the ESA is delineated on Contractor's project plans and delineated in the field by use of high visibility orange fencing to avoid project impacts from encroaching into this boundary.	County's Contractor	County of El Dorado	Establish boundary of ESA prior to construction. Monitor for avoidance of ESA throughout construction	Verified by: Date:

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
CR-2	**Implement CA Health and Safety Code Section 7050.5 Provisions for inadvertent human remain discoveries:** Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If the human remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.	County and County's Contractor	County of El Dorado	During construction	Verified by: Date:
FR-1	**Tree Removal Assessment:** Prior to final design development, the County shall coordinate with TRPA to determine if proposed tree removal qualifies as substantial removal. Should TRPA determine substantial removal would occur, as set forth in TRPA Code subparagraph 61.1.8, the County shall submit a harvest/tree removal plan prepared by a qualified forester and develop a conservation plan with area to be reforested/protected as required by TRPA. The plans, as approved by TRPA, shall become a part of the project and prescriptions contained in the plan shall be conditions of approval.	County of El Dorado	County of El Dorado	Prior to Construction	Verified by: Date:

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
GEO-1	**SEZ Restoration Credit for New Trail Disturbance:** The TRPA Code Regional Plan Update and Lahontan Basin Plan require new disturbance in SEZ meeting certain criteria to be offset with SEZ restoration at a 1:1.5 ratio. To mitigate the impact to SEZ, the County will utilize SEZ restoration credits from projects previously restored and banked.	County of El Dorado	TRPA and Lahontan RWQCB	County to coordinate with agencies prior to construction for approval of final mitigation amounts and use of identified banked credit	Verified by: Date:
HAZ-1	**Develop Lead Compliance Plan (LCP):** The Contractor shall develop and implement an LCP. The LCP shall outline requirements mandated in 8 CCR 1532.1, Lead, to ensure the risks of potential worker exposure to inorganic lead through inhalation of airborne dust or ingestion lead from soils contaminated with ADL are mitigated. Additional components of the LCP shall include: • Prior to performing any excavation work at the locations containing material classified as hazardous, employees and subcontractors shall complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified. • Contractor shall educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling, containment, and disposal procedures. • Contractor shall hold regular meetings to discuss and reinforce contaminated soil handling, containment, and disposal procedures (incorporate into regular safety meetings and tailgates).	County's Contractor	County of El Dorado	Develop prior to construction; implement throughout construction of project	Verified by: Date:

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
NOI-1	**Implement Noise-limiting Procedures:** • Project construction activities shall be limited to the hours between 8:00 a.m. and 6:30 p.m. Any exceptions to these hours shall be evaluated on a case-by-case basis and require prior approval by the County of El Dorado and TRPA to ensure the activity is not injurious or disturbing to the health, safety and general welfare of persons or property in the neighborhood, and the general welfare of the region, and the contractor will take reasonable steps to protect against such injury. • All internal combustion engines used for construction shall be fitted with manufacturer recommended mufflers. No equipment shall have an unmuffled exhaust. • Residents adjacent to proposed construction activities shall be given advance notice of project construction schedules and shall be notified that substantial temporary increases in local noise levels will occur during project construction. • To the greatest extent possible, nighttime construction work should be limited to the portion of the project site furthest from the residences. • Generators and compressors required during project construction shall be located as far as possible from existing residents and, if necessary, shielded from view of those residences by portable noise barriers.	County's Contractor and Construction Crews	County of El Dorado	During construction	Verified by: Date:

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
TCR-1	**Continue Consultation with Washoe Tribe:** Construction shall cease if a potential cultural resource is inadvertently discovered during construction, and the Washoe Tribe shall be contacted to continue consultation. Construction shall not resume until consultation is considered concluded when either of the following occurs, pursuant to PRC 21080.3.2(b): 1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.	County and County's Contractor	County of El Dorado	During construction	Verified by: Date:

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APPENDIX A

INTERSECTION CONTROL EVALUATION REPORT

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Pioneer Trail/US 50 Intersection Safety Improvement Project

Intersection Control Evaluation

Prepared for:

03-ED-50-71.48
03-EA2H610

El Dorado County Department of Transportation



Executive Summary

GHD has prepared this Intersection Control Evaluation (ICE) report for El Dorado County Department of Transportation and California Department of Transportation (Caltrans) District 3 utilizing methodologies consistent with the ICE process currently implemented by Caltrans. The analysis compares safety and operations associated with the following proposed improvement alternatives (that are consistent with the Caltrans Traffic Operations Policy Directive (TOPD) 13-02). The Build Alternatives analyzed at the signalized intersection of the United States Highway 50 (US 50) and Pioneer Trail in the unincorporated community of Meyers, California, near South Lake Tahoe are as follows:

- **Single-Lane Roundabout Alternative** - The roundabout would include one through lane and one right-turn bypass lane on the northbound approach, a left-turn lane and a right turn bypass lane on the westbound approach, and a through bypass lane and a shared through/left turn lane on the southbound approach; and
- **Modified Traffic Signal Alternative** - The Modified Traffic Signal Alternative would increase capacity at the intersection by providing additional lanes through the intersection and providing a free right-turn lane from US 50 onto Pioneer Trail. The northbound approach would provide two through lanes, and the existing right-turn pocket would be replaced with a free right-turn lane. Therefore, drivers traveling north (or eastbound) on US 50 to Pioneer Trail would no longer be required to stop at the traffic signal. The southbound approach would be widened to include two through lanes and would maintain one left-turn lane. The Pioneer Trail westbound approach would be widened from a single lane to include two left-turn lanes and a right-turn lane

Included in this report is a comparison of operational feasibility, safety benefits, right of way impacts, and cost estimates of two Build Alternatives and a No Build Alternative for the signalized intersection of the United States Highway 50 (US 50) and Pioneer Trail for current and future traffic conditions.

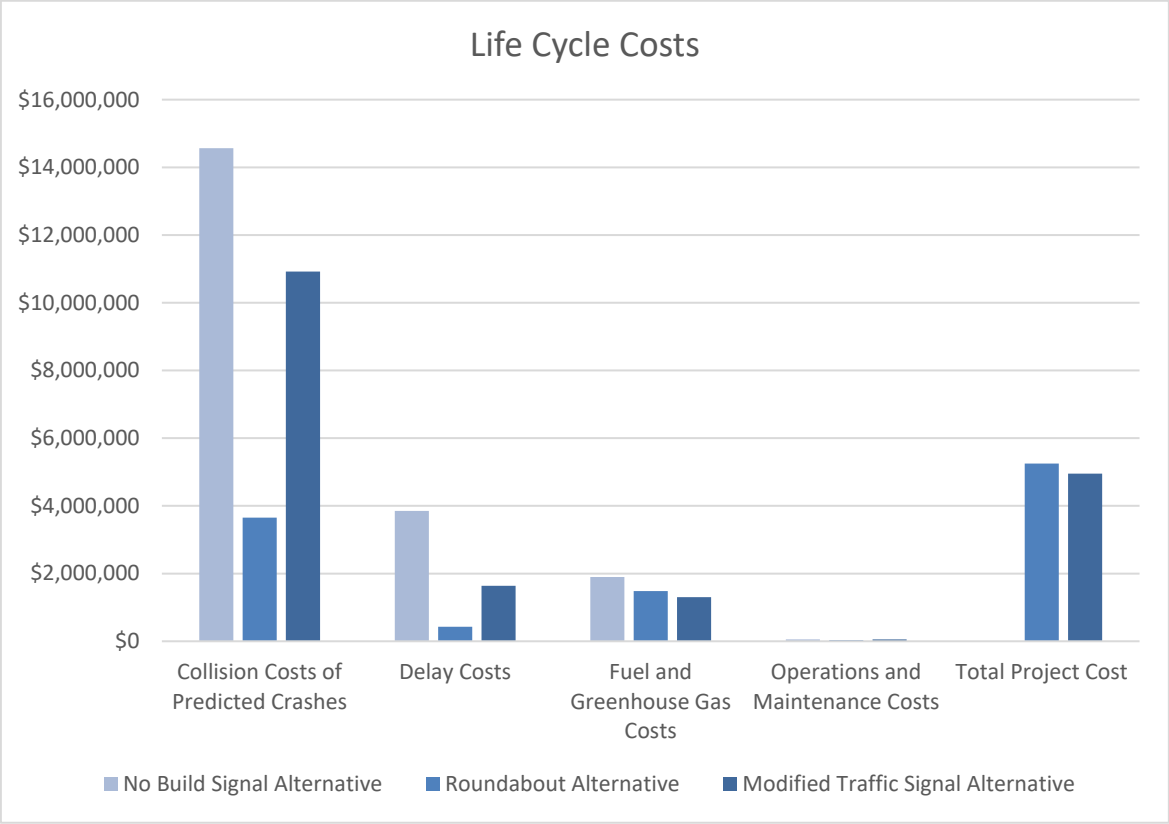
Based on the results of this analysis, the Roundabout Alternative has the highest return on investment for the study intersection. In addition, with a roundabout as the traffic control device, there is better efficiency and less delay, reduced conflict points and vehicular queue lengths. The Roundabout Alternative will also perform better when compared to the Modified Traffic Signal Alternative in terms of collision and mobility costs.

It is estimated the Roundabout Alternative will have slightly higher construction costs than the Modified Traffic Signal Alternative, but will provide overall better life cycle costs than both the No Build Alternative and Modified Traffic Signal Alternative. Figure EX-1 provides a summary of the expected life cycle costs for the No-Build and Build Alternatives over the project life.

The following El Dorado County Department of Transportation representatives were consulted during preparation of this ICE:

- John Kahling
- Donaldo Palaroan

Figure EX-1 Life Cycle Costs



As shown in Figure EX-1, the total life cycle costs of the No Build Alternative are generally higher than the Roundabout Alternative and the Modified Traffic Signal Alternative, with the exception of the total project cost. Also, the Modified Traffic Signal Alternative has higher collision and delay costs compared to the Roundabout Alternative. For additional detail regarding the project cost estimates and life cycle costs, refer to Appendix D (Cost Estimates and Life Cycle Costs).

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Appendix B Synchro and SIDRA LOS Worksheets
Appendix C Roundabout Performance Based Checks
Appendix D Cost Estimates and Life Cycle Costs

1. Introduction

This Intersection Control Evaluation (ICE) report has been prepared to present the results of the two Build Alternatives and the No Build Alternative. The report builds on the previous analysis in the August 2019 Traffic Operations Analysis Report (TOAR) and compares safety and operations associated with the Build Alternative improvements that are consistent with the Caltrans TOPD 13-02. The term “project,” as used in this report, will refer to the potential improvements at the US 50 and Pioneer Trail intersection. The project is located in El Dorado County within the unincorporated community of Meyers, California. Figure 1.1 presents the study area and the intersection analyzed within this report.

US 50 is a two-lane conventional highway in the project area with a posted speed limit of 40 miles per hour (mph) (reduced from 55 mph further north of the intersection). Pioneer Trail is a two-lane rural arterial with a posted speed limit of 40 mph in the project area. US 50 is a Terminal Access Route for Surface Transportation Assistance Act (STAA) trucks.

1.1 Need and Purpose

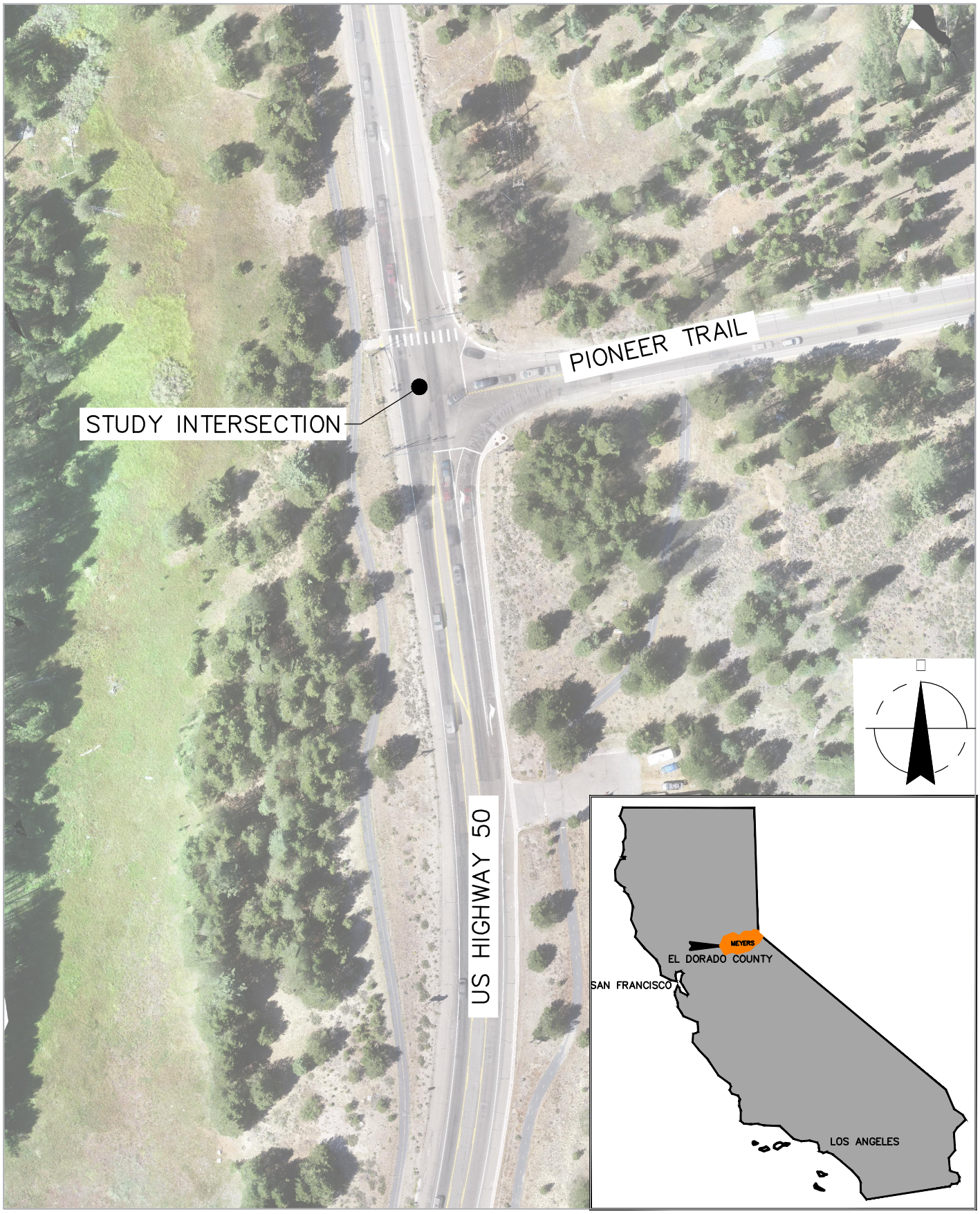
The purpose of this project is to improve safety at the US 50 and Pioneer Trail intersection for all modes of travel, improve traffic flow, reduce vehicle speeds through the intersection and into the Meyers area, reduce vehicle emissions associated with traffic delays, and improve access to nearby bikeways and trails.

Several prior plans and studies have identified a need for safety and transportation improvements at the study intersection. Three issues help define the need for improvements:

- High number of collisions;
- Disjointed pedestrian and bicycle facilities lack connectivity; and
- Unacceptable intersection level of service (LOS) during peak periods.

These issues correspond to three needs for this project, described in greater detail below:

- Enhance Safety;
- Provide Bicycle and Pedestrian Access; and
- Reducing speed and improving traffic flow through the corridor



El Dorado County Department of Transportation
US 50/Pioneer Trail Intersection Safety Improvement Project

Project Location Map

Project No. **11191432**
Report No. **R2610RPT002**
Date **January 16, 2020**

Figure 1.1

In 2012, the US 50 and Pioneer Trail intersection was identified as a high collision location.[1] It was determined that most collisions at the intersection were a result of drivers traveling at unsafe speeds in snowy or icy conditions. Most collisions occurred on the northbound right-turn movement onto Pioneer Trail. Collision data collected for the last three years showed that the most common collision type was broadside collisions.

When compared to traditional intersection controls, roundabouts have fewer conflict points for vehicles, bicyclists, and pedestrians. This directly correlates to improved safety. Roundabouts have the potential to reduce the number and severity of broadside collisions, reduce vehicle speeds, and reduce exposure for people bicycling and walking compared to traditional intersections. A study of 55 roundabouts in the United States concluded that roundabouts generally reduce crashes by 35 percent overall, reduce injury crashes by 76 percent, and reduce fatal crashes by 90 percent.[2]

At the study intersection, pedestrian crossings are currently only permitted in the crosswalk on the north leg of the intersection. All other pedestrian movements are prohibited. While this crosswalk connects to a shared use path on the west side of US 50, it does not connect to another pedestrian facility on the east side. A Class I shared use path parallel to US 50 on the west side does not connect to Class II bicycle lanes or the Class I shared use path on the east side of US 50. Accommodation for people walking, bicycling, and riding transit was identified as a need in the 2016 *Linking Tahoe: Active Transportation Plan* (amended in October 2018).

Both US 50 and Pioneer Trail are heavily traveled routes between Meyers and South Lake Tahoe. Traffic levels at this location are highly variable throughout the year, as the intersection serves tourist traffic to and from Lake Tahoe, Nevada, and a variety of other outdoor recreation opportunities. Traffic levels can vary significantly based on weather, economic conditions, special events, and other factors. The summer months typically have the highest traffic volumes due to the wide range of tourist attractions throughout the Tahoe Basin, but traffic congestion is typically worse in winter due to weather conditions, chain restrictions, and avalanche control operations.

LOS standards for the project are set by Caltrans, the Tahoe Regional Planning Agency (TRPA), and El Dorado County, as described further in Section 1.5 (Level of Service Criteria) of this report. The existing intersection currently operates at an unacceptable LOS during Sunday peak hours, with an LOS E or F between 10:45 AM and 2:00 PM. With no improvements, LOS at the intersection would continue to worsen and result in extensive delays and long queues. El Dorado County's 2018 *Meyers Area Plan* includes policy and implementation language that recommends reducing traffic speeds through Meyers without adversely affecting air quality and enhancing the intersection at US 50 and Pioneer Trail to improve LOS and traffic flow, reduce vehicle emissions, and improve bicycle and pedestrian safety.

[1] 2011 Annual Accident Location Survey (El Dorado County Department of Transportation, 2012)

[2] Roundabouts in the United States (National Cooperative Highway Research Program Report 572, 2007)

This report examines the traffic operations for Existing Conditions, No Build Alternative, and Build Alternatives for the Design Year (typically 20 years) conditions.

1.1.1 Project Funding

El Dorado County has identified several funding sources for the Pioneer Trail/U.S. 50 Intersection Safety Improvement Project in their *2019 Capital Improvement Program*. Also, the project is listed in the TRPA *Federal Transportation Improvement Program*. The project is expected to be funded through a combination of Highway Safety Improvement Program (HSIP) funds, TRPA/Air Quality funds, Regional Surface Transportation Program (RSTP) Exchange Funds through TRPA and Caltrans, Congestion Mitigation and Air Quality Program (CMAQ) funds, and other local funds.

1.1.2 Previous Studies

The project team was retained by El Dorado County to provide engineering as well as project approval and environmental document support for the project. In preparation for the Project Study Report/Project Development Support (PSR/PDS) document and subsequent Project Approval-Environmental Document (PA-ED) phase, a TOAR was prepared. This ICE report will build on the findings in the TOAR.

1.2 Data Collection and Analysis Time Periods

As described in the TOAR prepared for the project, the summer traffic (between the months of June and September) was found to be generally higher when compared to the other months. Because congestion in the project area is driven by weekend tourism rather than typical commute patterns, traffic operations have been quantified based on average Friday and Sunday peak hours, rather than the traditional AM and PM peak hours.

The TOAR included a summary of the three recent and relevant planning studies in the area that contain traffic volume information in the Meyers community. This information is provided in Appendix A (Traffic Volume Information from TOAR).

1.3 Level of Service Methodologies

The following section outlines the LOS methodologies and analysis parameters used to quantify traffic operations at the study location.

Levels of service (LOS) have been calculated for all intersection control types using the methods documented in the Transportation Research Board's *Highway Capacity Manual (HCM)* or SIDRA methodology. Traffic operations have been quantified through the determination of LOS. LOS is a qualitative measure of traffic operating conditions, whereby a letter grade A through F is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. For a signalized or roundabout intersection, a LOS determination is based on the weighted calculated averaged delay for all approaches and movements.

The methodology for the Roundabout Alternative is based on the 6th edition of the HCM, which draws from a Federal Highway Administration (FHWA) report on capacity modeling for

roundabouts.[3] At signalized intersections and roundabouts, the HCM specifies that LOS is based on the average control delay for the entire intersection. Table 1.1 displays the control delay range associated with each LOS grade.

Table 1.1 Intersection Level of Service Thresholds

Level of Service	Average Control Delay (Seconds/Vehicle)		Description
	Signalized	Roundabout	
A	<10.0	<10.0	Very low delay. At signalized intersections, most vehicles do not stop.
B	10.0 to 20.0	10.0 to 15.0	Generally good progression of vehicles. Slight delays.
C	20.1 to 35.0	15.1 to 25.0	Fair progression. At signalized intersections, increased number of stopped vehicles.
D	35.1 to 55.0	25.1 to 35.0	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.
E	55.1 to 80.0	35.1 to 50.0	Poor progression. High delays and frequent cycle failure.
F	>80.0	>50.0	Oversaturation. Forced flow. Extensive queuing.

Note: Highway Capacity Manual (Transportation Research Board 2016)

1.4 Technical Analysis Parameters

The software programs used to analyze the intersection include Synchro 10 for signalized intersection control, and SIDRA 8 for roundabouts. The Synchro and SIDRA outputs are included in Appendix B (Synchro and SIDRA LOS Worksheets).

The evaluation incorporated appropriate heavy vehicle adjustment factors, peak hour factors, and signal lost-time factors, and reported the resulting intersection delays and LOS as projected using HCM-based analysis methodologies. Lane widths for the Roundabout Alternative analysis were determined by measuring face of curb to face of curb.

The specific technical analysis parameters that have been used for this study are presented in Table 1.2. As mentioned in the TOAR for the project, these parameters were reviewed with Caltrans staff.

[3] Assessment of Roundabout Capacity Models for the Highway Capacity Manual: Volume 2 of Accelerating Roundabout Implementation in the United States (Report FHWA-SA-15-070)

Table 1.2 Intersection Technical Analysis Parameters

Technical Parameters[1]	Intersections
Grade[2]	Level
% Trucks[2]	Obtained from Caltrans US50/SR89 Study
Peak Hour Factor Design Hourly Volume	0.96 for Friday and 0.94 for Sunday based on 2017 count data
Minimum Signal Cycle Length[3]	120 seconds (based on field observations)
Lost Time per Critical Signal Phase	4 seconds (if applicable)
Left-Turn Critical Lane Volume[4]	1,900 vehicles per hour
Pedestrian Calls per Hour	5
SIDRA Environmental Factor	1.05 for Design Hourly Volumes
SIDRA Environmental Factor	1.00 for Sensitivity Analysis

Notes:
1. *Computer software defaults will be used for parameters not listed.*
2. *For Existing and Future conditions.*
3. *Will be optimized as appropriate.*
4. *A.k.a. Saturated Flow Rate.*

1.5 Level of Service Criteria

LOS standards for the project are set by Caltrans, TRPA, and El Dorado County. The applicable LOS guidelines are discussed below.

Caltrans identified standards for the project area in the *US 50 Transportation Concept Report/Corridor System Management Plan* (TCR/CSMP) in 2014. The minimum acceptable LOS for this segment of US 50 is LOS D.

TRPA identifies LOS thresholds in its *Linking Tahoe: Regional Transportation Plan* (RTP) in 2017. The acceptable LOS for Pioneer Trail is D, though the policy notes LOS E may be acceptable during peak periods in urban areas but not to exceed four hours per day. The policy also states, “These vehicle LOS standards may be exceeded when provisions for multi-modal amenities and/or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users at a level that is proportional to the project-generated traffic in relation to overall traffic conditions on affected roadways.”

The *El Dorado County General Plan Transportation and Circulation Element* includes Policy TC-Xd that states, “Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions.”

Based on the applicable standards discussed above, LOS D is the standard applied to this project. The intersection is also allowed to operate at LOS E for fewer than four hours per day during peak periods.

2. Existing Conditions

This section presents the analysis of current operations at the study location and establishes the baseline traffic conditions.

2.1 Multimodal Facilities

Currently, two Class I shared use paths provide bicycling and walking facilities in the project area. On the west side of US 50, a shared use path parallels the highway from State Route (SR) 89 past the project area to Sawmill Road. On the east side of US 50, a shared use path parallels the highway from SR 89/Luther Pass Road and terminates at Pioneer Trail, approximately 150 feet east of the intersection. No sidewalks exist at the intersection; the only pedestrian access is provided by the shared use path on the west side of US 50. Faded Class II bicycle markings exist on Pioneer Trail, and a southbound bicycle lane is marked on US 50 beginning at the Pioneer Trail intersection. The Class I shared use path parallel to US 50 on the west side does not connect to Class II bicycle lanes or the Class I shared use path on the east side of US 50.

At the US 50 and Pioneer Trail intersection, pedestrian crossings are only permitted in the crosswalk on the north leg of the intersection. All other pedestrian movements are prohibited. While this crosswalk connects to a shared use path on the west side of US 50, it does not connect to the pedestrian facility on the east side.

2.2 Intersection Operations

Traffic volumes at the US 50 and Pioneer Trail intersection, and in the Meyers community in general, are highly variable throughout the year since the intersection serves tourist traffic to and from Lake Tahoe, the State of Nevada, and a variety of other year-round outdoor recreation activities. Congestion in the project area is driven by weekend tourism rather than typical commute patterns, and therefore, traffic operations have been quantified based on average Friday and Sunday peak hours rather than the traditional AM and PM peak hours.

As described in the TOAR, the traffic volumes identified in the *Meyers Intersection Improvements at United States Highway (US) 50 and State Route (SR) 89 Initial Study with Negative Declaration* (provided in Appendix A [Traffic Volume Information from TOAR]) were used to analyze the LOS under existing conditions without and with the proposed intersection improvements. Caltrans staff concurred with this approach.

Based on this traffic volume data, the intersection generally operates at LOS D on Fridays and LOS E on Sundays. The intersection also experiences queues over 40 vehicles along US 50 traveling north (eastbound) on Fridays and Sundays as well as along Pioneer Trail traveling west on Sundays.

2.3 Safety Analysis

As summarized in the TOAR prepared for the project, the study intersection had the second highest number of collisions in the Meyers area[4], with 34 reported collisions between 2007 and 2015. Of these, six collisions resulted in injuries and 28 resulted in property damage only. No fatal collisions were reported within the intersection, however, one fatality was reported approximately 400 feet south of the intersection. According to the Statewide Integrated Traffic Records System (SWITRS) the fatal collision occurred in 2012 (Case ID Number 5638393). The collision involved a vehicle and a pedestrian. The pedestrian was crossing US 50 in the dark and SWITRS records indicate that alcohol was involved.

More recent collision data was collected from the SWITRS for the study intersection. To capture the collision patterns and any trends within the study area, the most recent three years were obtained from SWITRS (January 1, 2016 – December 31, 2018).

2.3.1 US 50 and Pioneer Trail Intersection Collisions

Table 2.1 displays the intersection collisions for the past three years from SWITRS. There was a total of 14 intersection collisions within the influence area of the intersection.

Table 2.1 US 50 and Pioneer Trail Intersection Collisions (2016-2018)

Intersection	Year			Total Collisions
	2016	2017	2018	
US 50 and Pioneer Trail	5	4	5	14

As presented in Tables 2.2 and 2.3, the collision severity, type, and primary collision factor are displayed for US 50 and Pioneer Trail intersection for 2016-2018. There were more Property Damage Only (PDO) collisions than injury collisions (12 vs. 2) and the most common collision type was broadside collisions (7). Broadside collisions are likely occurring due to the high free flow speed and limited gaps across US 50. In addition, the most common cited primary collision factor violation was unsafe speed (12).

Table 2.2 US 50 and Pioneer Trail Intersection – Collision Severity/Type

Collision Severity			Collision Type				
Injury (Other Visible)	Injury (Complaint of Pain)	PDO	Head-On	Sideswipe	Rear End	Broadside	Hit Object
1	1	12	1	3	2	7	1

Table 2.3 US 50 and Pioneer Trail – Primary Collision Factor

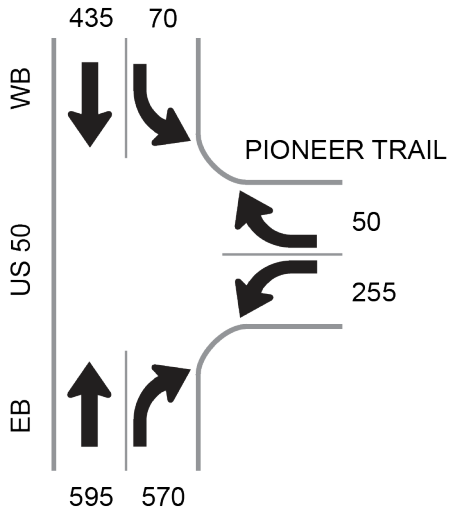
Intersection	Primary Collision Factor		
	DUI	Unsafe Speed	Wrong Side of Road
US 50 and Pioneer Trail	1	12	1

3. Design Year Forecasts

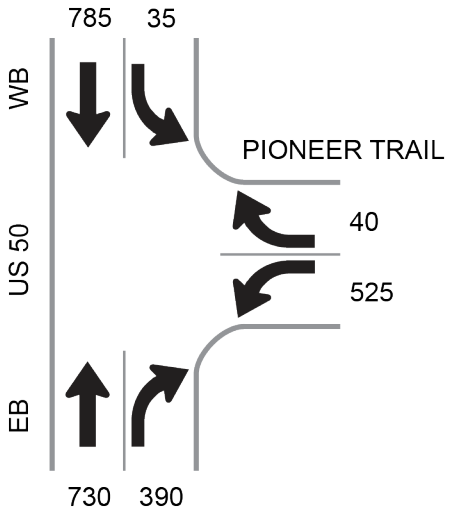
The TOAR for the project established the methodology to develop the traffic forecast for the Design Year at the study intersection. As previously stated, all project alternatives were evaluated for design hourly volumes identified in the *Meyers Intersection Improvements at United States Highway (US) 50 and State Route (SR) 89 Initial Study with Negative Declaration* (provided in Appendix A [Traffic Volume Information from TOAR]). Figure 3.1 illustrates the Design Year traffic volumes.

Figure 3.1 Design Year Traffic Volumes

Friday Summer Peak Hour Volumes



Sunday Summer Peak Hour Volumes



[4] 2016 Meyers Road Safety Audit

3.1 No Build Operational Analysis

Assuming the same lane geometries and traffic control at the study intersection, the No Build Alternative was analyzed using the Design Year traffic volumes. As presented in Table 3.1, the LOS degrades to an overall LOS D on Fridays and LOS E on Sundays with the increase in traffic volumes and no improvements. See Appendix B (Synchro and SIDRA LOS Worksheets) for additional details.

Table 3.1 also shows the 95th percentile queues for the US 50 and Pioneer Trail intersection for Design Year conditions. The longest queue length is on Sunday for eastbound US 50 traffic traveling north.

Table 3.1 Design Hourly Intersection Traffic Operations
No Build Conditions – Summer Weekend

	Friday			Sunday		
	Delay	LOS	Queue	Delay	LOS	Queue
North/Eastbound US 50	62.5	E	1,118	103.6	F	1,875
South/Westbound US 50	15.1	B	279	20.1	C	950
West/Southbound Pioneer Trail	45.6	D	361	66.8	E	1,025
Overall	**47.8**	**D**	**-**	**68.0**	**E**	**-**

Note: Analysis is based on the methodology and procedures in the HCM. Average delay is reported in seconds per vehicle. For signalized intersections, LOS is based on the average control delay for all approaches. Queue is reported in feet for the 95th percentile.

4. Build Conditions

4.1 Roundabout Alternative

The Roundabout Alternative would construct a three-legged roundabout at the US 50 and Pioneer Trail intersection. The roundabout would provide an inscribed circle diameter of 140 feet with one through lane and one right-turn bypass lane on the northbound approach, a left-turn lane and a right turn bypass lane on the westbound approach, and a through bypass lane and a shared through/left turn lane on the southbound approach. Figure 4.1 provides a visual of the proposed Roundabout Alternative design.

High-visibility marked crosswalks would be provided on all three legs, including refuge areas in the splitter islands that would allow people walking or bicycling to cross one lane of traffic at a time. Crosswalks would be set back at least one car-length from the roundabout, allowing drivers to yield to pedestrians and move past the crosswalk before waiting for a gap in traffic and entering the roundabout. Separating the crosswalk from the roundabout entry in this way allows drivers to focus their attention on one potential conflict at a time.

The Roundabout Alternative would include bypass lanes with splitter islands designed to reduce excessive delay and queueing, to avoid two-lane entrances for collision reduction, and to increase pedestrian safety by providing refuge when crossing.

Roundabout Alternative

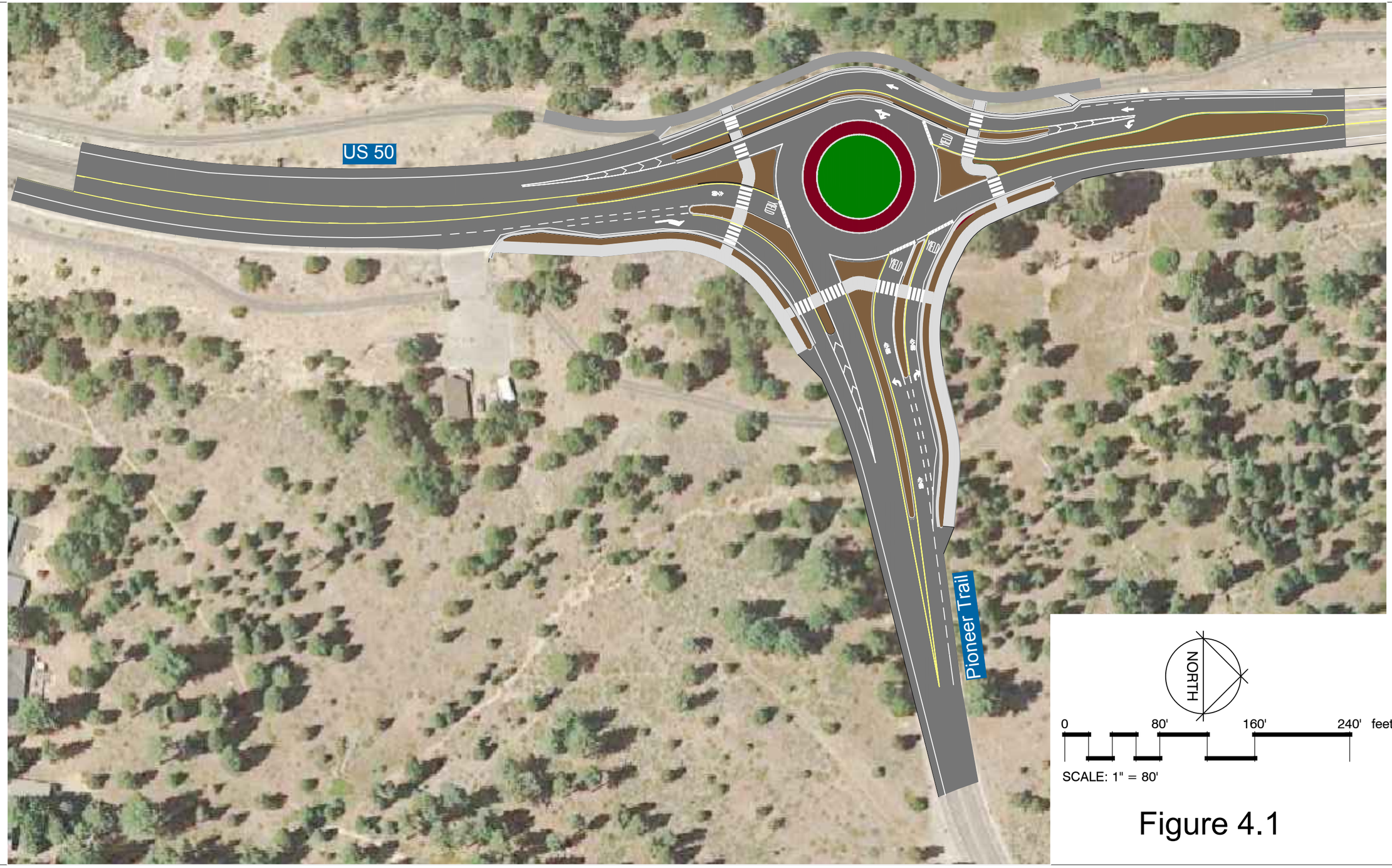


Figure 4.1

US 50 / Pioneer Trail Intersection Improvement Project

Meyers, California

GHD Inc.
943 Reserve Drive
Roseville, CA 95678 USA
T 1 916 782 8688 W www.ghd.com

July 18, 2019
2610EX002.dwg

Sidewalks would be provided on the northeast and southeast corners of the intersection, and connections would be provided from crosswalks to the Class I shared use path on the west side of US 50. Directional bike ramps would provide bicyclists traveling in the roadway with access to the shared use path or sidewalks if they prefer to navigate the intersection using the crosswalks or path. A proposed connection to the shared use path on the east side of US 50 would provide a direct connection for people walking or bicycling to the crosswalks on the south and east legs of the intersection.

4.1.1 Roundabout Alternative Operational Analysis

Table 4.1 presents the peak hour intersection LOS for the Roundabout Alternative. LOS and delay were projected with SIDRA 8 software for the design hourly traffic volumes with the lane geometrics of the Roundabout Alternative.

Table 4.1 Design Hourly Intersection Traffic Operations Roundabout Conditions

	Friday			Sunday		
	Delay	LOS	Queue	Delay	LOS	Queue
North/Eastbound US 50	3.9	A	76	4.0	A	100
South/Westbound US 50	4.9	A	24	5.0	A	54
West/Southbound Pioneer Trail	12.0	B	43	16.6	B	152
Overall LOS	**5.4**	**A**	**-**	**7.2**	**A**	**-**

Note: Analysis is based on the methodology and procedures in the HCM. Average delay is reported in seconds per vehicle. For roundabout intersections, LOS is based on the average control delay for all approaches. Queue is reported in feet for the 95th percentile.

The intersection is projected to operate at an overall acceptable LOS A with improvements identified in the Roundabout Alternative. The intersection is projected to experience queues less than or equal to 6 vehicles for either time period.

4.2 Modified Traffic Signal Alternative

The Modified Traffic Signal Alternative would increase capacity at the intersection by providing additional lanes through the intersection and providing a free right-turn lane from US 50 onto Pioneer Trail. The northbound approach would provide two through lanes, and the existing right-turn pocket would be replaced with a free right-turn lane. Drivers traveling north (or eastbound) on US 50 to Pioneer Trail would no longer be required to stop at the traffic signal. The southbound approach would be widened to include two through lanes and would maintain one left-turn lane. The Pioneer Trail westbound approach would be widened from a single lane to include two left-turn lanes and a right-turn lane. Figure 4.2 provides a visual of the proposed Modified Traffic Signal Alternative design.

Modified Traffic Signal Alternative



Figure 4.2

US 50 / Pioneer Trail Intersection Improvement Project

Meyers, California

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Roseville, CA 95678 USA
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July 18, 2019
2610EX003.dwg

Marked transverse crosswalks would be provided across the north and east legs of the intersection as well as across the free right-turn lane on the southeast corner. A crosswalk on the south leg of the intersection would require a pedestrian only phase resulting in increased green/cycle time and intersection delay. For this reason, the project team agreed to eliminate the crosswalk on the south leg as it would compromise the overall intersection operations.

Sidewalks would be provided on the northeast and southeast corners of the intersection, and connections would be provided from the crosswalks to the Class I shared use path on the west side of US 50. Directional ramps would provide southbound bicyclists traveling in the roadway on US 50 with access to the shared use path or sidewalks if they prefer to navigate the intersection using the crosswalks or path. A proposed connection of the shared use path on the east side of US 50 would provide a direct connection for people walking or bicycling to the crosswalks on the south and east legs of the intersection.

4.2.1 Modified Traffic Signal Alternative

Table 4.2 presents peak hour intersection LOS for the Modified Traffic Signal Alternative. LOS and delay were projected for the design hourly traffic volumes with the lane geometrics of the Modified Traffic Signal Alternative. Projections were developed using Synchro 10 software based on the HCM.

Table 4.2 Design Hourly Intersection Traffic Operations – Modified Traffic Signal Alternative

	Friday			Sunday		
	Delay	LOS	Queue	Delay	LOS	Queue
North/Eastbound US 50	12.4	B	208	16.5	B	491
South/Westbound US 50	12.3	B	218	17.7	B	331
West/Southbound Pioneer Trail	23.0	C	173	32.0	C	311
Overall LOS	**14.0**	**B**	**-**	**20.5**	**C**	**-**

Note: Analysis is based on the methodology and procedures in the HCM. Average delay is reported in seconds per vehicle. For signalized intersections, LOS is based on the average control delay for all approaches. Queue is reported in feet for the 95th percentile.

The intersection is projected to operate at acceptable LOS C or better with the improvements identified in the Modified Traffic Signal Alternative. The intersection is projected to experience queues less than or equal to 8 vehicles for the Friday peak period and 20 vehicles during the Sunday peak period.

5. Roundabout Performance Checks

Based on the traffic analysis, the Roundabout Alternative is further evaluated for performance based checks. The following design criteria were used to analyze the geometrics and safety performance of the proposed Roundabout Alternative:

- Criteria and methodologies to be consistent with Caltrans DIB 80-01, Caltrans *Highway Design Manual* (HDM), and Report 672 of the National Cooperative Highway Research

Program (NCHRP) titled *Roundabouts: An Informational Guide* (Second Edition). This document supersedes the original roundabout guide published by the Federal Highway Administration (FHWA) in 2000.

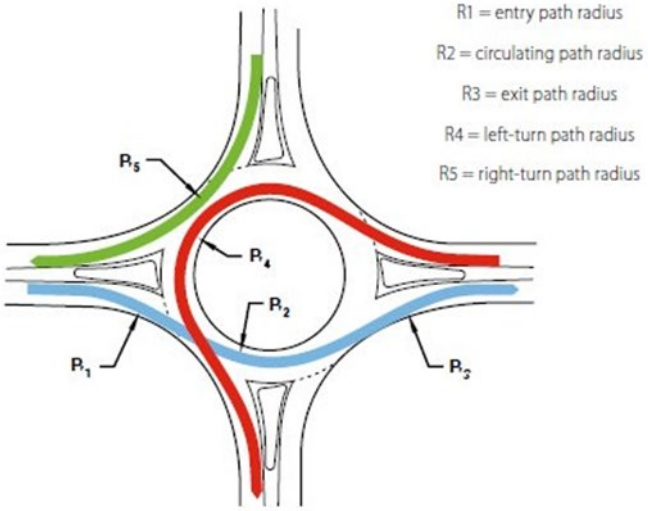
- The "STAA-Standard" design vehicle from the Caltrans HDM, 6th Edition (update September 2014) shall be accommodated on all movements from and to US 50.
- Fast path entry speeds on single-lane approaches should be 25 mph or less.
- Minimum stopping sight distance for posted speed limits should be provided for vehicles approaching roundabout entrances and pedestrian crosswalks.
- View angles for all legs of the roundabout should be no more than 15 degrees.
- Entry angles for all legs of the roundabout should be between 20 and 40 degrees.

5.1 Fastest Path and Vehicle Speed Checks

The "Fastest Path" represents the path that the most aggressive drivers could take through the roundabout and assumes no other traffic to be within the intersection. NCHRP Report 672 indicates that the recommended maximum vehicle entry speeds along the fastest path should be less than 25 mph at urban single-lane roundabouts, and less than 30 mph at urban multi-lane roundabouts. NCHRP Report 672 also indicates that the differential speed between consecutive or conflicting projected fast path speeds should be less than 15 mph.

Fast path speeds are determined for five locations per approach. These include entry speeds (referred to as V1); through movement circulating speeds (V2); exiting speeds (V3); left turn movement circulating speeds (V4); and right turn speeds (V5). A diagram of the described locations is shown in Figure 5.1.

Figure 5.1 Fast Path Critical Speed Locations



Fastest-path speeds for the Roundabout Alternative for vehicles entering, circulating, exiting, left, and right turns are provided in Table 5.1 and further performance based checks and exhibits are

provided in Appendix C (Roundabout Performance Based Checks). The fast path speeds for entering traffic are less than 25 mph, which is consistent with the NCHRP Report 672 recommendation for single-lane roundabouts.

Table 5.1 Fast Path Checks for Roundabout Alternative

FAST PATH SPEED (MPH)					
Movement	**Northbound US 50 (N#)**	**Northbound US 50 Right Bypass (N#)**	**Southbound US 50(S#)**	**Southbound US 50 Bypass(S#)**	**Westbound Pioneer Trail (W#)**
Entering (V1)	24.5	N/A	24.7	24.5	24.2
Circulating (V2)	18.2	N/A	19.7	20.0	N/A
Exiting (V3)	29.9	N/A	31.1	29.8	N/A
Left Turn (V4)	N/A	N/A	15.0	N/A	15.0
Right Turn (V5)	N/A	20.9	N/A	N/A	24.5

Notes:
All values are in miles per hour.
V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672.
V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.
As acceleration potential of vehicle determines actual exiting speed, V3 presented is a conservative estimate.
N/A = Fastest path speed does not exist for this approach.
2% cross-slope assumed for determining fastest path.

6. Alternatives Comparison

For the alternatives comparison, the two Build Alternatives (Roundabout and Modified Traffic Signal) were compared to the No Build Alternative in the Design Year. This comparison analysis will consist of LOS and queue graphics, planning level cost estimates, and life cycle costs.

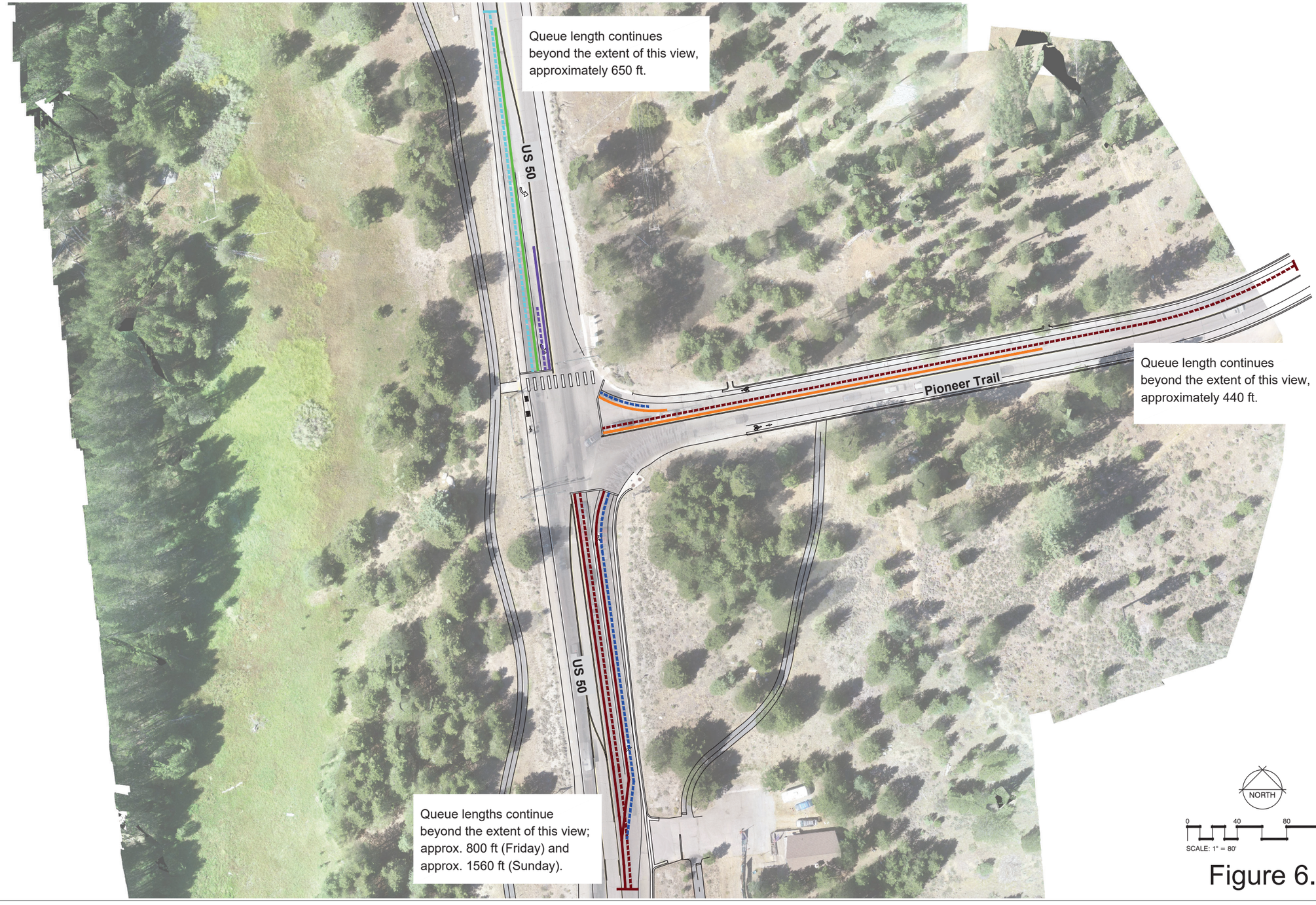
6.1 Level of Service and Queuing

Figure 6.1 illustrates the No Build Alternative LOS and 95th percentile queue lengths and LOS in the project study area. This figure shows the extensive queues for all directions of travel. With no improvements, traffic will continue to queue, causing delays and limiting access to private properties/businesses in the area.

Figure 6.2 illustrates the LOS and 95th percentile queues for both Build Alternatives. The Roundabout Alternative is expected to have better LOS and shorter queue lengths when compared to the Modified Traffic Signal Alternative.

95th Percentile Queue Lengths - No Build Alternative

No Build Alternative



LEGEND

FRIDAY	SUNDAY
- LOS A	- LOS A
- LOS B	- LOS B
- LOS C	- LOS C
- LOS D	- LOS D
- LOS E	- LOS E
- LOS F	- LOS F

NORTH

0 40 80 120 feet

SCALE: 1" = 80'

Figure 6.1

PIONEER TRAIL / US 50 INTERSECTION SAFETY IMPROVEMENT

Meyers, California

GHD

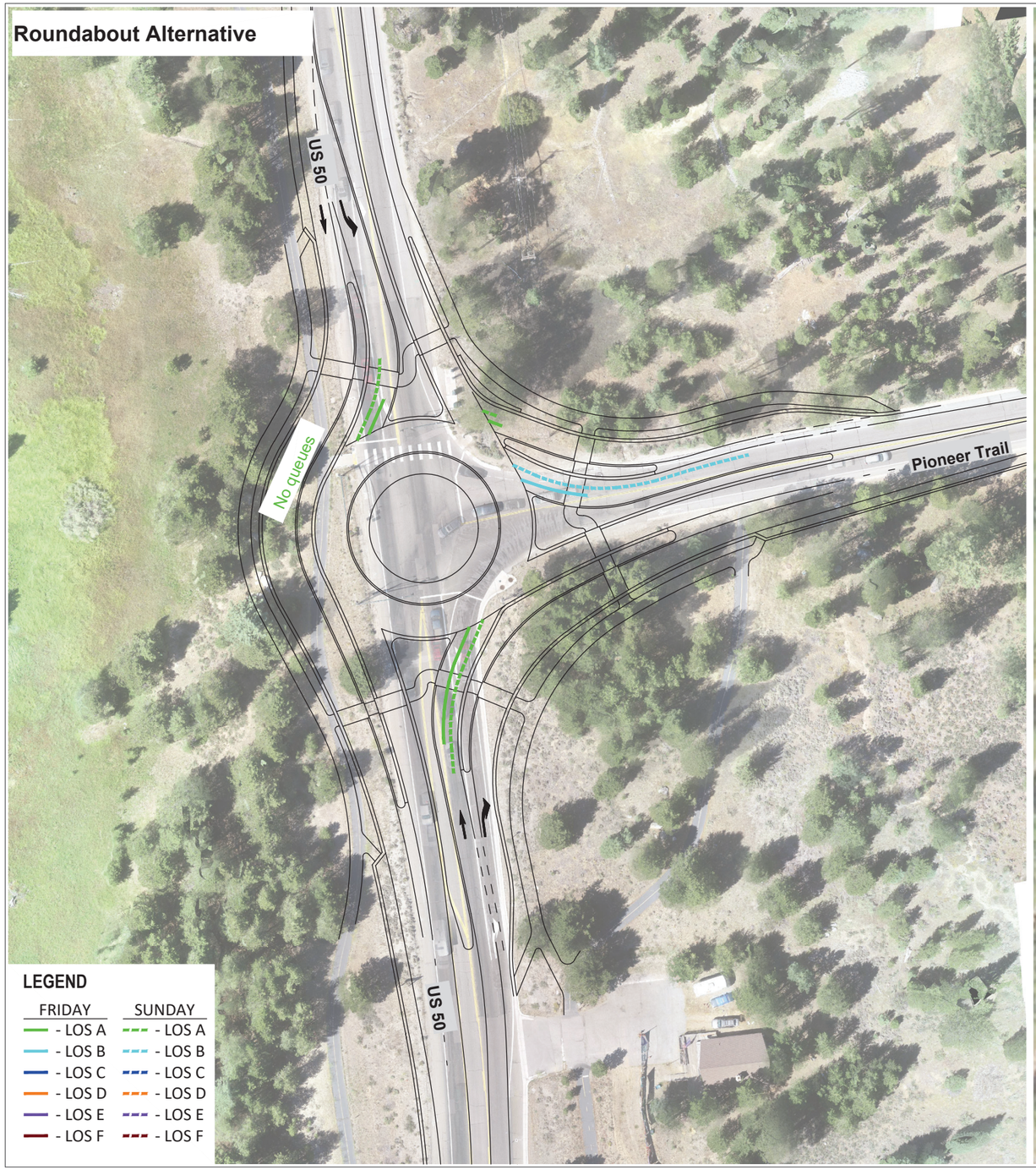
943 Reserve Drive, Suite 100
Roseville, CA 95678 USA
T 1 916 782 8688 **W** www.ghd.com

GHD Inc.

January 2020
2610EX006.dwg

95th Percentile Queue Lengths - Roundabout and Modified Traffic Signal Alternatives

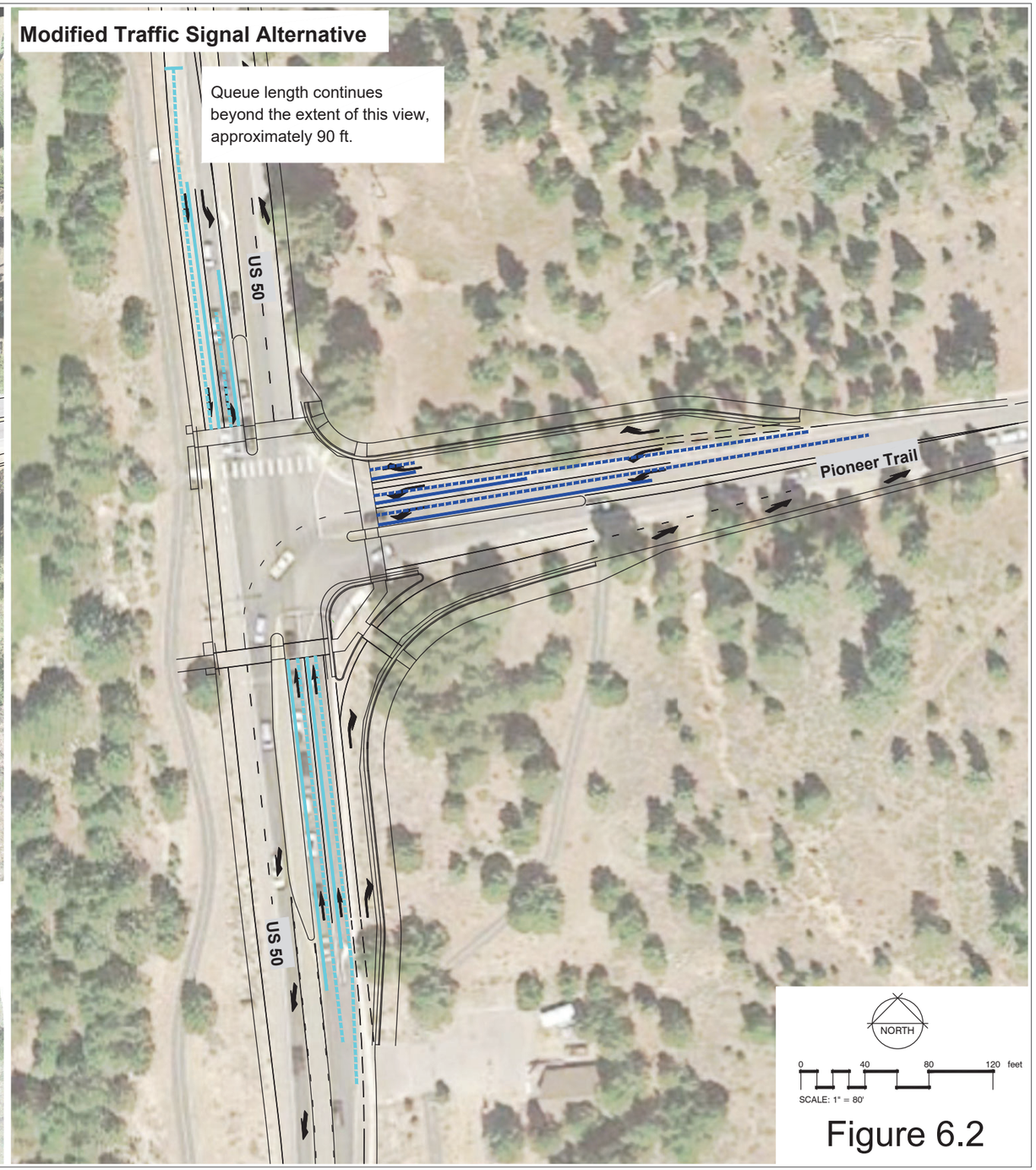
Roundabout Alternative



LEGEND

FRIDAY	SUNDAY
- LOS A	- LOS A
- LOS B	- LOS B
- LOS C	- LOS C
- LOS D	- LOS D
- LOS E	- LOS E
- LOS F	- LOS F

Modified Traffic Signal Alternative



NORTH

0 40 80 120 feet

SCALE: 1" = 80'

Figure 6.2

PIONEER TRAIL / US 50 INTERSECTION SAFETY IMPROVEMENT

Meyers, California

GHD Inc.

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Roseville, CA 95678 USA
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January 2020
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6.2 Preliminary Cost Estimate

The Roundabout Alternative is estimated to cost $5,246,000 and the Modified Traffic Signal Alternative is estimated to cost $4,950,000 in the current year. Detailed cost estimates are provided in Appendix D (Cost Estimates and Life Cycle Costs).

6.3 Life-Cycle Costs

In evaluating the life-cycle costs of the project, a 20 year service life was used in comparing the No-Build and Build Alternatives (Roundabout and Modified Traffic Signal). In following Caltrans methodology and transportation economics, Caltrans Vehicle Operations Cost Parameters (2016 Current Dollar Value), the vehicle operations costs, collision costs, and emission cost parameters (CA rural area) were used. As presented in Table 6.1, the No Build Alternative is expected to have life-cycle costs of $20,366,000. The higher cost is mainly attributed to the predicted collision costs of $14,564,000. Table 6.2 shows both Build Alternatives have lower life cycle costs than the No Build Alternative, and the Roundabout Alternative is lower than the Modified Traffic Signal Alternative. This is primarily due to the predicted collision costs. The detailed life cycle costs are provided in Appendix D (Cost Estimates and Life Cycle Costs).

Table 6.1 Life Cycle Costs – No Build Alternative

Safety and Delay Costs	
Collision Costs of Predicted Crashes	$14,564,000
Delay Costs	$3,850,000
Fuel and Greenhouse Gas Emission Costs	$1,897,000
Project Costs (Design, Construction, and Maintenance)	
Operations & Maintenance Costs	$54,000
Project Costs (including soft costs)	$0
TOTAL LIFE CYCLE COSTS FOR NO BUILD ALTERNATIVE	**$20,365,000**

Table 6.2 Life Cycle Costs – Build Alternatives

Safety and Delay Costs*		
	Roundabout Alternative	**Modified Traffic Signal Alternative**
Collision Costs of Predicted Crashes	$3,652,000	$10,923,000
Delay Costs	$430,000	$1,640,000
Fuel and Greenhouse Gas Emission Costs	$1,484,000	$1,302,000
Project Costs (Design, Construction, and Maintenance)*		
	Roundabout Alternative	**Modified Traffic Signal Alternative**
Operations & Maintenance Costs	$31,000	$54,000
Project Costs (including soft costs)	$5,250,000	$4,950,000
TOTAL LIFE CYCLE COSTS FOR BUILD ALTERNATIVES	**$10,847,000**	**$18,869,000**

7. Conclusions

With no improvements to the US 50 and Pioneer Trail intersection, the delay will increase and the intersection will reach an overall LOS D on Fridays and LOS E on Sundays by the Design Year. Excessive queuing will continue in all directions of travel. Both Build Alternatives would improve the intersection and provide acceptable LOS and reduced queue lengths. However, compared to the Modified Traffic Signal Alternative that would provide LOS C operations, the Roundabout Alternative would provide LOS A operations and shorter queue lengths. In addition, over the design life of the project, the life cycle costs for the Roundabout Alternative would be more favorable than the Modified Traffic Signal Alternative.



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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Appendix A. Traffic Volume Information from TOAR

Existing Traffic Conditions

Existing Traffic Volumes

Traffic volumes at the study intersection and in the Meyers community in general are highly variable throughout the year, as the intersection serves tourist traffic to and from Lake Tahoe, the State of Nevada, and a variety of other year-round outdoor recreation activities. Based on discussion with the project team, the summer traffic (between the months of June and September) was found to be generally higher when compared to the other months.

This section reviews three recent and relevant planning studies in the area that contain traffic volume information in the Meyers community. An overview of the count data collected in these studies is presented in Table 5.1.

Table 5.1 Comparison of Traffic Counts Collected on US 50 between SR 89 and Pioneer Trail

	Count Year		
	2010	2016	2017
Agency	El Dorado County	Caltrans	El Dorado County
Number of Data points	1 day	12 weekends (over 3 months)a	6 days (2 weekends)
Location	US 50 between SR 89 and Pioneer Trail	US 50 between SR 89 and Pioneer Trail	US 50 between SR 89 and Pioneer Trail

Traffic Operations Analysis for the US Highway 50/Pioneer Trail Intersection Safety Improvement Project (El Dorado County, December 2017). This study cites two time frames (2010 and 2017) when counts were conducted at the study intersection during the summer months. One count was conducted in 2010, and six counts were conducted in 2017. Additionally, this study extrapolated 2010 traffic with a 0.6% growth increase to derive 2016 counts. As the 2016 data is derived and not based actual counts, these numbers are not included in Table 5.2, which presents the traffic volumes.

Table 5.2 Traffic Patterns on US 50 between SR 89 and Pioneer Trail (December 2017 Study)

	Aug 2010 Sunday	Aug 2017 Friday	Aug 2017 Saturday	Aug 2017 Sunday	Oct 2017 Friday	Oct 2017 Saturday	Oct 2017 Sunday
US 50 (EB)	1,243	1,075	1,130	872	1,115	796	637
US 50 (WB)	1,278	726	730	1,234	653	883	1,317
Total	**2,521**	**1,801**	**1,860**	**2,106**	**1,768**	**1,679**	**1,954**

Meyers Intersection Improvements at United States Highway (US) 50 and State Route (SR) 89 Initial Study with Negative Declaration (Caltrans, December 2016). This study utilized average summer traffic volumes representative of a three month summer period. Table 5.3 presents the average summer traffic volumes for 2016.

Table 5.3 Traffic Patterns on US 50 between SR 89 and Pioneer Trail (December 2016 Study)

	Average Summer 2016	
	Friday	Sunday
US 50 (EB)	1,161	1,119
US 50 (WB)	688	1,308
Total	**1,849**	**2,427**

Design Hourly Volumes

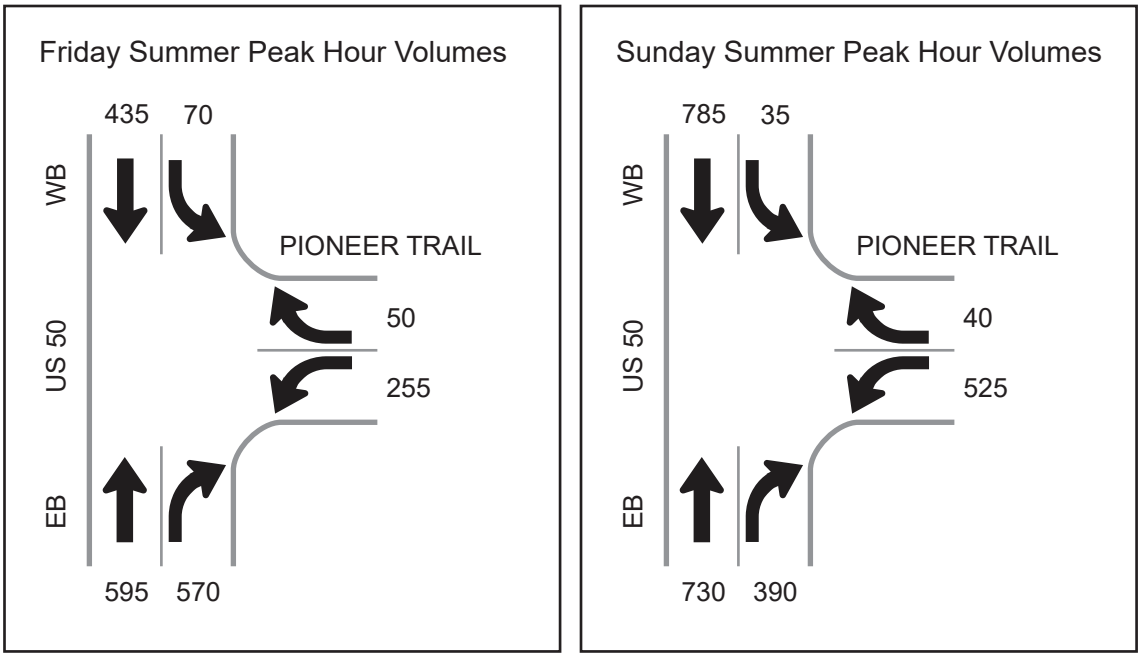
Because the 2016 traffic volumes are based on three months of counts, they are more likely to represent average traffic volumes for a summer weekend and less likely to reflect anomalies in traffic patterns. A comparison of Table 5.2 and Table 5.3 indicates that the average Friday and Sunday summer traffic volumes were greater in the 2016 study than in 2017. Using the higher volumes from 2016 represents a more conservative approach to this analysis of alternatives, as it accounts for increased traffic under current conditions as well as for the sensitivity analysis.

Furthermore, the traffic volumes from the 2016 study were used in the recently completed *Initial Study with Negative Declaration* for the US 50 and SR 89 roundabout project, which is currently under construction. Based on input from the project development team, which includes staff from TRPA, Caltrans, El Dorado County, and consultants, traffic volumes from the 2016 study have been used as the design hourly volumes in the preparation of this Traffic Operations Analysis Report. These design hourly volumes are shown in Appendix A.

Turning movements at the intersection were derived from the traffic split obtained from the 2017 counts. A review of these counts and turning movements revealed the following patterns:

- North/Eastbound US 50 traffic on a typical Friday as it approaches the intersection breaks up into two movements; 51 percent of traffic continues north/east on US 50 and 49 percent turns east/north onto Pioneer Trail. Westbound traffic on a typical Friday is made up of 37 percent from Pioneer Trail (southbound/westbound left) and 63 percent from US 50 (southbound/westbound through).
- North/Eastbound US 50 traffic on a typical Sunday as it approaches the intersection breaks up into two movements; 65 percent of traffic continues north/east on US 50 and 35 percent turns east/north onto Pioneer Trail. Westbound US 50 traffic is made up of 40 percent from Pioneer Trail (southbound/westbound left) and 60 percent from US 50 (southbound/westbound through).

Appendix A from TOAR





N

NOT TO SCALE

El Dorado County
US 50 and Pioneer Trail TOAR

Design Hourly Volumes

Project No. 11191432
Report No. R2610RPT001
Date 8/21/2019

Appendix Figure 1

Appendix B. Synchro and SIDRA LOS Worksheets

LANE SUMMARY

Site: 1v [Pioneer RB Summer No Build Friday]

No Build Design Volumes Signal Alternative
Site Category: (None)
Signals - Actuated Isolated Cycle Time = 108 seconds (Site User-Given Phase Times)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1	266	3.0	379[1]	0.700	100	46.5	LOS D	14.1	360.4	Full	1600	0.0	0.0
Lane 2	52	1.0	399	0.131	100	41.1	LOS D	2.2	56.7	Short	50	0.0	NA
Approach	318	2.7		0.700		45.6	LOS D	14.1	360.4				
East: WB US 50													
Lane 1	73	1.0	199	0.366	100	57.3	LOS E	4.0	100.1	Short	165	0.0	NA
Lane 2	453	3.0	1247	0.363	100	8.3	LOS A	10.9	278.7	Full	1600	0.0	0.0
Approach	526	2.7		0.366		15.1	LOS B	10.9	278.7				
West: EB US 50													
Lane 1	620	3.0	616[1]	1.007	100	57.7	LOS F	43.7	1118.0	Full	1600	0.0	0.0
Lane 2	594	1.0	583[1]	1.018	100	67.5	LOS F	42.8	1077.4	Short	225	0.0	NA
Approach	1214	2.0		1.018		62.5	LOS E	43.7	1118.0				
Intersection	2057	2.3		1.018		47.8	LOS D	43.7	1118.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

LANE SUMMARY

Site: 1 [Pioneer RB Summer Friday Peak Hour]

2019 Pioneer RB Sidra Standard EF 1.05
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1[d]	266	3.0	1043	0.255	100	12.8	LOS B	1.7	42.4	Full	1600	0.0	0.0
Lane 2	52	1.0	700	0.074	100	8.0	LOS A	0.4	9.7	Short	200	0.0	NA
Approach	318	2.7		0.255		12.0	LOS B	1.7	42.4				
East: WB US 50													
Lane 1[d]	207	2.3	1309	0.158	95[6]	6.8	LOS A	0.9	23.6	Short	150	0.0	NA
Lane 2	319	3.0	1918	0.166	100	3.7	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	526	2.7		0.166		4.9	LOS A	0.9	23.6				
West: EB US 50													
Lane 1[d]	620	3.0	1504	0.412	100	4.1	LOS A	2.9	75.4	Full	1600	0.0	0.0
Lane 2	594	1.0	1658	0.358	100	3.6	LOS A	0.0	0.0	Short	150	0.0	NA
Approach	1214	2.0		0.412		3.9	LOS A	2.9	75.4				
Intersection	2057	2.3		0.412		5.4	LOS A	2.9	75.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2	2
Vehs Entered	1988	1894	1950	1961	2007	1923	1962
Vehs Exited	2000	1920	1963	1957	1995	1934	1946
Starting Vehs	43	63	34	37	49	48	31
Ending Vehs	31	37	21	41	61	37	47
Travel Distance (mi)	972	934	955	957	976	944	952
Travel Time (hr)	38.4	36.2	39.0	38.5	40.0	37.6	38.6
Total Delay (hr)	10.4	9.4	11.6	10.9	11.7	10.5	11.1
Total Stops	1055	989	1135	1098	1128	1052	1126
Fuel Used (gal)	33.4	31.6	33.3	32.8	33.5	32.5	33.1

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	3	3	3	3
# of Recorded Intervals	2	2	2	2
Vehs Entered	1966	1909	2041	1960
Vehs Exited	1955	1909	2048	1963
Starting Vehs	29	33	45	41
Ending Vehs	40	33	38	39
Travel Distance (mi)	959	932	1002	958
Travel Time (hr)	38.3	37.0	40.3	38.4
Total Delay (hr)	10.7	10.2	11.4	10.8
Total Stops	1069	1051	1091	1079
Fuel Used (gal)	32.8	32.1	34.3	33.0

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	536	489	501	540	534	509	511
Vehs Exited	543	516	498	546	543	522	498
Starting Vehs	43	63	34	37	49	48	31
Ending Vehs	36	36	37	31	40	35	44
Travel Distance (mi)	264	246	244	266	266	251	246
Travel Time (hr)	10.6	9.5	10.3	11.1	10.8	10.3	10.0
Total Delay (hr)	3.0	2.4	3.3	3.5	3.1	3.1	2.9
Total Stops	284	248	303	308	289	285	295
Fuel Used (gal)	9.2	8.4	8.7	9.2	9.1	8.7	8.5

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	544	516	563	524
Vehs Exited	531	515	565	528
Starting Vehs	29	33	45	41
Ending Vehs	42	34	43	38
Travel Distance (mi)	264	249	274	257
Travel Time (hr)	10.9	10.1	11.3	10.5
Total Delay (hr)	3.3	2.9	3.5	3.1
Total Stops	309	282	291	291
Fuel Used (gal)	9.1	8.7	9.5	8.9

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1452	1405	1449	1421	1473	1414	1451
Vehs Exited	1457	1404	1465	1411	1452	1412	1448
Starting Vehs	36	36	37	31	40	35	44
Ending Vehs	31	37	21	41	61	37	47
Travel Distance (mi)	708	688	711	691	711	693	705
Travel Time (hr)	27.8	26.7	28.7	27.4	29.2	27.3	28.6
Total Delay (hr)	7.4	6.9	8.3	7.4	8.6	7.4	8.2
Total Stops	771	741	832	790	839	767	831
Fuel Used (gal)	24.2	23.2	24.6	23.6	24.4	23.8	24.7

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	1422	1393	1478	1436
Vehs Exited	1424	1394	1483	1435
Starting Vehs	42	34	43	38
Ending Vehs	40	33	38	39
Travel Distance (mi)	695	683	728	701
Travel Time (hr)	27.4	26.9	29.0	27.9
Total Delay (hr)	7.4	7.3	8.0	7.7
Total Stops	760	769	800	790
Fuel Used (gal)	23.8	23.4	24.8	24.0

3: Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.5	0.0	0.0	0.5
Total Del/Veh (s)	23.0	12.4	12.3	14.0

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	18.0

Intersection: 3:

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	195	162	36	245	237	210	115	187	160
Average Queue (ft)	107	26	12	134	80	102	52	87	33
95th Queue (ft)	173	96	28	208	183	174	98	155	103
Link Distance (ft)		719		540	540			447	447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	325		300			225	300		
Storage Blk Time (%)					0	0			
Queuing Penalty (veh)					0	0			

Intersection: 5: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	62
Average Queue (ft)	2
95th Queue (ft)	63
Link Distance (ft)	540
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

LANE SUMMARY

Site: 1v [Pioneer RB Summer No Build Sunday]

No Build Design Volumes Signal Alternative
Site Category: (None)
Signals - Actuated Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	95% Back of Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1	559	1.5	558[1]	1.002	100	69.4	LOS F	40.3	1020.8	Full	1600	0.0	0.0
Lane 2	43	1.0	536	0.079	100	33.4	LOS C	1.6	40.9	Short	50	0.0	NA
Approach	601	1.5		1.002		66.8	LOS E	40.3	1020.8				
East: WB US 50													
Lane 1	37	1.0	179	0.208	100	58.2	LOS E	2.0	51.0	Short	165	0.0	NA
Lane 2	835	1.5	1066[1]	0.783	100	18.4	LOS B	37.1	937.9	Full	1600	0.0	0.0
Approach	872	1.5		0.783		20.1	LOS C	37.1	937.9				
West: EB US 50													
Lane 1	777	1.1	637[1]	1.219	100	142.5	LOS F	74.6	1881.1	Full	1600	0.0	19.7
Lane 2	415	1.1	626[1]	0.663	100	30.7	LOS C	18.2	459.0	Short	225	0.0	NA
Approach	1191	1.1		1.219		103.6	LOS F	74.6	1881.1				
Intersection	2665	1.3		1.219		68.0	LOS E	74.6	1881.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

LANE SUMMARY

Site: 1 [Pioneer RB Summer Sunday Peak Hour]

2019 Myers RB Sidra Standard EF 1.05
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1[d]	559	1.5	956	0.584	100	17.2	LOS B	6.0	152.0	Full	1600	0.0	0.0
Lane 2	43	1.0	635	0.067	100	9.4	LOS A	0.4	9.0	Short	200	0.0	NA
Approach	601	1.5		0.584		16.6	LOS B	6.0	152.0				
East: WB US 50													
Lane 1[d]	289	1.4	1016	0.284	95[6]	7.2	LOS A	2.1	53.2	Short	150	0.0	NA
Lane 2	584	1.5	1947	0.300	100	4.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	872	1.5		0.300		5.0	LOS A	2.1	53.2				
West: EB US 50													
Lane 1[d]	777	1.1	1706	0.455	100	4.1	LOS A	3.9	99.2	Full	1600	0.0	0.0
Lane 2	415	1.1	1656	0.250	100	3.7	LOS A	0.0	0.0	Short	150	0.0	NA
Approach	1191	1.1		0.455		4.0	LOS A	3.9	99.2				
Intersection	2665	1.3		0.584		7.2	LOS A	6.0	152.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:50	6:50	6:50	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2	2
Vehs Entered	2602	2514	2433	2441	2476	2509	2433
Vehs Exited	2614	2513	2431	2451	2465	2505	2425
Starting Vehs	62	54	57	62	52	49	53
Ending Vehs	50	55	59	52	63	53	61
Travel Distance (mi)	1293	1258	1212	1217	1229	1251	1208
Travel Time (hr)	59.5	55.4	53.3	53.7	53.7	55.4	53.0
Total Delay (hr)	23.0	20.0	19.2	19.4	19.1	20.5	18.9
Total Stops	1862	1632	1695	1568	1647	1655	1636
Fuel Used (gal)	49.0	46.8	45.4	45.2	45.5	47.0	44.8

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:50	6:50	6:50	6:50
End Time	8:00	8:00	8:00	8:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	3	3	3	3
# of Recorded Intervals	2	2	2	2
Vehs Entered	2498	2472	2528	2491
Vehs Exited	2510	2472	2532	2492
Starting Vehs	52	62	61	57
Ending Vehs	40	62	57	54
Travel Distance (mi)	1249	1226	1260	1240
Travel Time (hr)	56.5	54.4	60.1	55.5
Total Delay (hr)	21.4	19.9	24.5	20.6
Total Stops	1768	1683	1910	1706
Fuel Used (gal)	46.9	45.7	47.6	46.4

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	677	687	629	641	659	650	649
Vehs Exited	668	665	635	655	648	646	637
Starting Vehs	62	54	57	62	52	49	53
Ending Vehs	71	76	51	48	63	53	65
Travel Distance (mi)	333	338	316	323	327	320	321
Travel Time (hr)	15.8	15.6	14.2	15.1	14.7	14.3	14.7
Total Delay (hr)	6.3	6.1	5.3	6.0	5.5	5.3	5.7
Total Stops	499	486	454	479	465	440	475
Fuel Used (gal)	12.8	12.8	11.8	12.3	12.2	12.1	12.1

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	701	676	716	668
Vehs Exited	687	680	709	663
Starting Vehs	52	62	61	57
Ending Vehs	66	58	68	61
Travel Distance (mi)	346	335	353	331
Travel Time (hr)	16.7	16.1	19.3	15.6
Total Delay (hr)	6.9	6.6	9.3	6.3
Total Stops	534	541	663	504
Fuel Used (gal)	13.3	12.8	13.9	12.6

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1925	1827	1804	1800	1817	1859	1784
Vehs Exited	1946	1848	1796	1796	1817	1859	1788
Starting Vehs	71	76	51	48	63	53	65
Ending Vehs	50	55	59	52	63	53	61
Travel Distance (mi)	960	920	897	894	902	930	888
Travel Time (hr)	43.7	39.8	39.1	38.5	39.0	41.2	38.3
Total Delay (hr)	16.7	13.8	13.9	13.4	13.7	15.2	13.2
Total Stops	1363	1146	1241	1089	1182	1215	1161
Fuel Used (gal)	36.3	34.0	33.6	32.9	33.3	34.9	32.7

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	1797	1796	1812	1822
Vehs Exited	1823	1792	1823	1829
Starting Vehs	66	58	68	61
Ending Vehs	40	62	57	54
Travel Distance (mi)	903	891	907	909
Travel Time (hr)	39.8	38.3	40.7	39.9
Total Delay (hr)	14.4	13.3	15.2	14.3
Total Stops	1234	1142	1247	1202
Fuel Used (gal)	33.6	32.9	33.7	33.8

3: Performance by approach Interval #1 7:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.3	0.0	0.0	0.7
Total Del/Veh (s)	36.7	18.6	19.2	23.1

3: Performance by approach Interval #2 7:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.3	0.0	0.0	0.7
Total Del/Veh (s)	29.5	15.6	17.0	19.2

3: Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.3	0.0	0.0	0.7
Total Del/Veh (s)	32.0	16.5	17.7	20.5

Total Network Performance By Interval

Interval Start	7:00	7:15	All
Denied Del/Veh (s)	1.6	1.5	1.5
Total Del/Veh (s)	29.9	25.9	27.6

Intersection: 3: , Interval #1

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	316	282	28	282	254	118	65	315	284
Average Queue (ft)	245	167	12	199	152	74	36	211	159
95th Queue (ft)	348	324	32	300	272	132	72	330	291
Link Distance (ft)		719		540	540			447	447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	325		300			225	300		
Storage Blk Time (%)	4	2			1			1	
Queuing Penalty (veh)	12	5			3			0	

Intersection: 3: , Interval #2

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	302	253	34	274	246	132	90	343	308
Average Queue (ft)	205	122	10	174	124	61	32	195	129
95th Queue (ft)	293	253	26	254	229	111	72	304	268
Link Distance (ft)		719		540	540			447	447
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)	325		300			225	300		
Storage Blk Time (%)	0	0			0			1	
Queuing Penalty (veh)	1	0			1			0	

Intersection: 3: , All Intervals

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	329	293	37	295	262	156	92	354	327
Average Queue (ft)	215	133	11	180	131	64	33	199	136
95th Queue (ft)	311	274	28	268	241	117	72	311	275
Link Distance (ft)		719		540	540			447	447
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)	325		300			225	300		
Storage Blk Time (%)	1	0			0			1	
Queuing Penalty (veh)	3	1			1			0	

Intersection: 5: Bend, Interval #1

Movement	SB	SB
Directions Served	T	
Maximum Queue (ft)	63	56
Average Queue (ft)	9	8
95th Queue (ft)	133	117
Link Distance (ft)	540	540
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Bend, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Bend, All Intervals

Movement	SB	SB
Directions Served	T	
Maximum Queue (ft)	63	56
Average Queue (ft)	2	2
95th Queue (ft)	63	56
Link Distance (ft)	540	540
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Bend, Interval #1

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	143	46
Average Queue (ft)	20	7
95th Queue (ft)	179	97
Link Distance (ft)	447	447
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	1	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Bend, Interval #2

Movement	NB
Directions Served	T
Maximum Queue (ft)	280
Average Queue (ft)	21
95th Queue (ft)	180
Link Distance (ft)	447
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Bend, All Intervals

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	330	46
Average Queue (ft)	21	2
95th Queue (ft)	180	46
Link Distance (ft)	447	447
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	1	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 22
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, All Intervals: 7

LANE SUMMARY

Site: 1 [Pioneer RB Summer Friday Peak Hour - Sensitivity]

2019 Pioneer RB Sidra Standard EF 1.05; sensitivity analysis 1% growth over 20 years, applied a 120% volume factor in SIDRA
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1[d]	319	3.0	922	0.346	100	14.0	LOS B	2.5	64.0	Full	1600	0.0	0.0
Lane 2	63	1.0	625	0.100	100	9.2	LOS A	0.6	14.0	Short	200	0.0	NA
Approach	381	2.7		0.346		13.2	LOS B	2.5	64.0				
East: WB US 50													
Lane 1[d]	241	2.3	1245	0.193	95[6]	7.1	LOS A	1.2	30.8	Short	150	0.0	NA
Lane 2	390	3.0	1918	0.204	100	3.8	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	631	2.7		0.204		5.0	LOS A	1.2	30.8				
West: EB US 50													
Lane 1[d]	744	3.0	1484	0.501	100	4.2	LOS A	4.1	104.7	Full	1600	0.0	0.0
Lane 2	712	1.0	1658	0.430	100	3.6	LOS A	0.0	0.0	Short	150	0.0	NA
Approach	1456	2.0		0.501		3.9	LOS A	4.1	104.7				
Intersection	2469	2.3		0.501		5.7	LOS A	4.1	104.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2	2
Vehs Entered	2337	2289	2440	2316	2338	2328	2352
Vehs Exited	2327	2288	2445	2330	2325	2337	2358
Starting Vehs	41	45	48	56	53	46	45
Ending Vehs	51	46	43	42	66	37	39
Travel Distance (mi)	1141	1119	1196	1133	1138	1141	1152
Travel Time (hr)	48.8	47.0	52.6	47.7	48.3	48.6	49.0
Total Delay (hr)	16.0	14.9	18.2	14.9	15.5	15.9	15.9
Total Stops	1362	1312	1471	1323	1328	1385	1373
Fuel Used (gal)	39.8	39.0	42.9	39.5	39.5	40.2	40.5

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	3	3	3	3
# of Recorded Intervals	2	2	2	2
Vehs Entered	2399	2364	2410	2356
Vehs Exited	2410	2361	2418	2360
Starting Vehs	38	56	46	46
Ending Vehs	27	59	38	43
Travel Distance (mi)	1175	1153	1176	1152
Travel Time (hr)	50.5	50.4	52.5	49.5
Total Delay (hr)	16.7	17.2	18.4	16.4
Total Stops	1423	1427	1523	1393
Fuel Used (gal)	41.3	40.9	41.8	40.5

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	607	610	652	615	625	599	616
Vehs Exited	587	600	644	628	631	603	621
Starting Vehs	41	45	48	56	53	46	45
Ending Vehs	61	55	56	43	47	42	40
Travel Distance (mi)	289	296	319	302	307	293	303
Travel Time (hr)	12.8	13.1	14.3	13.0	13.4	13.0	12.7
Total Delay (hr)	4.5	4.6	5.1	4.3	4.6	4.6	4.0
Total Stops	378	382	374	366	384	384	339
Fuel Used (gal)	10.3	10.6	11.8	10.7	10.8	10.5	10.6

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	650	667	658	630
Vehs Exited	633	656	645	624
Starting Vehs	38	56	46	46
Ending Vehs	55	67	59	52
Travel Distance (mi)	314	322	316	306
Travel Time (hr)	14.3	15.5	14.6	13.7
Total Delay (hr)	5.3	6.2	5.4	4.8
Total Stops	439	461	427	394
Fuel Used (gal)	11.4	12.1	11.4	11.0

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1730	1679	1788	1701	1713	1729	1736
Vehs Exited	1740	1688	1801	1702	1694	1734	1737
Starting Vehs	61	55	56	43	47	42	40
Ending Vehs	51	46	43	42	66	37	39
Travel Distance (mi)	852	823	877	831	831	848	849
Travel Time (hr)	36.0	34.0	38.3	34.7	34.9	35.6	36.4
Total Delay (hr)	11.5	10.2	13.1	10.7	10.9	11.3	11.9
Total Stops	984	930	1097	957	944	1001	1034
Fuel Used (gal)	29.5	28.5	31.1	28.8	28.7	29.7	29.9

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	1749	1697	1752	1727
Vehs Exited	1777	1705	1773	1735
Starting Vehs	55	67	59	52
Ending Vehs	27	59	38	43
Travel Distance (mi)	862	831	860	846
Travel Time (hr)	36.2	34.9	37.9	35.9
Total Delay (hr)	11.4	11.0	13.1	11.5
Total Stops	984	966	1096	1000
Fuel Used (gal)	29.9	28.8	30.4	29.5

3: Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.4	0.0	0.0	0.5
Total Del/Veh (s)	26.0	16.1	14.3	17.2

Total Network Performance

Denied Del/Veh (s)	1.9
Total Del/Veh (s)	22.6

Intersection: 3:

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	240	195	44	267	307	296	141	211	178
Average Queue (ft)	133	47	15	162	119	147	66	111	44
95th Queue (ft)	207	148	32	246	250	263	117	187	132
Link Distance (ft)		719		540	540			447	447
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	325		300			225	300		
Storage Blk Time (%)					0	3			
Queuing Penalty (veh)					1	10			

Intersection: 6: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	233	46
Average Queue (ft)	13	2
95th Queue (ft)	137	46
Link Distance (ft)	447	447
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 12

LANE SUMMARY

Site: 1 [Pioneer RB Summer Sunday Peak Hour - Sensitivity]

2019 Myers RB Sidra Standard EF 1.05; sensitivity analysis 1% growth over 20 years, applied a 120% volume factor in SIDRA
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: NB Pioneer Trail													
Lane 1[d]	670	1.5	813	0.824	100	31.9	LOS C	15.5	393.1	Full	1600	0.0	0.0
Lane 2	51	1.0	550	0.093	100	11.3	LOS B	0.5	13.7	Short	200	0.0	NA
Approach	721	1.5		0.824		30.4	LOS C	15.5	393.1				
East: WB US 50													
Lane 1[d]	313	1.4	876	0.357	95[6]	8.1	LOS A	2.9	74.4	Short	150	0.0	NA
Lane 2	734	1.5	1947	0.377	100	4.0	LOS A	0.0	0.0	Full	1600	0.0	0.0
Approach	1047	1.5		0.377		5.2	LOS A	2.9	74.4				
West: EB US 50													
Lane 1[d]	932	1.1	1692	0.551	100	4.2	LOS A	5.7	143.4	Full	1600	0.0	0.0
Lane 2	498	1.1	1656	0.301	100	3.7	LOS A	0.0	0.0	Short	150	0.0	NA
Approach	1430	1.1		0.551		4.0	LOS A	5.7	143.4				
Intersection	3198	1.3		0.824		10.4	LOS B	15.5	393.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	3	3	3	3	3	3	3
# of Recorded Intervals	2	2	2	2	2	2	2
Vehs Entered	3040	2988	2954	2878	2927	3018	3035
Vehs Exited	3035	2995	2977	2896	2888	3019	2982
Starting Vehs	83	91	83	87	63	94	58
Ending Vehs	88	84	60	69	102	93	111
Travel Distance (mi)	1511	1494	1480	1442	1446	1509	1494
Travel Time (hr)	98.3	75.8	84.6	73.4	80.4	93.5	91.9
Total Delay (hr)	55.8	33.9	43.0	32.9	39.8	51.1	49.9
Total Stops	3428	2636	3065	2408	2762	3207	3131
Fuel Used (gal)	65.3	58.8	60.7	56.3	58.7	63.5	62.4

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	3	3	3	3
# of Recorded Intervals	2	2	2	2
Vehs Entered	3043	2947	3008	2984
Vehs Exited	3042	2959	3024	2982
Starting Vehs	68	83	86	79
Ending Vehs	69	71	70	81
Travel Distance (mi)	1518	1471	1502	1487
Travel Time (hr)	84.0	80.1	95.1	85.7
Total Delay (hr)	41.3	38.7	52.7	43.9
Total Stops	2998	2781	3290	2971
Fuel Used (gal)	61.2	59.1	63.7	61.0

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Seeding

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	827	779	801	772	784	776	787
Vehs Exited	766	790	775	759	751	771	735
Starting Vehs	83	91	83	87	63	94	58
Ending Vehs	144	80	109	100	96	99	110
Travel Distance (mi)	391	395	392	381	381	386	377
Travel Time (hr)	26.0	20.3	24.2	20.9	22.1	23.5	20.6
Total Delay (hr)	15.0	9.3	13.3	10.3	11.4	12.7	10.1
Total Stops	958	728	961	733	776	867	759
Fuel Used (gal)	17.1	15.6	16.6	15.2	15.7	16.0	15.2

Interval #1 Information Seeding

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	780	815	822	794
Vehs Exited	760	781	795	767
Starting Vehs	68	83	86	79
Ending Vehs	88	117	113	105
Travel Distance (mi)	385	396	400	388
Travel Time (hr)	22.1	23.8	27.6	23.1
Total Delay (hr)	11.3	12.7	16.3	12.2
Total Stops	764	927	1019	849
Fuel Used (gal)	15.7	16.4	17.6	16.1

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	10	2	3	4	5	6
Vehs Entered	2213	2209	2153	2106	2143	2242	2248
Vehs Exited	2269	2205	2202	2137	2137	2248	2247
Starting Vehs	144	80	109	100	96	99	110
Ending Vehs	88	84	60	69	102	93	111
Travel Distance (mi)	1120	1099	1088	1061	1065	1123	1118
Travel Time (hr)	72.4	55.5	60.4	52.4	58.3	69.9	71.3
Total Delay (hr)	40.8	24.6	29.7	22.6	28.4	38.4	39.8
Total Stops	2470	1908	2104	1675	1986	2340	2372
Fuel Used (gal)	48.2	43.2	44.1	41.1	43.0	47.5	47.2

Interval #2 Information Recording

Start Time	7:15
End Time	8:00
Total Time (min)	45

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	7	8	9	Avg
Vehs Entered	2263	2132	2186	2190
Vehs Exited	2282	2178	2229	2213
Starting Vehs	88	117	113	105
Ending Vehs	69	71	70	81
Travel Distance (mi)	1134	1075	1101	1098
Travel Time (hr)	61.9	56.3	67.5	62.6
Total Delay (hr)	30.0	26.0	36.4	31.7
Total Stops	2234	1854	2271	2123
Fuel Used (gal)	45.5	42.7	46.1	44.9

3: Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.7	0.0	0.0	1.1
Total Del/Veh (s)	78.7	25.2	27.8	38.1

Total Network Performance

Denied Del/Veh (s)	2.3
Total Del/Veh (s)	49.4

Intersection: 3:

Movement	WB	WB	WB	NB	NB	NB	B5	SB	SB	SB	B6
Directions Served	L	L	R	T	T	R	T	L	T	T	T
Maximum Queue (ft)	408	642	217	462	454	283	7	204	472	431	158
Average Queue (ft)	338	351	35	260	224	104	0	44	288	239	10
95th Queue (ft)	468	681	177	410	400	230	8	148	445	421	110
Link Distance (ft)		719		540	540		1102		447	447	474
Upstream Blk Time (%)		4		0	0				2	0	0
Queuing Penalty (veh)		0		0	0				0	0	0
Storage Bay Dist (ft)	325		300			225		300			
Storage Blk Time (%)	38	14			5	0			11		
Queuing Penalty (veh)	137	52			25	0			5		

Intersection: 5: Bend

Movement	SB	SB
Directions Served	T	
Maximum Queue (ft)	586	165
Average Queue (ft)	69	8
95th Queue (ft)	374	114
Link Distance (ft)	540	540
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	4	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	488	435
Average Queue (ft)	111	31
95th Queue (ft)	439	221
Link Distance (ft)	447	447
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	5	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

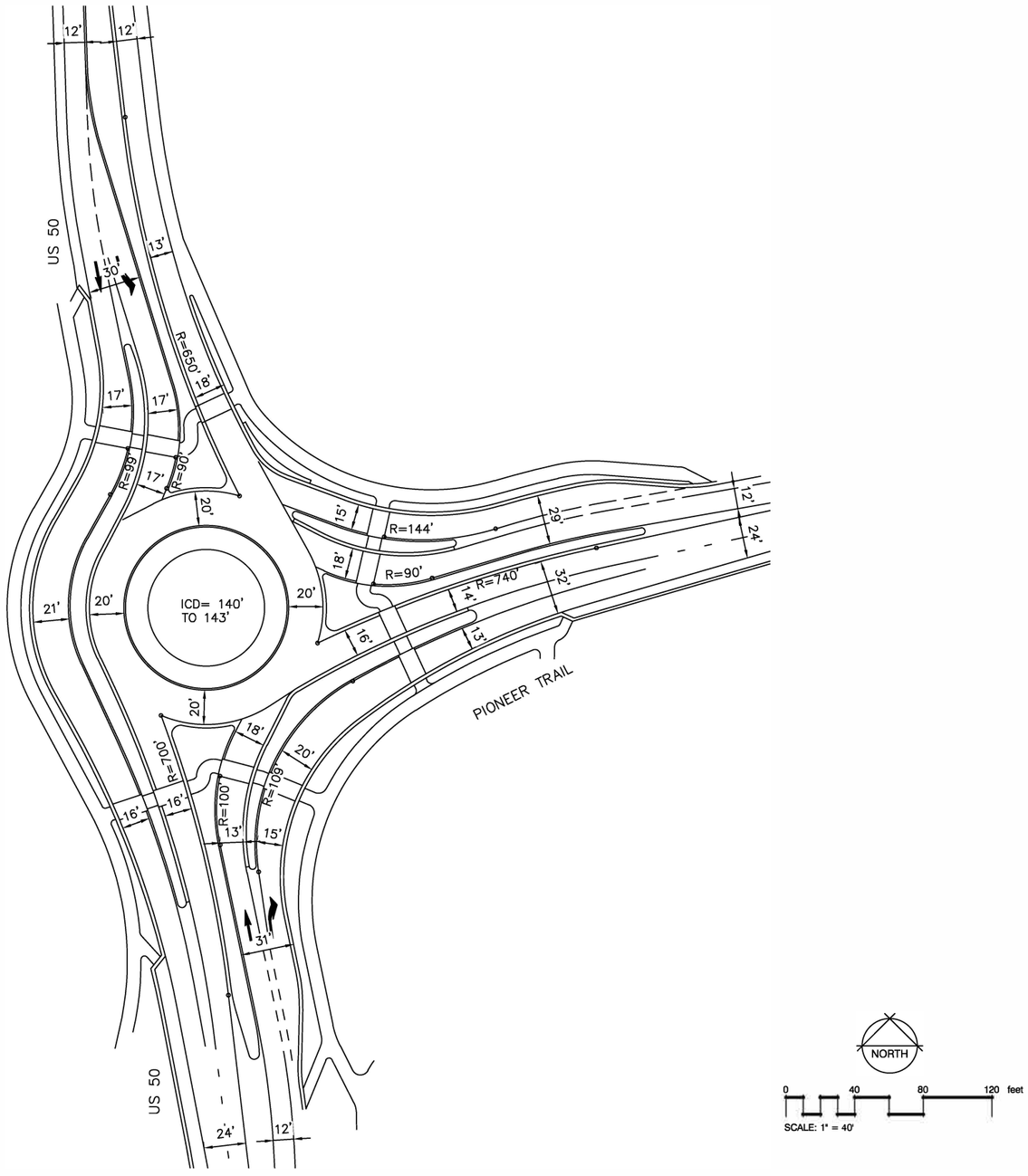
Network wide Queuing Penalty: 229

Appendix C. Roundabout Performance Based Checks

Roundabout Performance Based Checks

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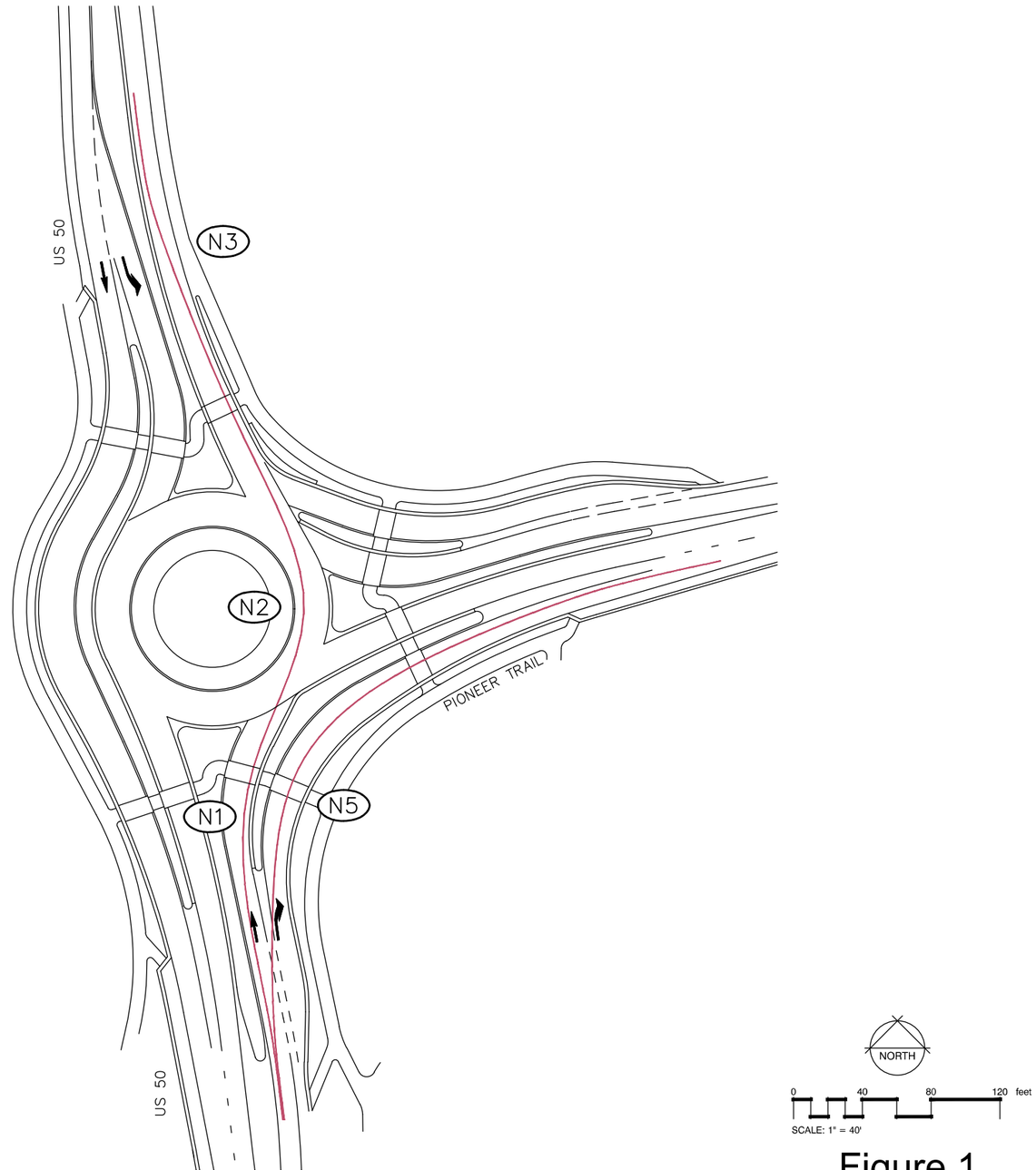
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Fastpath (NB)

LEGEND:

FAST PATH

D# FAST PATH SPEED IDENTIFIER



Movement	Northbound US50 Radius (ft)	Northbound US50 Speed (N#)	Northbound US50 Right Bypass Radius (ft)	Northbound US50 Right Bypass Speed (N#)
Entering (V1)	161.0	24.5	N/A	N/A
Circulating (V2)	91.2	18.2	N/A	N/A
Exiting (V3)	979.4	29.9	N/A	N/A
Left Turn (V4)	N/A	N/A	N/A	N/A
Right Turn (V5)	N/A	N/A	106.7	20.9

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

As acceleration potential of vehicle determines actual exiting speed, V3 presented is a conservative estimate.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 1

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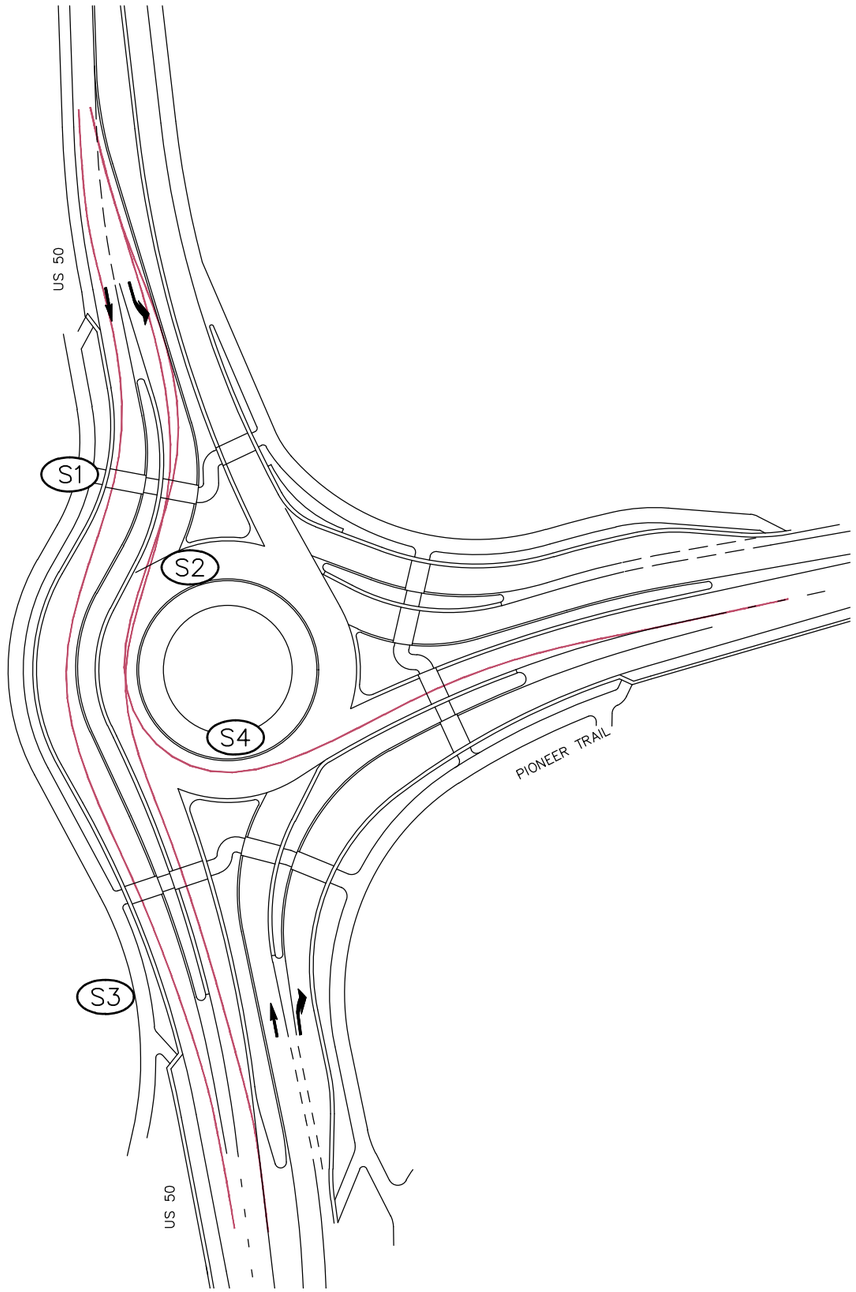
2610EX005.dwg

Fastpath (SB)

LEGEND:

FAST PATH

(D#) FAST PATH SPEED IDENTIFIER



Movement	Southbound US 50 Radius (ft)	Southbound US50 Speed (S#)	Southbound US 50 Radius (ft)	Southbound US50 Bypass Speed (S#)
Entering (V1)	164.8	24.7	162.0	24.5
Circulating (V2)	113.2	19.7	119.2	20.0
Exiting (V3)	N/A	31.1	75.9	29.8
Left Turn (V4)	N/A	15.0	N/A	N/A
Right Turn (V5)	N/A	N/A	N/A	N/A

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

As acceleration potential of vehicle determines actual exiting speed, V3 presented is a conservative estimate.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 2

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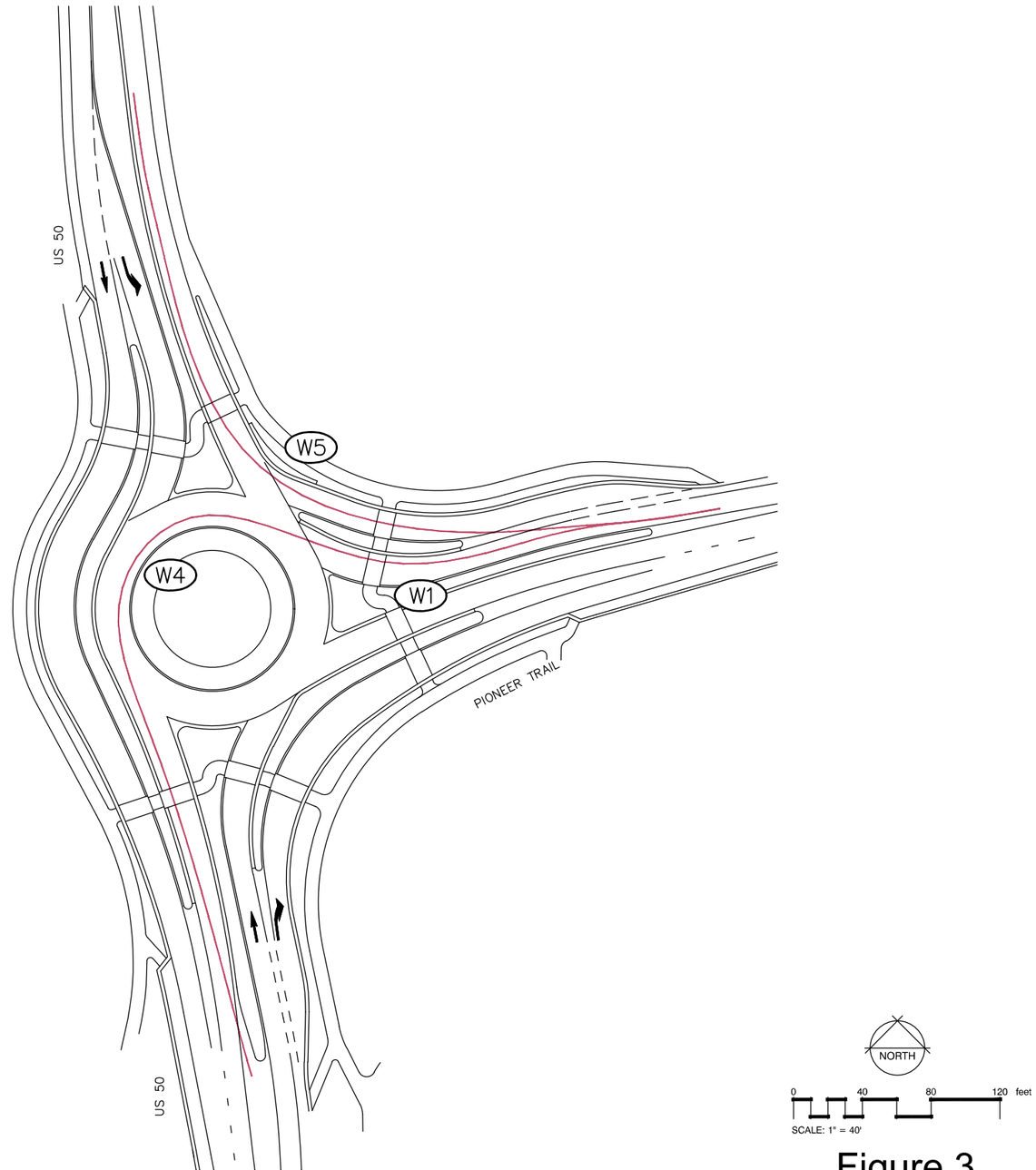
2610EX005.dwg

Fastpath (WB)

LEGEND:

FAST PATH

D# FAST PATH SPEED IDENTIFIER



Movement	Westbound Pioneer Trail Radius (ft)	Westbound Pioneer Trail Speed (W#)
Entering (V1)	156.4	24.2
Circulating (V2)	N/A	N/A
Exiting (V3)	N/A	N/A
Left Turn (V4)	53.7	15.0
Right Turn (V5)	161.1	24.5

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

As acceleration potential of vehicle determines actual exiting speed, V3 presented is a conservative estimate.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 3

Pioneer Trail/US50 Intersection Safety Improvement Project

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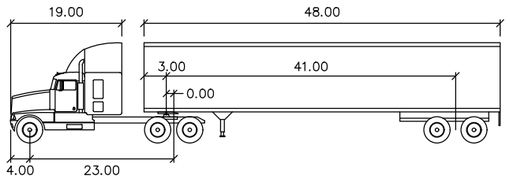
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STAA Truck Turns (NB)

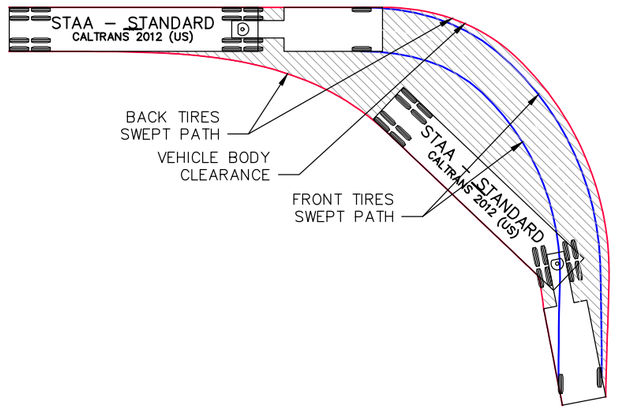
VEHICLE PROFILE

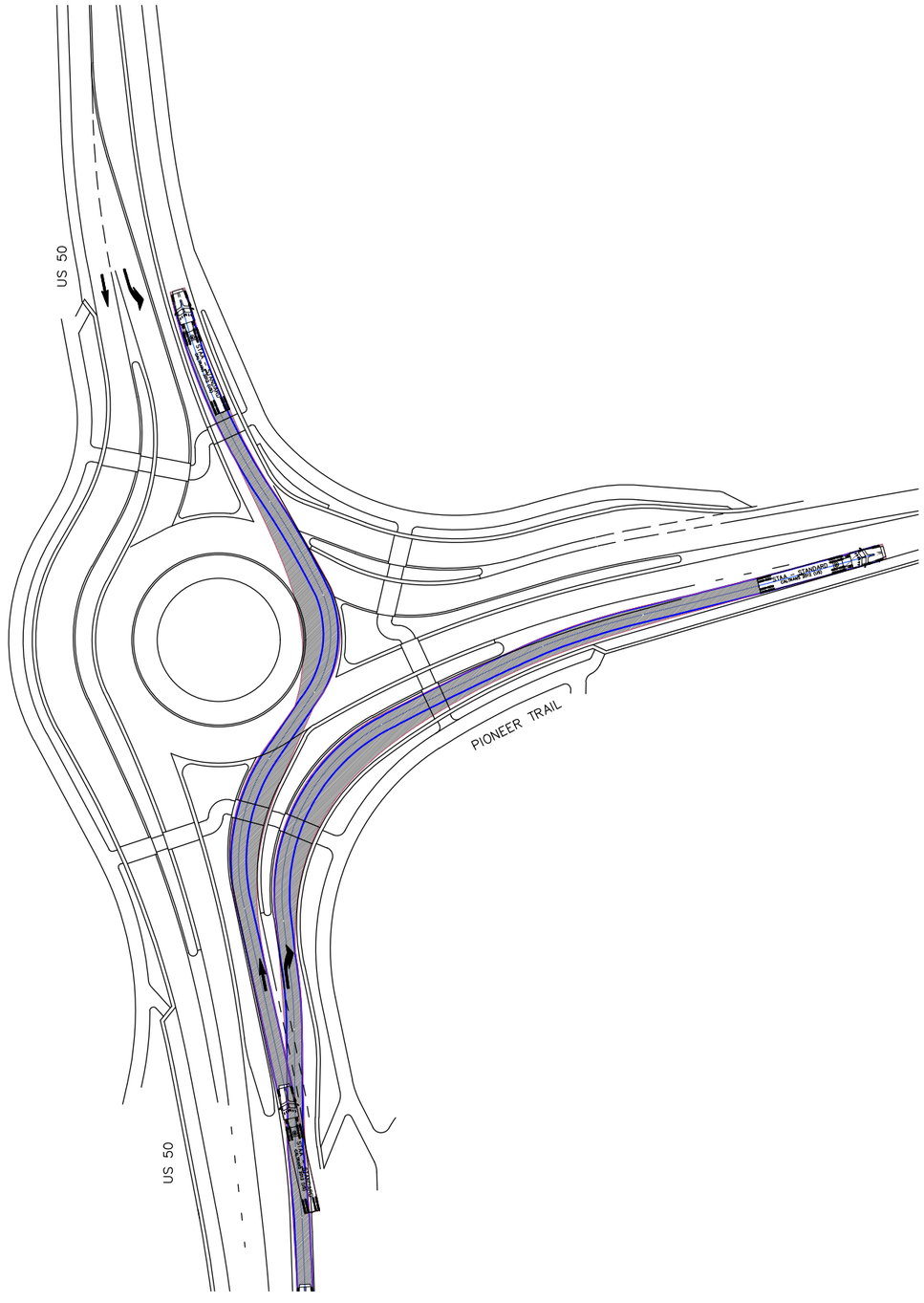


STAA – STANDARD feet

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		

LEGEND





NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 4

Pioneer Trail/US50 Intersection Safety Improvement Project

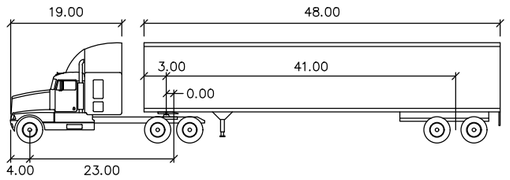
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STAA Truck Turns (SB)

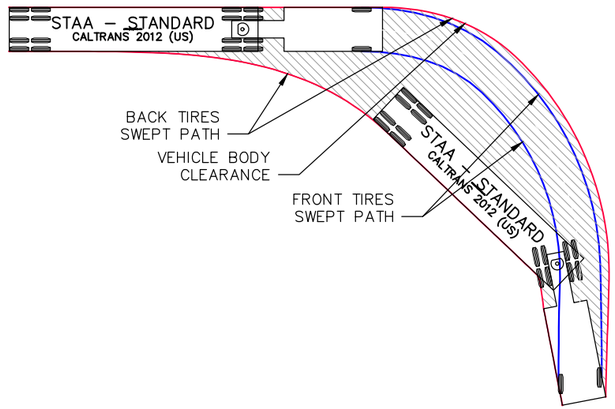
VEHICLE PROFILE



STAA – STANDARD 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		

LEGEND



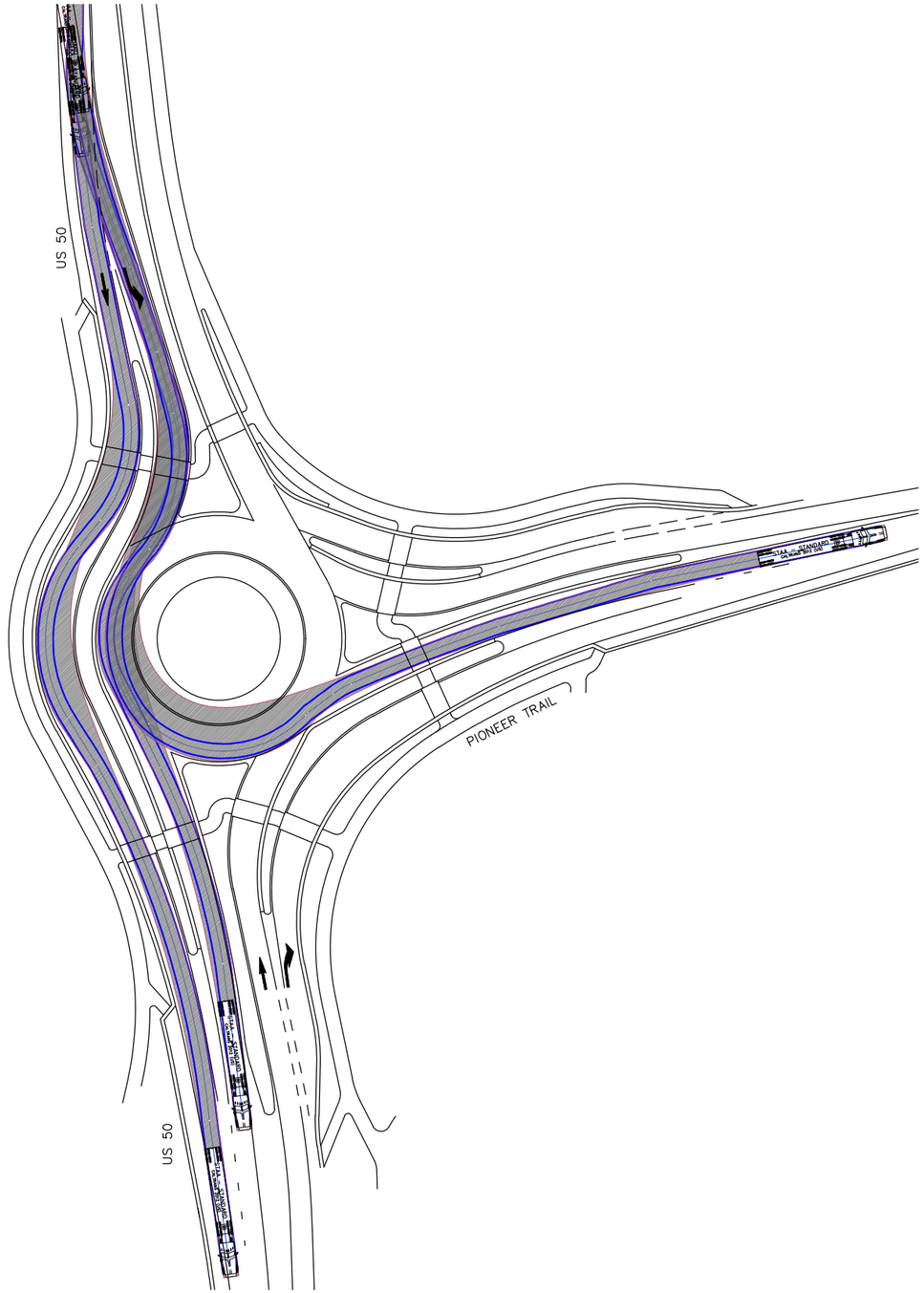


Figure 5

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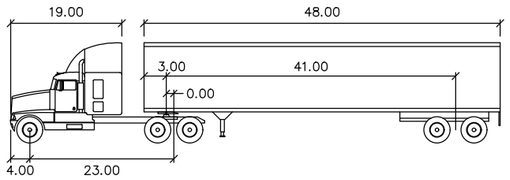
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STAA Truck Turns (WB)

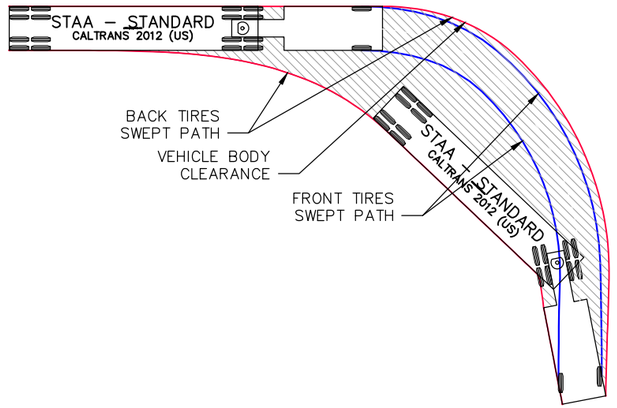
VEHICLE PROFILE

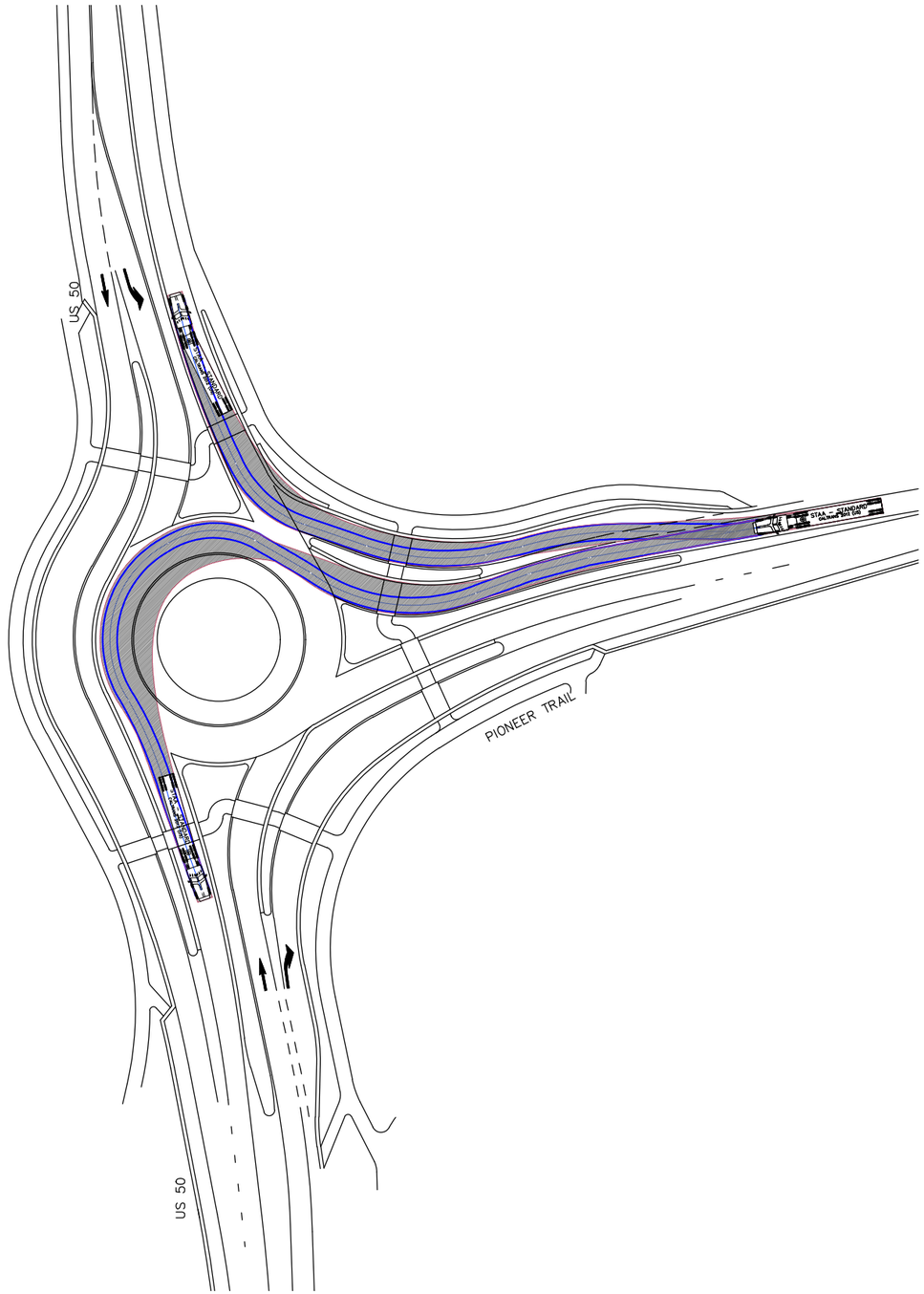


STAA – STANDARD feet

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		

LEGEND





NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 6

Pioneer Trail/US50 Intersection Safety Improvement Project

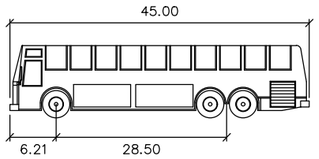
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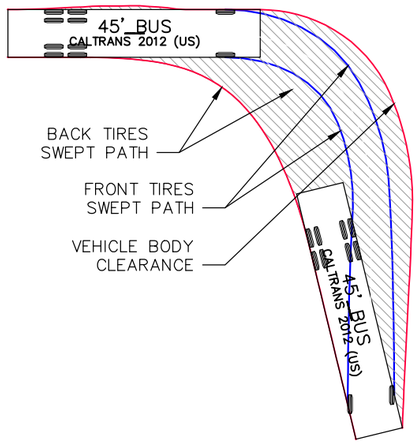
BUS 45 TURNS (NB)

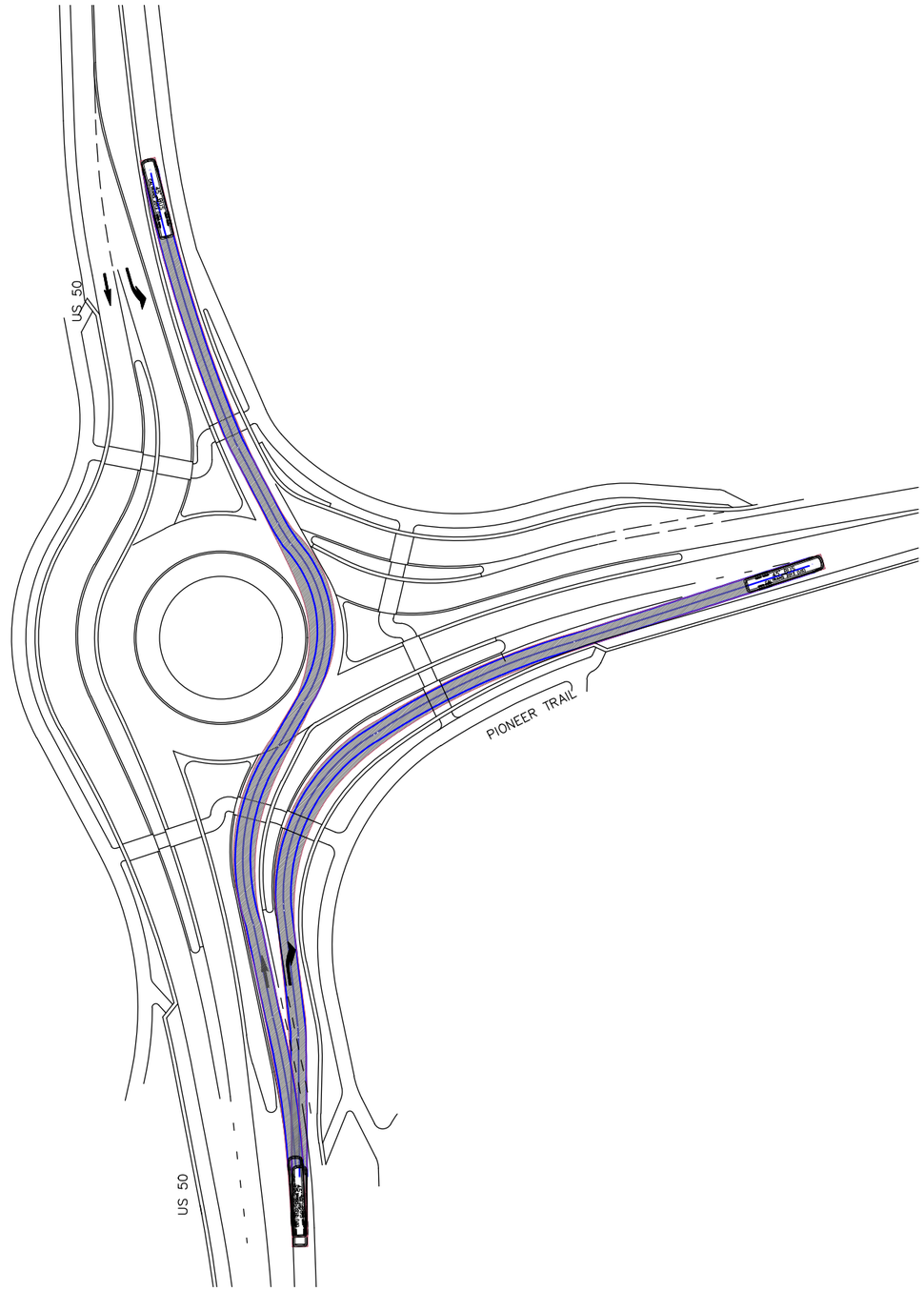
VEHICLE PROFILE



45' BUS	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.3

LEGEND





NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 7

Pioneer Trail/US50 Intersection Safety Improvement Project

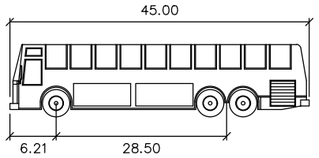
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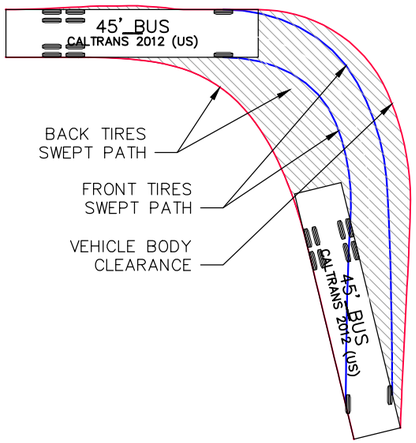
BUS 45 TURNS (SB)

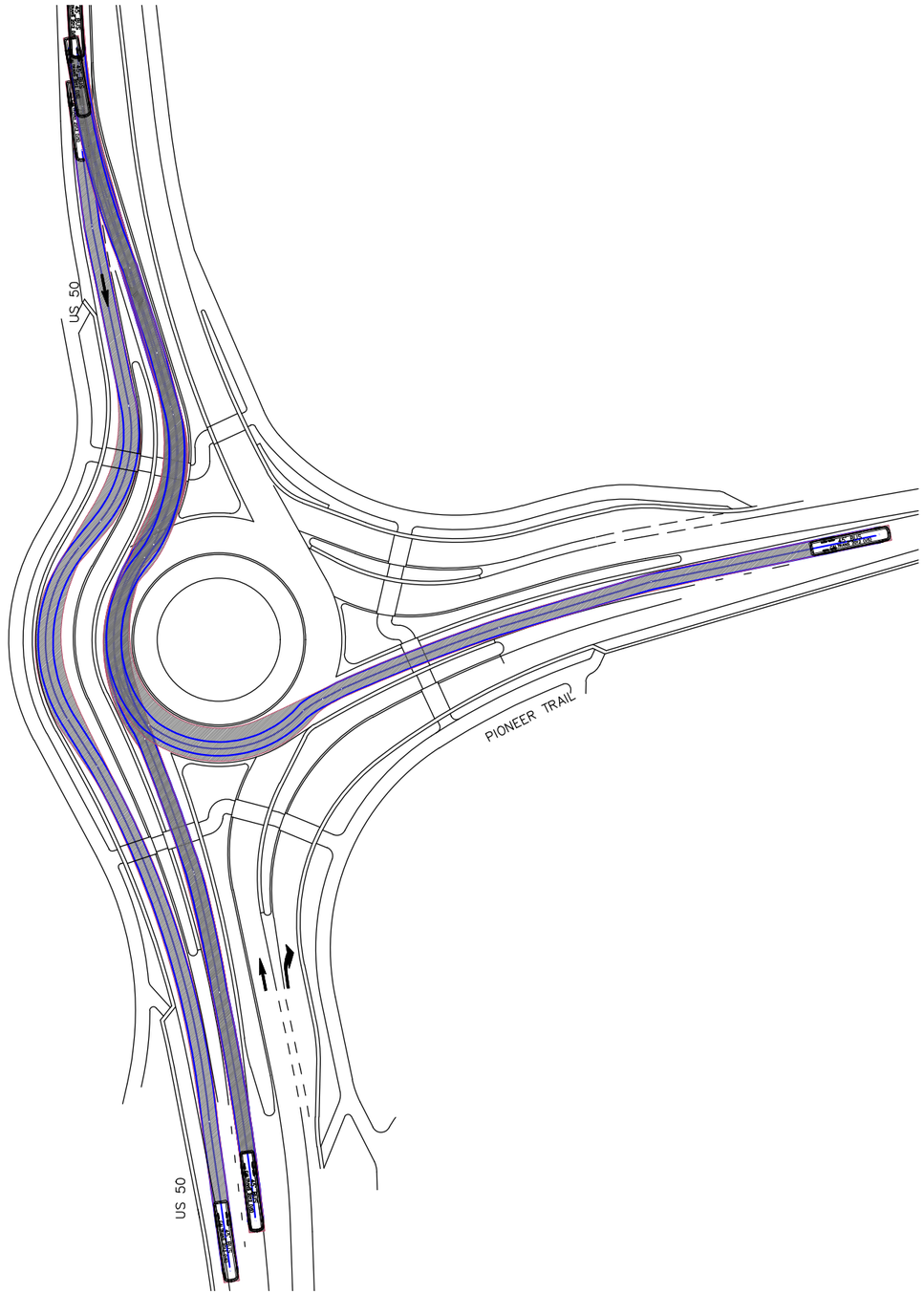
VEHICLE PROFILE



45' BUS	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.3

LEGEND





NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 8

Pioneer Trail/US50 Intersection Safety Improvement Project

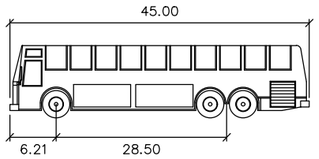
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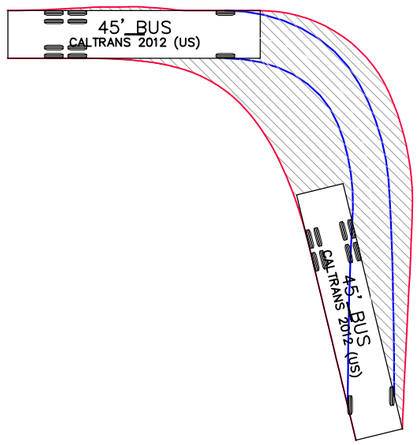
BUS 45 TURNS (WB)

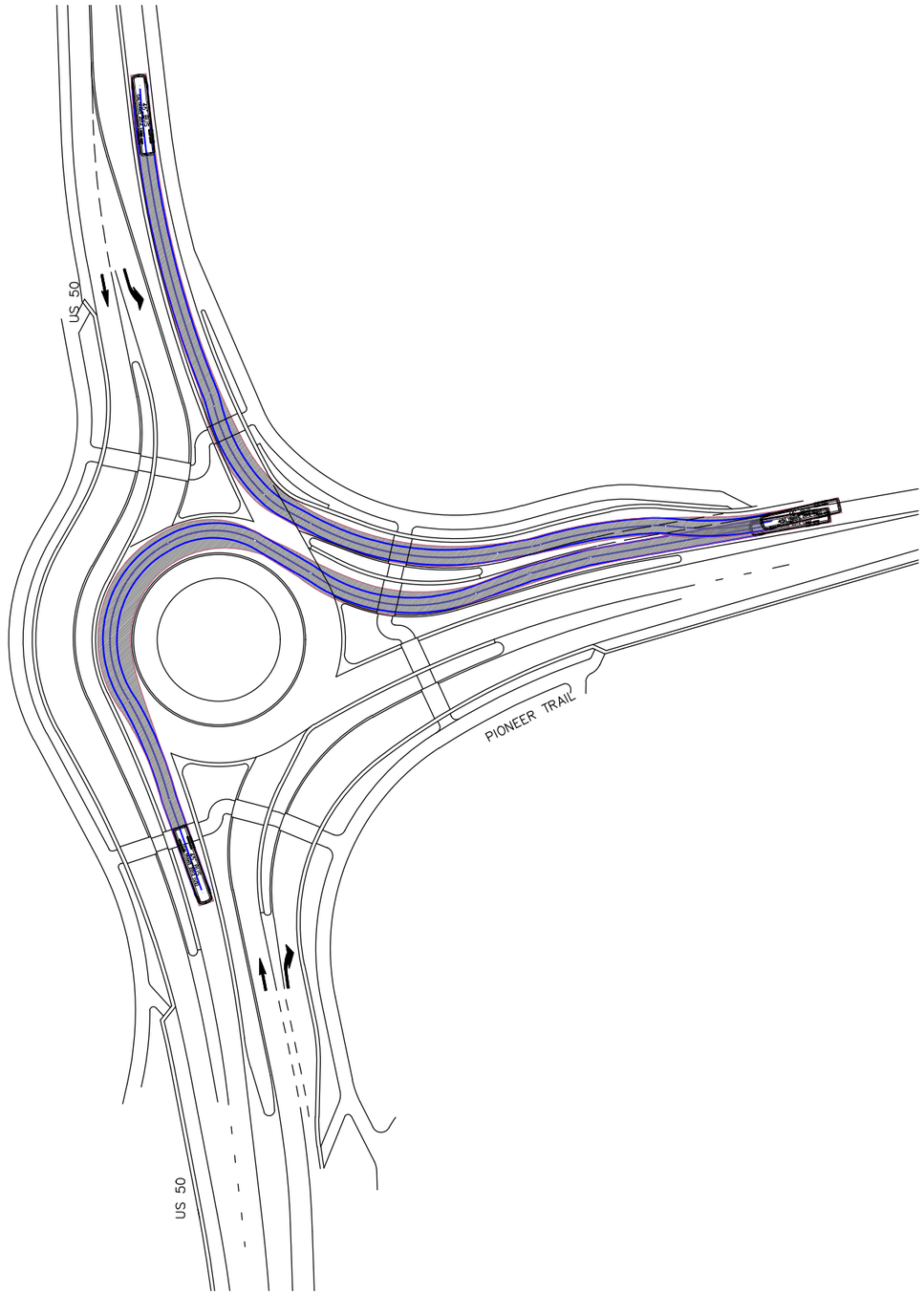
VEHICLE PROFILE



45' BUS	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.3

LEGEND





NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 9

Pioneer Trail/US50 Intersection Safety Improvement Project

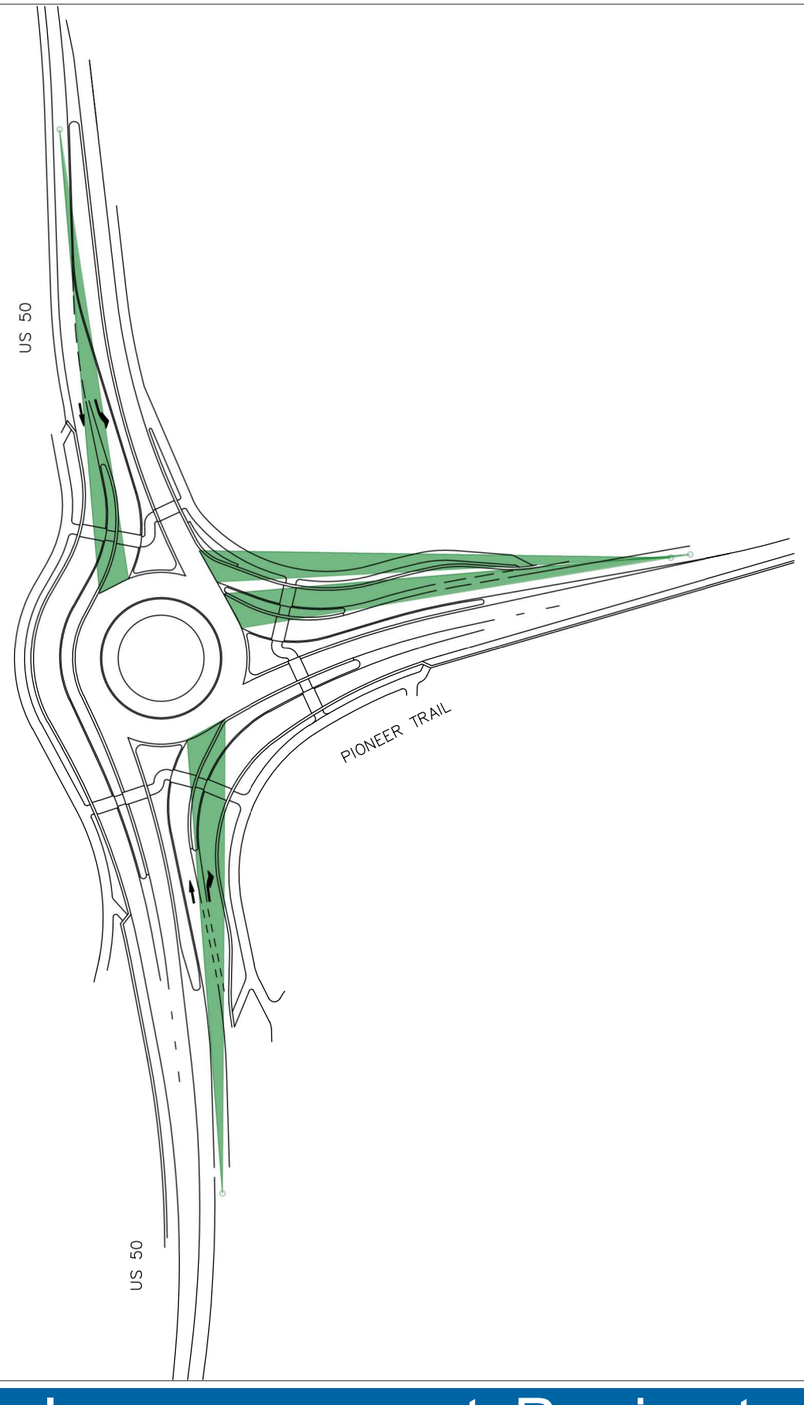
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STOPPING SIGHT DISTANCE - YIELD LINE

LEGEND:
SIGHT TRIANGLE



Approach	Design Speed (mph)	Stopping Sight Distance (feet)
Northbound Entrance Route 50	45.0	360.0
Southbound Entrance Route 50	45.0	360.0
Westbound Entrance Pioneer Trail	45.0	360.0
Notes: Stopping Sight Distance criteria obtained from Caltrans HDM.		

NORTH

0 60 120 180 feet
SCALE: 1" = 60'

Figure 10

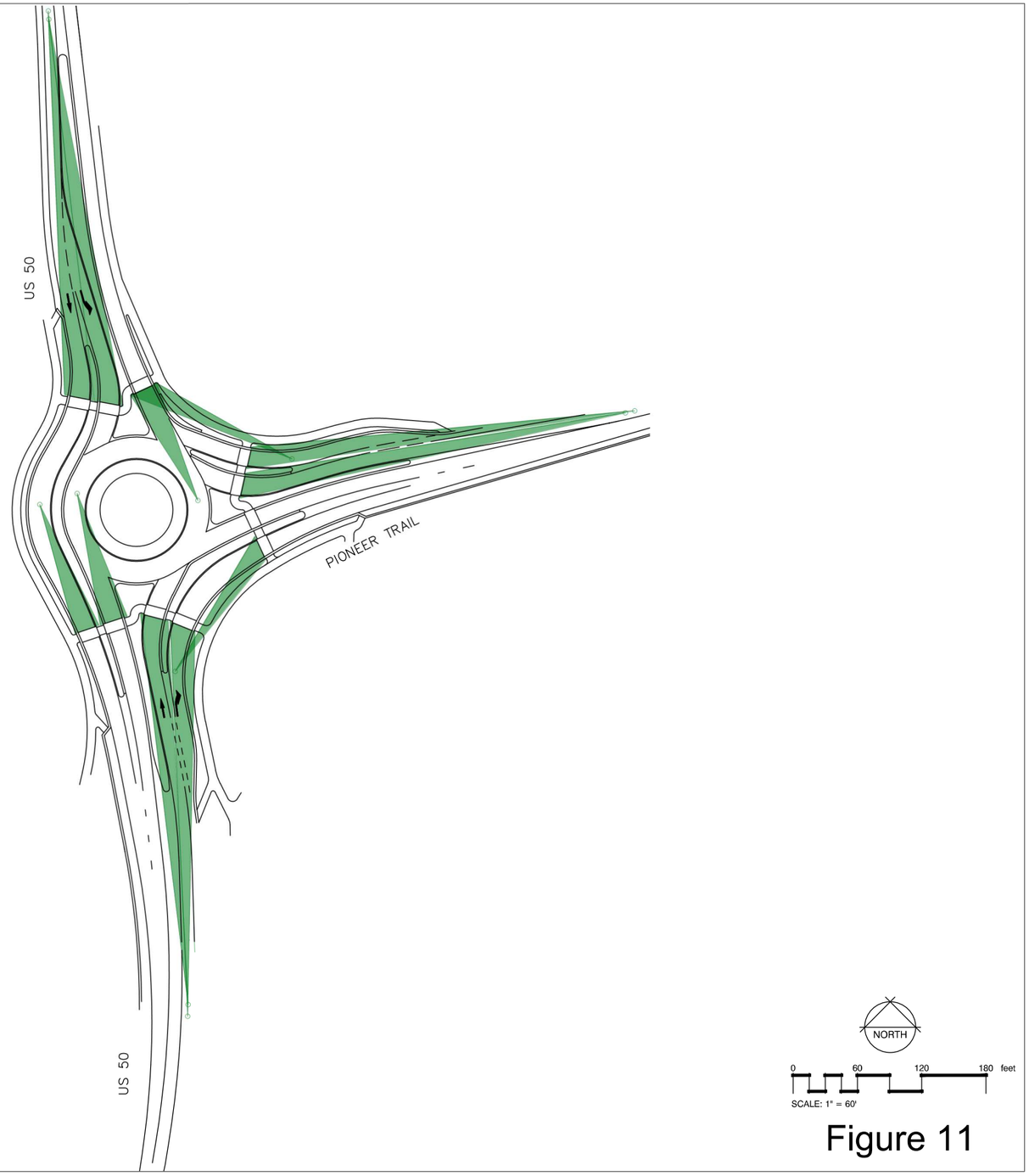
Pioneer Trail/US50 Intersection Safety Improvement Project

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STOPPING SIGHT DISTANCE - PEDESTRIANS

LEGEND:
SIGHT TRIANGLE



Approach	Design Speed (mph)	Stopping Sight Distance (feet)
Northbound Entrance Route 50	45.0	360.0
Northbound Circulating from Route 50 (V2)	18.2	115.8
Northbound Right from Route 50	20.9	129.4
Southbound Entrance Route 50	45.0	360.0
Southbound Circulating Route 50 (V2)	19.7	123.3
Southbound Entrance from Route 50 Bypass	45.0	360.0
Southbound Circulating from Route 50 Bypass (V2)	20.0	125.2
Westbound Entrance from Pioneer Trail	45.0	360.0
Westbound Right from Pioneer Trail (V5)	24.5	147.4

Notes: 1. Stopping Sight Distance criteria obtained from Caltrans HDM.
2. To be conservative, fastpath speeds were used for right turn movements.

NORTH

0 60 120 180 feet
SCALE: 1" = 60'

Figure 11

Pioneer Trail/US50 Intersection Safety Improvement Project

Meyers, California

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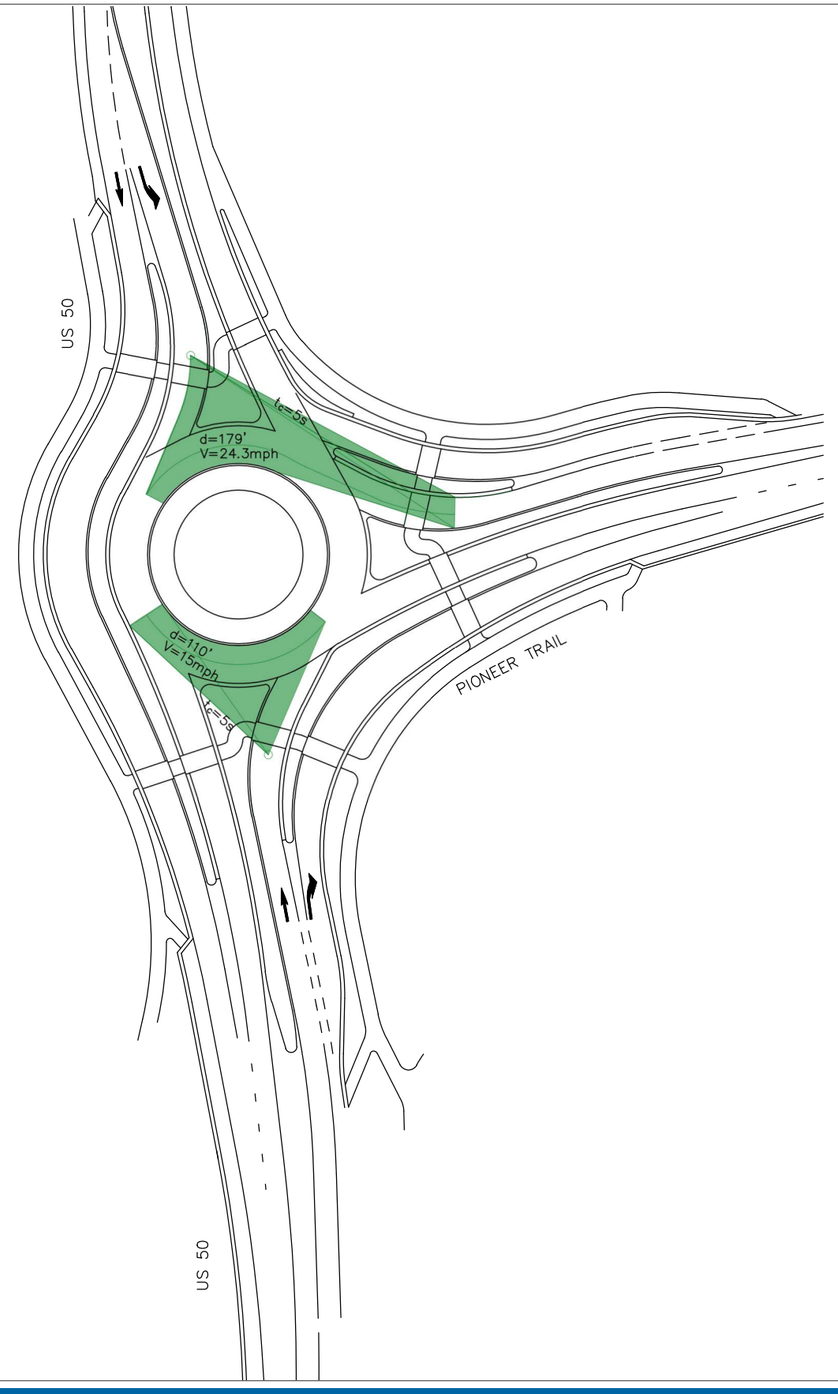
INTERSECTION SIGHT DISTANCE (NB/SB)

LEGEND:

SIGHT TRIANGLE

t_c CRITICAL HEADWAY FOR ENTERING THE MAJOR ROADS
V DESIGN SPEED (R4) OF CONFLICTING MOVEMENT (MPH)
d LENGTH OF ENTERING/CIRCULATING LEG OF SIGHT TRIANGLE

NOTE:
FOR CALCULATING THE SIGHT TRIANGLE FOR SOUTHBOUND TRAFFIC THE WESTBOUND LEFT LEFT TURN FASTPATH SPEED WAS USED DUE TO A LACK OF CIRCULATING CONFLICT SPEED.



Approach	Conflicting Speed (mph)	Sight Triangle Length (feet)
Northbound Route 50		
Entering Leg (D1, N/A)	N/A	N/A
Circulating Leg (D2, Northbound Route 50)	15.0	110.2
Southbound Route 50		
Entering Leg (D1, Pioneer Trail)	24.3	178.7
Circulating Leg (D2, N/A)	N/A	N/A
Notes: Intersection Sight Distance criteria obtained from NCHRP Report 672 with 5.0 second Critical Headway (tc)		

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 12

Pioneer Trail/US50 Intersection Safety Improvement Project

Meyers, California

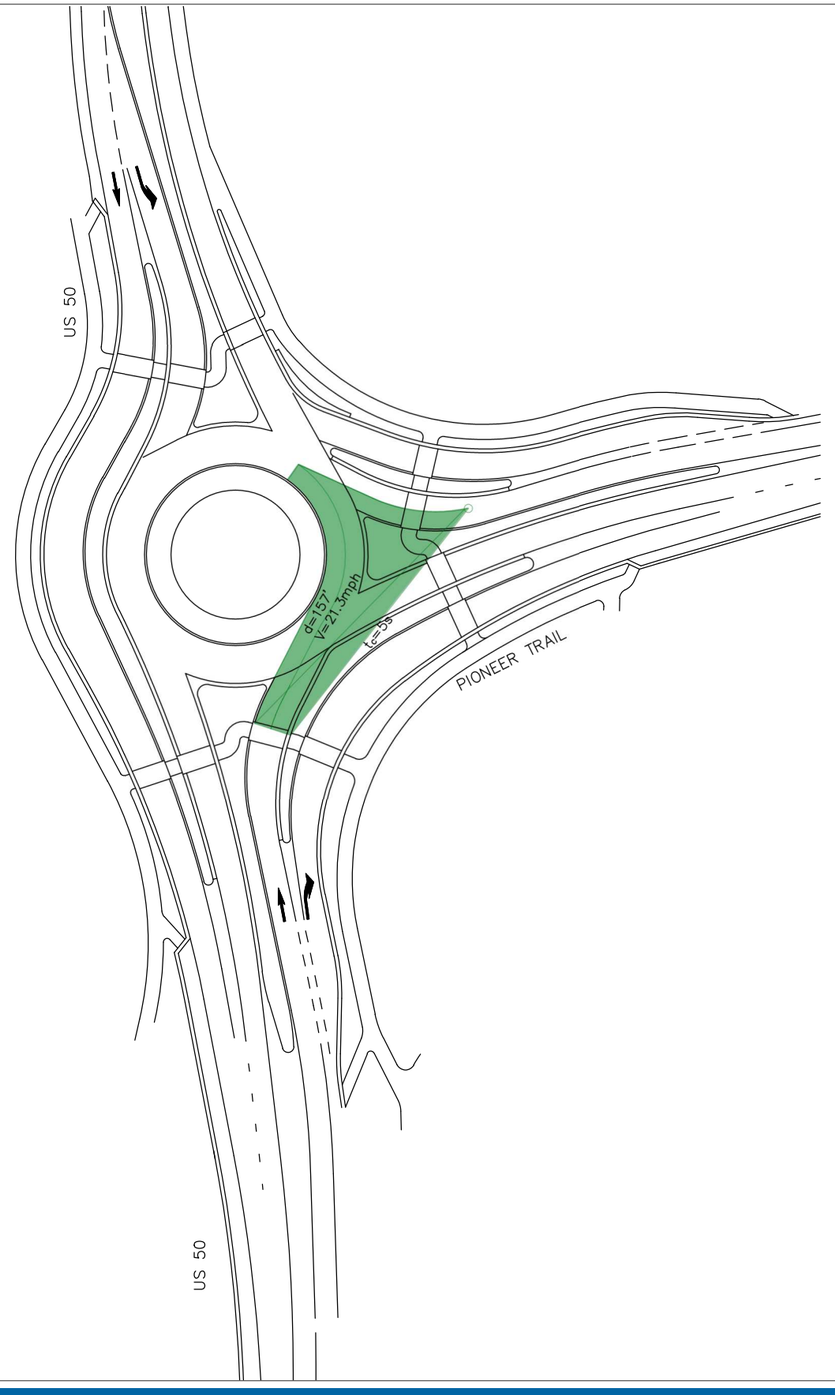
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INTERSECTION SIGHT DISTANCE (WB)

LEGEND:

SIGHT TRIANGLE

t_c CRITICAL HEADWAY FOR ENTERING THE MAJOR ROADS
V DESIGN SPEED (R4) OF CONFLICTING MOVEMENT (MPH)
d LENGTH OF ENTERING/CIRCULATING LEG OF SIGHT TRIANGLE



Approach	Conflicting Speed (mph)	Sight Triangle Length (feet)
Westbound Pioneer Trail		
Entering Leg (D1, Southbound Route 50)	21.3	156.5
Circulating Leg (D2, N/A)	N/A	N/A
Notes: Intersection Sight Distance criteria obtained from NCHRP Report 672 with 5.0 second Critical Headway (tc)		

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 13

Pioneer Trail/US50 Intersection Safety Improvement Project

Meyers, California

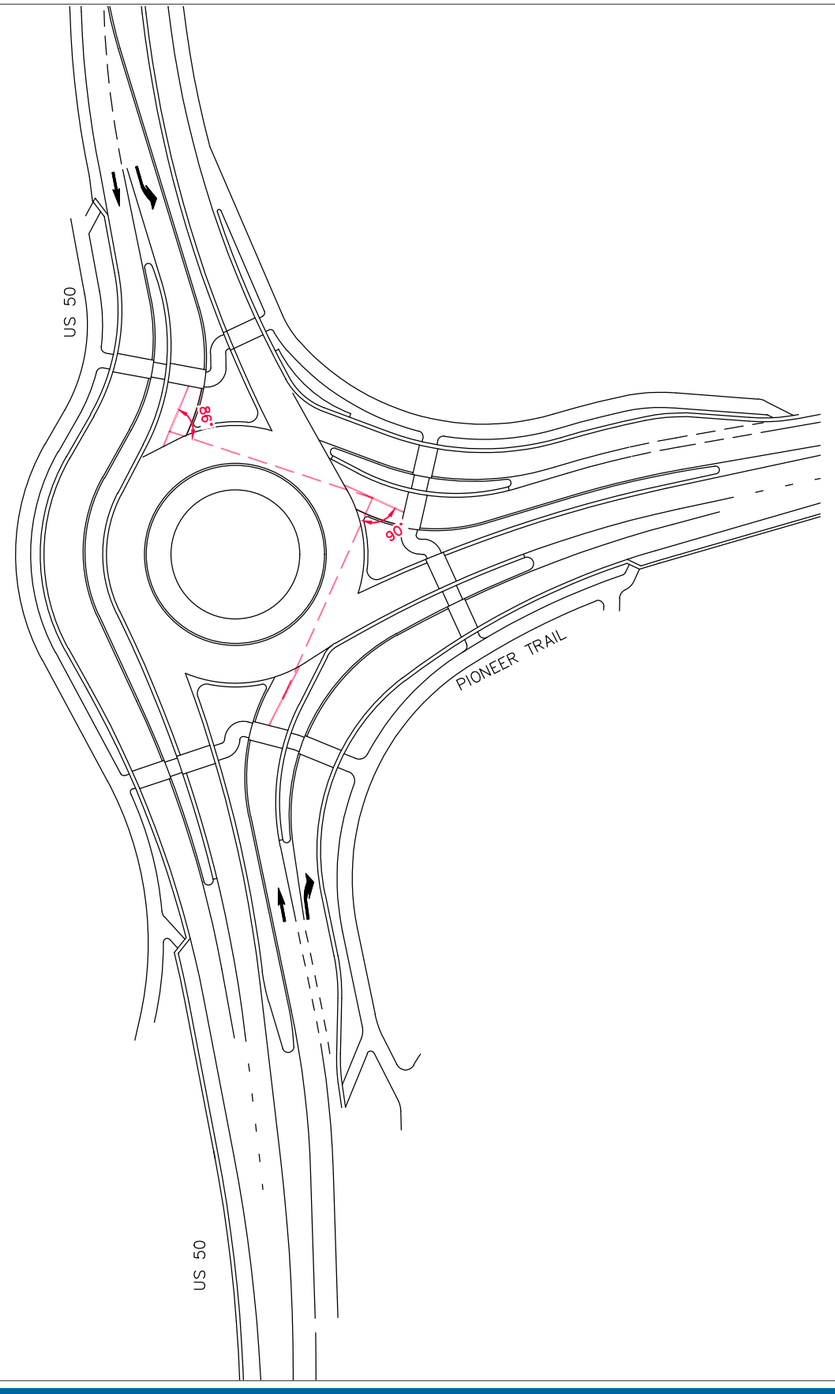
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INTERSECTION VIEW ANGLES

NOTE:

VALUES SHOWN ARE THE ANGLE FOR THE DRIVER TO VIEW ONCOMING TRAFFIC WITHIN THE CIRCULATORY ROADWAY AND AT THE ROUNDABOUT ENTRANCE PER NCHRP 672 GUIDELINES. VIEW ANGLES SHOULD BE EQUAL TO OR GREATER THAN 75°.



NORTH

0 40 80 120 feet

SCALE: 1" = 40'

Figure 14

Pioneer Trail/US50 Intersection Safety Improvement Project

Meyers, California

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Appendix D. Cost Estimates and Life Cycle Costs

Preliminary Cost Estimate

US 50 at Pioneer Trail Intersection Safety Improvement Project

Type of Estimate : Planning Level (PSR)
Program Code :
Project Limits : US 50 at Pioneer Trail Intersection
Description: Single lane roundabout with southbound bypass lane
Scope : Assumes 25% of existing pavement is overlaid with 3" HMA, 9"/24" in new pavement areas
Alternative :

	Current Cost	Escalated Cost
ROADWAY ITEMS	$ 5,245,500	$ 5,245,500
STRUCTURE ITEMS	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 5,245,500	$ 5,245,500
RIGHT OF WAY	$ -	$ -
TOTAL CAPITAL OUTLAY COST	$ 5,246,000	$ 5,246,000
PR/ED SUPPORT	$ -	$ -
PS&E SUPPORT	$ -	$ -
RIGHT OF WAY SUPPORT	$ -	$ -
CONSTRUCTION SUPPORT	$ -	$ -
TOTAL CAPITAL OUTLAY SUPPORT COST*	$ -	$ -
TOTAL PROJECT COST	$ 5,250,000	$ 5,250,000

If Project has been programmed enter Programmed Amount $ -

	Month / Year
Date of Estimate (Month/Year)	1 / 2020
Estimated Date of Construction Start (Month/Year)	6 / 2022
Number of Working Days	150 Working Days
Estimated Mid-Point of Construction (Month/Year)	10 / 2022
Number of Plant Establishment Days	Days

Estimated Project Schedule

PID Approval	March-20
PA/ED Approval	December-20
PS&E	December-21
RTL	February-22
Begin Construction	June-22

Approved by Project Manager

(xxx) xxx-xxxx

Project Manager **Date** **Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	457,200
2	**Pavement Structural Section**	$	1,534,400
3	**Drainage**	$	255,100
4	**Specialty Items**	$	196,300
5	**Environmental**	$	315,300
6	**Traffic Items**	$	728,200
7	**Detours**	$	95,000
8	**Minor Items**	$	179,100
9	**Roadway Mobilization**	$	376,100
10	**Supplemental Work**	$	341,600
11	**State Furnished**	$	83,000
12	**Contingencies**	$	684,200
13	**Overhead**	$	-
	TOTAL ROADWAY ITEMS	**$**	**5,245,500**

Estimate Prepared By	Ron Boyle P.E.	1/14/2020	916 782 8688
	Name and Title	Date	Phone
Estimate Reviewed By			
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
160101	Clearing & Grubbing	LS	1	x	50,000.00	=	$	50,000
170101	Develop Water Supply	LS	1	x	18,250.00	=	$	18,250
190101	Roadway Excavation	CY	7,928	x	41.00	=	$	325,048
190103	Roadway Excavation (Type Y) ADL	CY		x		=	$	-
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Impored Borrow	CY	426	x	150.00	=	$	63,900
198007	Imported Material (Shoulder Backing)	TON		x		=	$	-

TOTAL EARTHWORK SECTION ITEMS	$	457,200

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
150860	Remove Base and Surfacing	CY		x	68.00	=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	2,023	x	10.00	=	$	20,230
1532XX	Remove Concrete (type)	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
260201	Class 2 Aggregate Base	CY	6,072	x	81.00	=	$	491,832
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
365001	Sand Cover	TON		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	4,758	x	180.00	=	$	856,440
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON		x		=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD	10,747	x	9.50	=	$	102,097
39405X	Shoulder Rumber Strip *(HMA, Type XX Indentation)*	STA		x		=	$	-
394071	Place Hot Mix Asphalt Dike	LF		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQYD		x		=	$	-
397005	Tack Coat	TON	5	x	2,600.00	=	$	13,000
401000	Concrete Pavement (truck apron)	CY	71	x	715.00	=	$	50,765
401108	Replace Concrete Pavement (Rapid Strength Concrete)	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404094	Seal Longitudinal Isolation Joint	LF		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
413115	Seal Existing Concrete Pavement Joint	LF		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
731502	Minor Concrete (Misc. Const)	CY		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT		x		=	$	-
XXXXXX	Some Item			x		=	$	-

TOTAL STRUCTURAL SECTION ITEMS	$	1,534,400

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
150206	Abandon Culvert	LF		x		=	$	-
150805	Remove Culvert	LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
193114	Sand Backfill	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
510512	Minor Concrete (Box Culvert)	CY		x		=	$	-
62XXXX	XXX" APC Pipe	LF		x		=	$	-
64XXXX	18" Plastic Pipe	LF	800	x	75.00	=	$	60,000
65XXXX	XXX" RCP Pipe	LF		x		=	$	-
66XXXX	XXX" CSP Pipe	LF		x		=	$	-
68XXXX	Edge Drain	LF		x		=	$	-
69XXXX	XXX" Pipe Downdrain	LF		x		=	$	-
70XXXX	XXX" Pipe Inlet	LF		x		=	$	-
70XXXX	XXX" Pipe Riser	LF		x		=	$	-
70XXXX	XXX" Flared End Section	EA	3	x	1,200.00	=	$	3,600
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY	15	x	100.00	=	$	1,500
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
729010	Rock Slope Protection Fabric	SQYD		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x	4.75	=	$	-
XXXXXX	Additional Drainage - Water Quality	LS	1	x	100,000.00	=	$	100,000
510094	Structural Concrete Drainage Inlet	EA	20	x	4,500.00	=	$	90,000

TOTAL DRAINAGE ITEMS $ 255,100

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	4,500.00	=	$	4,500
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Terminal Systems	EA		x		=	$	-
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
153250	Remove Sound Wall	SQFT		x		=	$	-
190110	Lead Compliance Plan	LS	1	x	3,000.00	=	$	3,000
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY		x		=	$	-
731504	Minor Concrete (curb and Gutter)	CY	94	x	853.00	=	$	80,182
731511	Minor Concrete (Island Paving)	CY	84	x	933.00	=	$	78,372
5110XX	Architectural Treatment *(Insert Type)*	SQFT		x		=	$	-
511048	Apply Anti-Graffiti Coating	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall *(Insert Type)*	SQFT		x		=	$	-
518002	Sound Wall (Masonry Block)	SQFT		x		=	$	-
520103	Bar Reinf. Steel (Retaining Wall)	LB		x		=	$	-
80XXXX	Fence (*Insert Type*)	LF		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
8395XX	Alternative Flared Terminal System	EA		x		=	$	-
8395XX	End Anchor Assembly (*Insert Type*)	EA		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839XXX	Crash Cushion *(Insert Type)*	EA		x		=	$	-
83XXXX	Concrete Barrier *(Insert Type)*	LF		x		=	$	-
730070	Dectectable Warning Surface	SQFT	630	x	48.00	=	$	30,240

TOTAL SPECIALTY ITEMS $ 196,300

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

m code		Unit	Quantity		Unit Price ($)			Cost
	Biological Mitigation	LS		x		=	$	-
071325	TEMPORARY REINFORCED SILT FENCE	LF	1,200	x	5.00	=	$	6,000
071325	Temporary Fence (Type ESA)	LF	1,900	x	8.00	=	$	15,200

Subtotal Environmental $ 6,000

5B - LANDSCAPE AND IRRIGATION

m code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS		x		=	$	-
20XXXX	XXX" (*Insert Type*) Conduit *(Use for Irrigation x-overs)*	LF		x		=	$	-
20XXXX	Extend XXX" *(Insert Type)* Conduit *Use for Extension of Irrigation x-overs)*	LF		x		=	$	-
201700	Imported Topsoil	CY		x		=	$	-
2030XX	Erosion Control (Type __)	SQYD	6,207	x	2.70	=	$	16,759
203021	Fiber Rolls	LF		x	15.00	=	$	-
203026	Move In/ Move Out (Erosion Control)	EA	6	x	500.00	=	$	3,000
204099	Plant Establishment Work	LS		x		=	$	-
205035	Wood Mulch	CY	228	x	120.00	=	$	27,360
208000	Irrigation System	LS		x		=	$	-
208304	Water Meter	EA		x		=	$	-
209801	Maintenance Vehicle Pullout	EA		x		=	$	-
036370	Unmortared Rock Blanket	SF	6,860	x	9.50	=	$	65,170
036376	Boulder	EA	12	x	800.00	=	$	9,600

Subtotal Landscape and Irrigation $ 47,119

5C - NPDES

m code		Unit	Quantity		Unit Price ($)			Cost
074016	Construction Site Management	LS	1	x	75,000.00	=	$	75,000
074017	Prepare WPCP	LS		x		=	$	-
074019	Prepare SWPPP	LS	1	x	3,200.00	=	$	3,200
130530	Temporary Hydraulic Mulch	SQYD	6,207	x	3.00	=	$	18,621
130570	Temporary Cover	SQYD	1,552	x	10.00	=	$	15,520
074028	Temporary Fiber Roll	LF	1,862	x	15.00	=	$	27,930
074032	Temporary Concrete Washout Facility	EA	1	x	5,000.00	=	$	5,000
074033	Temporary Construction Entrance	EA	1	x	5,000.00	=	$	5,000
074035	Temporary Check Dam	LF	100	x	13.00	=	$	1,300
074037	Move In/ Move Out (Temporary Erosion Control)	EA	6	x	600.00	=	$	3,600
074038	Temp. Drainage Inlet Protection	EA	6	x	325.00	=	$	1,950
074041	Street Sweeping	LS	1	x	100,000.00	=	$	100,000
074042	Temporary Concrete Washout (Portable)	LS	1	x	5,000.00	=	$	5,000
130310	Rain Event Action Plan	EA	9	x	500.00	=	$	4,500

Supplemental Work for NPDES

(These costs are not accounted in total here but under Supplemental Work on sheet 7 of 11).

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS	1	x	3,500.00	=	$	3,500
XXXXXX	Some Item							

Subtotal NPDES (Without Supplemental Work) $ 262,121

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

TOTAL ENVIRONMENTAL $ 315,300

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
150760	Remove Sign Structure	EA		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
5602XX	Furnish Sign Structure	LB		x		=	$	-
5602XX	Install Sign Structure	LB		x		=	$	-
56XXXX	XXX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	5,000.00	=	$	5,000
860810	Inductive Loop Detectors	EA		x		=	$	-
86055X	Lighting & Sign Illumination	LS	1	x	100,000.00	=	$	100,000
8607XX	Interconnection Facilities	LS		x		=	$	-
8609XX	Traffic Monitoring Stations	LS		x		=	$	-
860XXX	Modify Existing Electrical/Remove Signal	LS	1	x	75,000.00	=	$	75,000
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Flashing Beacon System	LS	1	x	25,000.00	=	$	25,000

Subtotal Traffic Electrical *$ 180,000*

6B - Traffic Signing and Striping

m code		Unit	Quantity		Unit Price ($)			Cost
120090	Construction Area Signs	LS	1	x	7,000.00	=	$	7,000
150701	Remove Yellow Painted Traffic Stripe	LF		x		=	$	-
150710	Remove Traffic Stripe	LF		x		=	$	-
150713	Remove Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
566011	Roadside Sign (One Post)	EA	30	x	250.00	=	$	7,500
566012	Roadside Sign (Two Post)	EA	6	x	750.00	=	$	4,500
560XXX	Furnish Sign Panels	SQFT		x		=	$	-
560XXX	Install Sign Panels	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
84XXXX	Permanent Pavement Delineation	LS	1	x	60,000.00	=	$	60,000

Subtotal Traffic Signing and Striping *$ 79,000*

6C - Stage Construction and Traffic Handling

m code		Unit	Quantity		Unit Price ($)			Cost
120100	Traffic Control System	LS	1	x	350,000.00	=	$	350,000
120120	Type III Barricade	EA	6	x	200.00	=	$	1,200
120143	Temporary Pavement Delineation	LF	10,000	x	1.00	=	$	10,000
12016X	Channelizer	EA		x		=	$	-
128650	Portable Changeable Message Signs	EA	3	x	7,500.00	=	$	22,500
129000	Temporary Railing (Type K)	LF	1,500	x	37.00	=	$	55,500
129100	Temp. Crash Cushion Module	EA		x		=	$	-
129099A	Traffic Plastic Drum	EA	100	x	90.00	=	$	9,000
839603A	Temporary Crash Cushion (ADIEM)	EA	6	x	3,500.00	=	$	21,000
XXXXXX	Some Item							

Subtotal Stage Construction and Traffic Handling *$ 469,200*

TOTAL TRAFFIC ITEMS **$ 728,200**

SECTION 7: DETOURS

Include constructing, maintaining, and removal

m code		Unit	Quantity		Unit Price ($)			Cost
0713XX	Temporary Fence	LF		x		=	$	-
07XXXX	Temporary Drainage	LS	1	x	10,000.00	=	$	10,000
120143	Temporary Pavement Delineation	LF	1	x	10,000.00	=	$	10,000
1286XX	Temporary Signals	EA	1	x	75,000.00	=	$	75,000
129000	Temporary Railing (Type K)	LF		x		=	$	-
190101	Roadway Excavation	CY		x		=	$	-
198001	Imported Borrow	CY		x		=	$	-
198050	Embankment	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
260201	Class 2 Aggregate Base	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
XXXXXX	Signs	LS		x		=	$	-

TOTAL DETOURS **$ 95,000**

SUBTOTAL SECTIONS 1-7 $ 3,581,500

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items								
	ADA Items				1.0%		$	35,815
8B - Bike Path Items								
	Bike Path Items				1.0%		$	35,815
8C - Other Minor Items								
	Other Minor Items				3.0%		$	107,445
	Total of Section 1-7	$	3,581,500	x	5.0%	=	$	179,075

TOTAL MINOR ITEMS **$ 179,100**

SECTIONS 9: MOBILIZATION

ı code								
999990	Total Section 1-8	$	3,760,600	x	10%	=	$	376,060

TOTAL MOBILIZATION **$ 376,100**

SECTION 10: SUPPLEMENTAL WORK

m code		Unit	Quantity		Unit Price ($)			Cost
066015	Federal Trainee Program	LS		x		=	$	-
066063	Traffic Management Plan - Public Information	LS	1	x	50,000.00	=	$	50,000
066090	Maintain Traffic	LS	1	x	100,000.00	=	$	100,000
066094	Value Analysis	LS		x		=	$	-
066204	Remove Rock & Debris	LS		x		=	$	-
066222	Locate Existing Cross-Over	LS		x		=	$	-
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$	-
066700	Partnering	LS		x		=	$	-
066866	Operation of Existing Traffic Management System Elements During Construction	LS		x		=	$	-
066920	Dispute Review Board	LS		x		=	$	-
XXXXXX	Some Item			x		=	$	-
	*Cost of **NPDES** Supplemental Work specified in Section 5C*					=	$	3,500
	Total Section 1-8	$	3,760,600		5%	=	$	188,030

TOTAL SUPPLEMENTAL WORK **$ 341,600**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066063	Public Information	LS		x		=	$0
066105	RE Office	LS	1	x	35,000.00	=	$35,000
066803	Padlocks	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
066062A	COZEEP Expenses	LS	1	x	48,000.00	=	$48,000
06684X	Ramp Meter Controller Assembly	LS		x		=	$0
06684X	TMS Controller Assembly	LS		x		=	$0
06684X	Traffic Signal Controller Assembly	LS	0	x	35,000.00	=	$0
XXXXXX	Some Item						

Total Section 1-8	$	3,760,600	0%	=	$	-

TOTAL STATE FURNISHED	**$83,000**

SECTION 12: TIME-RELATED OVERHEAD

Estiamted Time-Releated Overhead (TRO) Percentage (0% to 10%) = 5%

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	150	X	0	=	$0

TOTAL TIME-RELATED OVERHEAD	**$0**

SECTION 13: CONTINGENCY

(Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-11	$	4,561,300	x	15%	=	$684,195

TOTAL CONTINGENCY	**$684,200**

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Name	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX	57-XXX	57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0.00 LF	0.00 LF	0.00 LF
Total Length (Feet)	0.00 LF	0.00 LF	0.00 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Structure Depth (Feet)	0.00 LF	0.00 LF	0.00 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0.00	$0.00	$0.00
COST OF EACH STRUCTURE	**$0.00**	**$0.00**	**$0.00**

DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Name	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX	57-XXX	57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0.00 LF	0.00 LF	0.00 LF
Total Length (Feet)	0.00 LF	0.00 LF	0.00 LF
Total Area (Square Feet)	0 SQFT	0.00 SQFT	0.0 SQFT
Structure Depth (Feet)	0.00 LF	0.00 LF	0.00 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0.00	$0.00	$0.00
COST OF EACH STRUCTURE	**$0.00**	**$0.00**	**$0.00**

TOTAL COST OF BRIDGES	**$0.00**
TOTAL COST OF BUILDINGS	**$0.00**
TOTAL COST OF STRUCTURES[1]	**$0.00**

Estimate Prepared By: _____ _____
XXXXXXXXXXXXXXXX ------ Division of Structures Date

[1]Structure's Estimate includes Overhead and Mobilization.
Add more sheets if needed. Call them 9a, 9b, 9c, …, etc

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill,	$	0
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	0
C)	C1)	Utility Relocation (State Share)	$	0
	C2)	Potholing (Design Phase)	$	0
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	$	0
G)		Title and Escrow	$	0
H)		Environmental Review	$	0
I)		Condemnation Settlements 0% (Items G & H applied to items A + B)	$	0
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	0

L) **TOTAL RIGHT OF WAY ESTIMATE $0**

(Excluding Item #8 - Hazardous Waste)

M) **TOTAL R/W ESTIMATE: Escalated $0**

N) **Right of Way Support $ 0**

Support Cost Estimate Prepared By	Project Coordinator[1]	Phone
Utility Estimate Prepared By	Utiliy Coordinator[2]	Phone
R/W Acquistion Estimate Prepared By	Right of Way Estimator[3]	Phone

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

Preliminary Cost Estimate

US 50 at Pioneer Trail Intersection Safety Improvement Project

Type of Estimate : Planning Level (PSR)
Program Code :
Project Limits : US 50 at Pioneer Trail Intersection
Description: Enlarged Intersection with Traffic Signal
Scope : Includes 3" HMA overlay of existing pavement and 9"/24" in new pavement areas
Alternative :

	Current Cost	Escalated Cost
ROADWAY ITEMS	$ 4,940,900	$ 4,940,900
STRUCTURE ITEMS	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 4,940,900	$ 4,940,900
RIGHT OF WAY	$ -	$ -
TOTAL CAPITAL OUTLAY COST	$ 4,941,000	$ 4,941,000
PR/ED SUPPORT	$ -	$ -
PS&E SUPPORT	$ -	$ -
RIGHT OF WAY SUPPORT	$ -	$ -
CONSTRUCTION SUPPORT	$ -	$ -
TOTAL CAPITAL OUTLAY SUPPORT COST*	$ -	$ -
TOTAL PROJECT COST	$ 4,950,000	$ 4,950,000

If Project has been programmed enter Programmed Amount $ -

Month / Year
Date of Estimate (Month/Year) 1 / 2020

Estimated Date of Construction Start (Month/Year) 6 / 2022

Number of Working Days 125 Working Days

Month / Year
Estimated Mid-Point of Construction (Month/Year) 10 2022

Number of Plant Establishment Days Days

Estimated Project Schedule

PID Approval	March-20
PA/ED Approval	December-20
PS&E	December-21
RTL	February-22
Begin Construction	June-22

Approved by Project Manager

(xxx) xxx-xxxx

Project Manager **Date** **Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	282,500
2	**Pavement Structural Section**	$	1,527,600
3	**Drainage**	$	195,100
4	**Specialty Items**	$	94,000
5	**Environmental**	$	315,300
6	**Traffic Items**	$	898,700
7	**Detours**	$	20,000
8	**Minor Items**	$	166,700
9	**Roadway Mobilization**	$	350,000
10	**Supplemental Work**	$	328,500
11	**State Furnished**	$	118,000
12	**Contingencies**	$	644,500
13	**Overhead**	$	-
	TOTAL ROADWAY ITEMS	**$**	**4,940,900**

Estimate Prepared By	Ron Boyle P.E.	1/14/2020	916 782 8688
	Name and Title	Date	Phone
Estimate Reviewed By			
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
160101	Clearing & Grubbing	LS	1	x	50,000.00	=	$	50,000
170101	Develop Water Supply	LS	1	x	18,250.00	=	$	18,250
190101	Roadway Excavation	CY	5,225	x	41.00	=	$	214,225
190103	Roadway Excavation (Type Y) ADL	CY		x		=	$	-
190105	Roadway Excavation (Type Z-2) ADL	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Impored Borrow	CY	0	x	150.00	=	$	-
198007	Imported Material (Shoulder Backing)	TON		x		=	$	-

TOTAL EARTHWORK SECTION ITEMS	$	282,500

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
150860	Remove Base and Surfacing	CY		x	68.00	=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	8,983	x	10.00	=	$	89,830
1532XX	Remove Concrete (type)	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
260201	Class 2 Aggregate Base	CY	4,450	x	81.00	=	$	360,450
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
365001	Sand Cover	TON		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	4,711	x	180.00	=	$	847,980
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON		x		=	$	-
393003	Geosynthetic Pavement Interlayer	SQYD	15,411	x	9.50	=	$	146,405
39405X	Shoulder Rumber Strip *(HMA, Type XX Indentation)*	STA		x		=	$	-
394071	Place Hot Mix Asphalt Dike	LF		x		=	$	-
394090	Place Hot Mix Asphalt (Misc. Area)	SQYD		x		=	$	-
397005	Tack Coat	TON	5	x	2,600.00	=	$	13,000
401000	Concrete Pavement (truck apron)	CY	0	x	715.00	=	$	-
401108	Replace Concrete Pavement (Rapid Strength Concrete)	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404094	Seal Longitudinal Isolation Joint	LF		x		=	$	-
413112A	Repair Spalled Joints (Polyester Grout)	SQYD		x		=	$	-
413115	Seal Existing Concrete Pavement Joint	LF		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
731502	Minor Concrete (Misc. Const)	CY		x		=	$	-
731530	Minor Concrete (Textured Paving)	SQFT		x		=	$	-
XXXXXX	Bike Path	SQFT	3,492	x	20.00	=	$	69,840

TOTAL STRUCTURAL SECTION ITEMS	$	1,527,600

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
150206	Abandon Culvert	LF		x		=	$	-
150805	Remove Culvert	LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
193114	Sand Backfill	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
510512	Minor Concrete (Box Culvert)	CY		x		=	$	-
62XXXX	XXX" APC Pipe	LF		x		=	$	-
64XXXX	18" Plastic Pipe	LF	600	x	75.00	=	$	45,000
65XXXX	XXX" RCP Pipe	LF		x		=	$	-
66XXXX	XXX" CSP Pipe	LF		x		=	$	-
68XXXX	Edge Drain	LF		x		=	$	-
69XXXX	XXX" Pipe Downdrain	LF		x		=	$	-
70XXXX	XXX" Pipe Inlet	LF		x		=	$	-
70XXXX	XXX" Pipe Riser	LF		x		=	$	-
70XXXX	XXX" Flared End Section	EA	3	x	1,200.00	=	$	3,600
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY	15	x	100.00	=	$	1,500
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
729010	Rock Slope Protection Fabric	SQYD		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x	4.75	=	$	-
XXXXXX	Additional Drainage - Water Quality	LS	1	x	100,000.00	=	$	100,000
510094	Structural Concrete Drainage Inlet	EA	10	x	4,500.00	=	$	45,000

TOTAL DRAINAGE ITEMS $ 195,100

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
070012	Progress Schedule (Critical Path Method)	LS	1	x	4,500.00	=	$	4,500
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Terminal Systems	EA		x		=	$	-
1532XX	Remove Barrier (*Insert Type)*	LF		x		=	$	-
153250	Remove Sound Wall	SQFT		x		=	$	-
190110	Lead Compliance Plan	LS	1	x	3,000.00	=	$	3,000
49XXXX	CIDH Concrete Piling *(Insert Diameter)*	LF		x		=	$	-
510060	Structural Concrete (Retaining Wall)	CY		x		=	$	-
731504	Minor Concrete (curb and Gutter)	CY	61	x	853.00	=	$	52,033
731511	Minor Concrete (Island Paving)	CY	23	x	933.00	=	$	21,459
5110XX	Architectural Treatment *(Insert Type)*	SQFT		x		=	$	-
511048	Apply Anti-Graffiti Coating	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall *(Insert Type)*	SQFT		x		=	$	-
518002	Sound Wall (Masonry Block)	SQFT		x		=	$	-
520103	Bar Reinf. Steel (Retaining Wall)	LB		x		=	$	-
80XXXX	Fence (*Insert Type*)	LF		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
83954X	Transition Railing *(Insert Type)*	EA		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
8395XX	Alternative Flared Terminal System	EA		x		=	$	-
8395XX	End Anchor Assembly (*Insert Type*)	EA		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
839XXX	Crash Cushion *(Insert Type)*	EA		x		=	$	-
83XXXX	Concrete Barrier *(Insert Type)*	LF		x		=	$	-
730070	Dectectable Warning Surface	SQFT	270	x	48.00	=	$	12,960

TOTAL SPECIALTY ITEMS $ 94,000

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Biological Mitigation	LS		x		=	$	-
071325	TEMPORARY REINFORCED SILT FENCE	LF	1,200	x	5.00	=	$	6,000
071325	Temporary Fence (Type ESA)	LF	1,900	x	8.00	=	$	15,200

Subtotal Environmental $ 6,000

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS		x		=	$	-
20XXXX	XXX" (*Insert Type*) Conduit *(Use for Irrigation x-overs)*	LF		x		=	$	-
20XXXX	Extend XXX" *(Insert Type)* Conduit *(Use for Extension of Irrigation x-overs)*	LF		x		=	$	-
201700	Imported Topsoil	CY		x		=	$	-
2030XX	Erosion Control (Type __)	SQYD	6,207	x	2.70	=	$	16,759
203021	Fiber Rolls	LF		x		=	$	-
203026	Move In/ Move Out (Erosion Control)	EA	6	x	500.00	=	$	3,000
204099	Plant Establishment Work	LS		x		=	$	-
205035	Wood Mulch	CY	228	x	120.00	=	$	27,360
208000	Irrigation System	LS		x		=	$	-
208304	Water Meter	EA		x		=	$	-
209801	Maintenance Vehicle Pullout	EA		x		=	$	-
036370	Unmortared Rock Blanket	SF	1,910	x	9.50	=	$	18,145
036376	Boulder	EA	0	x	800.00	=	$	-

Subtotal Landscape and Irrigation $ 47,119

5C - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
074016	Construction Site Management	LS	1	x	75,000.00	=	$	75,000
074017	Prepare WPCP	LS		x		=	$	-
074019	Prepare SWPPP	LS	1	x	3,200.00	=	$	3,200
130530	Temporary Hydraulic Mulch	SQYD	6,207	x	3.00	=	$	18,621
130570	Temporary Cover	SQYD	1,552	x	10.00	=	$	15,520
074028	Temporary Fiber Roll	LF	1,862	x	15.00	=	$	27,930
074032	Temporary Concrete Washout Facility	EA	1	x	5,000.00	=	$	5,000
074033	Temporary Construction Entrance	EA	1	x	5,000.00	=	$	5,000
074035	Temporary Check Dam	LF	100	x	13.00	=	$	1,300
074037	Move In/ Move Out (Temporary Erosion Control)	EA	6	x	600.00	=	$	3,600
074038	Temp. Drainage Inlet Protection	EA	6	x	325.00	=	$	1,950
074041	Street Sweeping	LS	1	x	100,000.00	=	$	100,000
074042	Temporary Concrete Washout (Portable)	LS	1	x	5,000.00	=	$	5,000
130310	Rain Event Action Plan	EA	9	x	500.00	=	$	4,500

Supplemental Work for NPDES

(These costs are not accounted in total here but under Supplemental Work on sheet 7 of 11).

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS	1	x	3,500.00	=	$	3,500
XXXXXX	Some Item							

Subtotal NPDES (Without Supplemental Work) $ 262,121

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

TOTAL ENVIRONMENTAL $ 315,300

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
150760	Remove Sign Structure	EA		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
5602XX	Furnish Sign Structure	LB		x		=	$	-
5602XX	Install Sign Structure	LB		x		=	$	-
56XXXX	XXX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
860090	Maintain Existing Traffic Management System Elements During Construction	LS	1	x	5,000.00	=	$	5,000
860810	Inductive Loop Detectors	EA		x		=	$	-
86055X	Lighting & Sign Illumination	LS	1	x	50,000.00	=	$	50,000
8607XX	Interconnection Facilities	LS		x		=	$	-
8609XX	Traffic Monitoring Stations	LS		x		=	$	-
860XXX	Modify Existing Electrical/Modify Signal	LS	1	x	450,000.00	=	$	450,000
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-
8611XX	Ramp Metering System (Location X)	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Flashing Beacon System	LS	1	x	25,000.00	=	$	25,000

Subtotal Traffic Electrical *$ 505,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
120090	Construction Area Signs	LS	1	x	7,000.00	=	$	7,000
150701	Remove Yellow Painted Traffic Stripe	LF		x		=	$	-
150710	Remove Traffic Stripe	LF		x		=	$	-
150713	Remove Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
566011	Roadside Sign (One Post)	EA	12	x	250.00	=	$	3,000
566012	Roadside Sign (Two Post)	EA	6	x	750.00	=	$	4,500
560XXX	Furnish Sign Panels	SQFT		x		=	$	-
560XXX	Install Sign Panels	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
84XXXX	Permanent Pavement Delineation	LS	1	x	60,000.00	=	$	60,000

Subtotal Traffic Signing and Striping *$ 74,500*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120100	Traffic Control System	LS	1	x	200,000.00	=	$	200,000
120120	Type III Barricade	EA	6	x	200.00	=	$	1,200
120143	Temporary Pavement Delineation	LF	10,000	x	1.00	=	$	10,000
12016X	Channelizer	EA		x		=	$	-
128650	Portable Changeable Message Signs	EA	3	x	7,500.00	=	$	22,500
129000	Temporary Railing (Type K)	LF	1,500	x	37.00	=	$	55,500
129100	Temp. Crash Cushion Module	EA		x		=	$	-
129099A	Traffic Plastic Drum	EA	100	x	90.00	=	$	9,000
839603A	Temporary Crash Cushion (ADIEM)	EA	6	x	3,500.00	=	$	21,000
XXXXXX	Some Item							

Subtotal Stage Construction and Traffic Handling *$ 319,200*

TOTAL TRAFFIC ITEMS **$ 898,700**

SECTION 7: DETOURS

Include constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
0713XX	Temporary Fence	LF		x		=	$	-
07XXXX	Temporary Drainage	LS	1	x	10,000.00	=	$	10,000
120143	Temporary Pavement Delineation	LF	1	x	10,000.00	=	$	10,000
1286XX	Temporary Signals	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
190101	Roadway Excavation	CY		x		=	$	-
198001	Imported Borrow	CY		x		=	$	-
198050	Embankment	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
260201	Class 2 Aggregate Base	CY		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
XXXXXX	Signs	LS		x		=	$	-

TOTAL DETOURS **$ 20,000**

SUBTOTAL SECTIONS 1-7 $ 3,333,200

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items								
	ADA Items				1.0%		$	33,332
8B - Bike Path Items								
	Bike Path Items				1.0%		$	33,332
8C - Other Minor Items								
	Other Minor Items				3.0%		$	99,996
	Total of Section 1-7	$	3,333,200	x	5.0%	=	$	166,660

TOTAL MINOR ITEMS **$ 166,700**

SECTIONS 9: MOBILIZATION

Item code								
999990	Total Section 1-8	$	3,499,900	x	10%	=	$	349,990

TOTAL MOBILIZATION **$ 350,000**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066015	Federal Trainee Program	LS		x		=	$	-
066063	Traffic Management Plan - Public Information	LS	1	x	50,000.00	=	$	50,000
066090	Maintain Traffic	LS	1	x	100,000.00	=	$	100,000
066094	Value Analysis	LS		x		=	$	-
066204	Remove Rock & Debris	LS		x		=	$	-
066222	Locate Existing Cross-Over	LS		x		=	$	-
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$	-
066700	Partnering	LS		x		=	$	-
066866	Operation of Existing Traffic Management System Elements During Construction	LS		x		=	$	-
066920	Dispute Review Board	LS		x		=	$	-
XXXXXX	Some Item			x		=	$	-

*Cost of **NPDES** Supplemental Work specified in Section 5C* = $ 3,500

	Total Section 1-8	$	3,499,900		5%	=	$	174,995

TOTAL SUPPLEMENTAL WORK **$ 328,500**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066063	Public Information	LS		x		=	$0
066105	RE Office	LS	1	x	35,000.00	=	$35,000
066803	Padlocks	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
066062A	COZEEP Expenses	LS	1	x	48,000.00	=	$48,000
06684X	Ramp Meter Controller Assembly	LS		x		=	$0
06684X	TMS Controller Assembly	LS		x		=	$0
06684X	Traffic Signal Controller Assembly	LS	1	x	35,000.00	=	$35,000
XXXXXX	Some Item						

Total Section 1-8	$	3,499,900		0%	= $	-

TOTAL STATE FURNISHED	**$118,000**

SECTION 12: TIME-RELATED OVERHEAD

Estiamted Time-Releated Overhead (TRO) Percentage (0% to 10%) = 5%

Item code		Unit	Quantity		Unit Price ($)		Cost
070018	Time-Related Overhead	WD	125	X	0	=	$0

TOTAL TIME-RELATED OVERHEAD	**$0**

SECTION 13: CONTINGENCY

(Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-11	$	4,296,400	x	15%	=	$644,460

TOTAL CONTINGENCY	**$644,500**

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Name	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX	57-XXX	57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0.00 LF	0.00 LF	0.00 LF
Total Length (Feet)	0.00 LF	0.00 LF	0.00 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Structure Depth (Feet)	0.00 LF	0.00 LF	0.00 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0.00	$0.00	$0.00
COST OF EACH STRUCTURE	**$0.00**	**$0.00**	**$0.00**

DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Name	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX	57-XXX	57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0.00 LF	0.00 LF	0.00 LF
Total Length (Feet)	0.00 LF	0.00 LF	0.00 LF
Total Area (Square Feet)	0 SQFT	0.00 SQFT	0.0 SQFT
Structure Depth (Feet)	0.00 LF	0.00 LF	0.00 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0.00	$0.00	$0.00
COST OF EACH STRUCTURE	**$0.00**	**$0.00**	**$0.00**

TOTAL COST OF BRIDGES	**$0.00**
TOTAL COST OF BUILDINGS	**$0.00**

TOTAL COST OF STRUCTURES[1]	**$0.00**

Estimate Prepared By: _____ _____
XXXXXXXXXXXXXXXX ------ Division of Structures Date

[1]Structure's Estimate includes Overhead and Mobilization.
Add more sheets if needed. Call them 9a, 9b, 9c, …, etc

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill,		$	0
	A2)	SB-1210		$	0
B)		Acquisition of Offsite Mitigation		$	0
C)	C1)	Utility Relocation (State Share)		$	0
	C2)	Potholing (Design Phase)		$	0
D)		Railroad Acquisition		$	0
E)		Clearance / Demolition		$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)		Title and Escrow		$	0
H)		Environmental Review		$	0
I)		Condemnation Settlements (Items G & H applied to items A + B)	0%	$	0
J)		Design Appreciation Factor	0%	$	0
K)		Utility Relocation (Construction Cost)		$	0

L) **TOTAL RIGHT OF WAY ESTIMATE** **$0**

(Excluding Item #8 - Hazardous Waste)

M) **TOTAL R/W ESTIMATE: Escalated** **$0**

N) **Right of Way Support** **$** **0**

Support Cost Estimate Prepared By _____ Project Coordinator[1] _____ Phone

Utility Estimate Prepared By _____ Utiliy Coordinator[2] _____ Phone

R/W Acquistion Estimate Prepared By _____ Right of Way Estimator[3] _____ Phone

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

US50/Pioneer Trail Intersection Improvement Project - Cost Benefit Analysis Summary

7/18/2019

Modified Traffic Signal compared to No Build Alternative

R2610C001.xls

Annual Costs	Modified Traffic Signal Alternative		No Build Traffic Signal Alternative	
Safety	**Predicted Annual Crashes**	**Safety Cost**	**Predicted Annual Crashes**	**Safety Cost**
Predicted Fatal/Injury Crashes	Safety Data Omitted	0	Safety Data Omitted	0
Predicted PDO Crashes	Safety Data Omitted	0	Safety Data Omitted	0
	Annual Costs of Predicted Crashes	**$ 803,733**	***Annual Costs of Predicted Crashes***	**$ 1,071,645**
Delay	**Annual Intersection Delay (person-hrs)**	**Delay Cost**	**Annual Intersection Delay (person-hrs)**	**Delay Cost**
Average Annual Person (in Vehicle) Delay	5912	**$ 79,000**	13919	**$ 184,000**
Operation and Maintenance	**Operation and Maintenance**	**O&M Cost**	**Operation and Maintenance**	**O&M Cost**
Annualized Cost of Signal Retiming		$ -	Signal Retiming Every 3 Years	$ 1,000
Annual Cost of Power for Signal		$ -	Power for Signal	$ 750
Annual Cost of Illumination	Intersection Illumination	$ 750	Intersection Illumination	$ 750
Annual Cost of Maintenance	Landscaping Costs	$ 1,500	Signal Maintenance Costs (power outage, detection, etc.)	$ 1,500
	Total Annual Operation and Maintenance Costs	**$ 2,250**	***Total Annual Operation and Maintenance Costs***	**$ 4,000**
Initial Capital Costs	**Total Capital Costs**	**Cost**	**Total Capital Costs**	**Cost**
Preliminary Engineering		$ -		$ -
Right-of-way and Utilities		$ -		$ -
Construction		**$ 4,950,000**		

***Delay cost is based upon an average of the AM and PM peak hours.**

Total Discounted Life Cycle Costs (2020 - 2040)	Modified Traffic Signal Alternative		No Build Traffic Signal Alternative	
Safety	**Total Predicted Crashes**	**Safety Cost**	**Total Predicted Crashes**	**Safety Cost**
	Costs of Predicted Crashes	**$ 10,923,000**	***Costs of Predicted Crashes***	**$ 14,564,000**
Delay	**Total Intersection Delay (person-hrs)**	**Delay Cost**	**Total Intersection Delay (person-hrs)**	**Delay Cost**
Total Person (in Vehicle) Delay	124100	**$ 1,640,000**	292300	**$ 3,850,000**
Fuel and GHG Cost	**Fuel and Green House Gas Cost**		**Fuel and Green House Gas Cost**	
		$ 1,302,000		**$ 1,897,000**
Operation and Maintenance	**Operation and Maintenance**	**O&M Cost**	**Operation and Maintenance**	**O&M Cost**
Annualized Cost of Signal Retiming	Signal Retiming Every 3 Years	$ 13,600	Signal Retiming Every 3 Years	$ 13,600
Annual Cost of Power for Signal	Power for Signal	$ 10,200	Power for Signal	$ 10,200
Annual Cost of Illumination	Intersection Illumination	$ 10,200	Intersection Illumination	$ 10,200
Annual Cost of Maintenance	Signal Maintenance Costs (power outage, detection, etc.)	$ 20,400	Signal Maintenance Costs (power outage, detection, etc.)	$ 20,400
	Total Annual Operation and Maintenance Costs	**$ 54,000**	***Total Annual Operation and Maintenance Costs***	**$ 54,000**
Initial Capital Costs	**Total Capital Costs**	**Cost**	**Total Capital Costs**	**Cost**
Preliminary Engineering		$ -		$ -
Right-of-way and Utilities		$ -		$ -
Construction		$ 4,950,000		$ -
	Total Initial Capital Costs	**$ 4,950,000**	***Total Initial Capital Costs***	**$ -**
Total Life Cycle Costs (Opening Year $)	**Net Present Value**	**$ 18,869,000**	**Net Present Value**	**$ 20,365,000**

***Delay cost is based upon an average of the AM and PM peak hours.**

Modified Traffic Signal Alternative

No Build Signal Alternative

Life Cycle Benefit/Cost Ratio

Modified Signal Alt vs.No Build Signal Alt	
Safety Benefit	$ 3,641,000
Delay Reduction Benefit	$ 2,210,000
Fuel and GHG Benefit	$ 595,000
Total Benefits	**$ 6,446,000**
Added Operations&Maintenance Costs	$ -
Added Capital Costs	$ 4,950,000
Total Costs	**$ 4,950,000**
Life Cycle Benefit/Cost Ratio	**1.3**

US50/Pioneer Trail Intersection Improvement Project - Cost Benefit Analysis Summary

7/18/2019

Roundabout Alternative compared to No Build Signal Alternative

R2610C002.xls

Annual Costs	Roundabout Alternative		No Build Signal Alternative	
Safety	**Predicted Annual Crashes**	**Safety Cost**	**Predicted Annual Crashes**	**Safety Cost**
Predicted Fatal/Injury Crashes	Safety Data Omitted	0	Safety Data Omitted	0
Predicted PDO Crashes	Safety Data Omitted	0	Safety Data Omitted	0
	Annual Costs of Predicted Crashes	**$ 268,721**	***Annual Costs of Predicted Crashes***	**$ 1,071,645**
Delay	**Annual Intersection Delay (person-hrs)**	**Delay Cost**	**Annual Intersection Delay (person-hrs)**	**Delay Cost**
Average Annual Person (in Vehicle) Delay	1529	**$ 21,000**	13919	**$ 184,000**
Operation and Maintenance	**Operation and Maintenance**	**O&M Cost**	**Operation and Maintenance**	**O&M Cost**
Annualized Cost of Signal Retiming		$ -	Signal Retiming Every 3 Years	$ 1,000
Annual Cost of Power for Signal		$ -	Power for Signal	$ 750
Annual Cost of Illumination	Intersection Illumination	$ 750	Intersection Illumination	$ 750
Annual Cost of Maintenance	Landscaping Costs	$ 1,500	Signal Maintenance Costs (power outage, detection, etc.)	$ 1,500
	Total Annual Operation and Maintenance Costs	**$ 2,250**	***Total Annual Operation and Maintenance Costs***	**$ 4,000**
Initial Capital Costs	**Total Capital Costs**	**Cost**	**Total Capital Costs**	**Cost**
Preliminary Engineering		$ -		$ -
Right-of-way and Utilities		$ -		$ -
Construction		**$ 5,250,000**		**$ -**

***Delay cost is based upon an average of the AM and PM peak hours.**

Total Discounted Life Cycle Costs (2020 - 2040)	Roundabout Alternative		No Build Signal Alternative	
Safety	**Total Predicted Crashes**	**Safety Cost**	**Total Predicted Crashes**	**Safety Cost**
Predicted Fatal/Injury Crashes	Safety Data Omitted	$ -	Safety Data Omitted	$ -
Predicted PDO Crashes	Safety Data Omitted	$ -	Safety Data Omitted	$ -
	Total Costs of Predicted Crashes	**$ 3,652,000**	***Total Costs of Predicted Crashes***	**$ 14,564,000**
Delay	**Total Intersection Delay (person-hrs)**	**Delay Cost**	**Total Intersection Delay (person-hrs)**	**Delay Cost**
Total Person (in Vehicle) Delay	32117	**$ 430,000**	292305	**$ 3,850,000**
Fuel and GHG Cost	**Fuel and Green House Gas Cost**		**Fuel and Green House Gas Cost**	
		$ 1,484,000		**$ 1,897,000**
Operation and Maintenance	**Operation and Maintenance**	**O&M Cost**	**Operation and Maintenance**	**O&M Cost**
Annualized Cost of Signal Retiming		$ -	Signal Retiming Every 3 Years	$ 13,600
Annual Cost of Power for Signal		$ -	Power for Signal	$ 10,200
Annual Cost of Illumination	Intersection Illumination	$ 10,200	Intersection Illumination	$ 10,200
Annual Cost of Maintenance	Landscaping Costs	$ 20,400	Signal Maintenance Costs (power outage, detection, etc.)	$ 20,400
	Total Annual Operation and Maintenance Costs	**$ 31,000**	***Total Annual Operation and Maintenance Costs***	**$ 54,000**
Initial Capital Costs	**Total Capital Costs**	**Cost**	**Total Capital Costs**	**Cost**
Preliminary Engineering		$ -		$ -
Right-of-way and Utilities		$ -		$ -
Construction		$ 5,250,000		$ -
	Total Initial Capital Costs	**$ 5,250,000**	***Total Initial Capital Costs***	**$ -**
Total Life Cycle Costs (Opening Year $)	**Net Present Value**	**$ 10,847,000**	**Net Present Value**	**$ 20,365,000**

***Delay cost is based upon an average of the AM and PM peak hours.**

Roundabout Alternative

No Build Signal Alternative

Life Cycle Benefit/Cost Ratio

Roundabout vs. No Build Signal Alternative	
Safety Benefit	$ 10,912,000
Delay Reduction Benefit	$ 3,420,000
Fuel and GHG Benefit	$ 413,000
Total Benefits	**$ 14,745,000**
Added Operations&Maintenance Costs	$ (23,000)
Added Capital Costs	$ 5,250,000
Total Costs	**$ 5,227,000**
Life Cycle Benefit/Cost Ratio	**2.8**

Roundabout Preferred

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APPENDIX B

EMISSIONS MODEL RESULTS AND MOBILE SOURCE AIR TOXICS ANALYSIS

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Pioneer Trail/US 50 Intersection Safety Improvement Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.77	15.10	2.81	50.15	0.15	50.00	10.51	0.11	10.40	0.03	2,890.81	0.72	0.10	2,939.16
Grading/Excavation	1.90	37.88	5.48	50.31	0.31	50.00	10.64	0.24	10.40	0.07	6,501.34	1.83	0.14	6,587.94
Drainage/Utilities/Sub-Grade	1.49	31.15	4.54	50.24	0.24	50.00	10.59	0.19	10.40	0.06	5,451.46	1.09	0.12	5,515.38
Paving	0.72	16.96	2.70	0.16	0.16	0.00	0.11	0.11	0.00	0.03	2,796.15	0.65	0.10	2,843.15
Maximum (pounds/day)	1.90	37.88	5.48	50.31	0.31	50.00	10.64	0.24	10.40	0.07	6,501.34	1.83	0.14	6,587.94
Total (tons/construction project)	0.06	1.32	0.20	1.88	0.01	1.87	0.40	0.01	0.39	0.00	229.55	0.06	0.01	232.58

Notes:

Project Start Year ->	2022
Project Length (months) ->	4
Total Project Area (acres) ->	14
Maximum Area Disturbed/Day (acres) ->	5
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	60	60	200	8
Grading/Excavation	140	0	60	60	440	8
Drainage/Utilities/Sub-Grade	1	0	60	60	280	8
Paving	0	31	60	60	400	8

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 G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Pioneer Trail/US 50 Intersection Safety Improvement Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.00	0.07	0.01	0.22	0.00	0.22	0.05	0.00	0.05	0.00	12.72	0.00	0.00	11.73
Grading/Excavation	0.03	0.67	0.10	0.89	0.01	0.88	0.19	0.00	0.18	0.00	114.42	0.03	0.00	105.19
Drainage/Utilities/Sub-Grade	0.02	0.48	0.07	0.77	0.00	0.77	0.16	0.00	0.16	0.00	83.95	0.02	0.00	77.05
Paving	0.00	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.45	0.00	0.00	17.02
Maximum (tons/phase)	0.03	0.67	0.10	0.89	0.01	0.88	0.19	0.00	0.18	0.00	114.42	0.03	0.00	105.19
Total (tons/construction project)	0.06	1.32	0.20	1.88	0.01	1.87	0.40	0.01	0.39	0.00	229.55	0.06	0.01	211.00

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 G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

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APPENDIX C

NATURAL ENVIRONMENT STUDY

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Pioneer Trail/US 50 Intersection Safety Improvement Project



Natural Environment Study

Intersection of US 50 and Pioneer Trail

Meyers, CA

[03-ED-50-PM-71.48]

May 2020

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

STATE OF CALIFORNIA
Department of Transportation
and El Dorado County

Prepared By: Mack Casterman Date: 5/28/20
Project Scientist
(775) 588-2505
NCE
PO Box 1760 Zephyr Cove, NV 89448
Consultant

Prepared By: Dave Rios Date: 5/28/20
Associate Scientist
(775) 588-2505
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PO Box 1760 Zephyr Cove, NV 89448
Consultant

Recommended for Approval By: William Ragan Date: 6/5/2020
William Ragan
District Biologist
(530) 741-4282
Caltrans North Region Environmental
District3/Marysville

Approved By: Date: 6/10/20
Mike Bartlett
District Environmental Branch Chief
(530) 741-5559
Caltrans North Region Environmental
District 3/Marysville

The public can obtain this document in alternative formats by contacting Placer County. California Relay Service 1 phone number is (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audio cassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Mike Bartlett, Branch Chief, 703 B Street, Marysville, CA 95901; (530) 741-5559 (Voice); or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

Summary

This summary presents the results of the impact analysis, findings of the supporting technical reports, and a summary of the general biological environment. This section also includes a discussion of any potential impacts, and proposed mitigation measures and project permits that are anticipated for this project.

El Dorado County (County) as the project sponsor and implementing agency, in cooperation with Caltrans, is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the Pioneer Trail/ US 50 Intersection Safety Improvement Project (project). The purpose of the project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails. The intersection is currently signalized. The northbound approach has one through lane and one right-turn lane with overlap right-turn phasing. The westbound approach has a single lane, that can accommodate one left turn and a wide shoulder for one right-turn vehicle. The southbound approach has one through lane and one left-turn lane. Per the Caltrans Functional Classification System, US 50 is a Class 3, Other Principal Arterial roadway and Pioneer Trail is a Class 4, Minor Arterial roadway. Three potential staging areas are being considered for this project. The first potential staging area would be along the shoulder and at the north end of Santa Fe Road approximately 0.3 miles southwest of the intersection of US 50 and Pioneer Trail, the second would be located at the end of Arapahoe Street approximately 0.5 miles north of the intersection of US 50 and Pioneer Trail , and the third would be at the pullout at the corner of Bakersfield Street and Country Club Drive approximately 0.5 miles northwest of the intersection of US 50 and Pioneer Trail. See project impact area Map (**Figure 1**) for staging area locations.

The project will not require future construction to fully utilize the design capabilities included in the proposed project. Full use of the project's proposed improvements is not contingent on future construction of another project.

The purpose of the project is to improve safety at the Pioneer Trail and US 50 intersection in El Dorado County for all modes of travel, improve traffic flow, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails. Information obtained from several studies and plans has identified the need for safety and transportation-related improvements. At this intersection, several issues help define the overall need for improvements, such as the number of accidents, pedestrian and bicycle facilities are disjointed, and lack connectivity, and the intersection operates at an unacceptable level of service during peak periods.

Pre-construction nesting bird surveys, discussed later in further detail, are recommended to minimize potential impacts to migratory nesting birds. The intersection improvement will permanently impact existing vegetation along the margins of US 50 and Pioneer Trail; however, the majority of the existing vegetation is composed of ruderal species including noxious weeds and/or non-native grasses.

Meyers Creek flows 200 feet to the west of the US 50 alignment and contains potential habitat for federally listed Sierra Nevada yellow legged frog (SNYLF). The proposed project will not impact the creek alignment avoiding any direct impacts to this habitat. All TRPA best management

practices and other regulatory requirements and permit conditions will be deployed during construction to minimize water quality related impacts in the project area.

A United States Fish and Wildlife Service species list was accessed through the Information Planning and Conservation website for the proposed project. Effects to federally listed species were assessed and are discussed in further detail in this Natural Environment Study, but the results of the Information Planning and Conservation report indicate no critical habitat exists within the project area. As a result, it was determined that the project will have no effect on federally listed species; therefore, no Section 7 consultation is proposed.

Based on our review of the biological factors and waters of the State conditions we believe the following permits may be required but will depend on final project improvements and impacts.

- United States Army Corps of Engineers Section 404 Permit
- Lahontan Regional Water Quality Control Board Section 401 Water Quality Certification

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List of Abbreviated Terms

AADT	Average annual daily traffic
AOI	Area of Impact
BSA	Biological Study Area
CalIPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFA	California Department of Food and Agriculture
CDFG	California Fish and Game
CDFW	California Department Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPESC	Certified Professional in Erosion and Sediment Control
CWA	Clean Water Act
FESA	Federal Endangered Species Act
EIP	Environmental Improvement Program
FHWA	Federal Highway Administration
Ft	foot/feet
IPaC	Information Planning and Conservation
Lahontan	Lahontan Regional water Quality Control Board
LTBWCG	Lake Tahoe Basin Weeds Coordinating Group
m	meter(s)
MSL	Mean sea level
NEPA	National Environmental Policy Act
NES	Natural Environmental Study
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
SNYLF	Sierra Nevada yellow-legged frog
SSS	special status species
TRPA	Tahoe Regional Planning Agency
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WOUS	Waters of the United States

Chapter 1 - Introduction

The purpose of this Natural Environmental Study (NES) is to describe the existing biological environment and how this project will affect that environment including plants, animals, and natural communities occurring in the biological study area. We have defined two boundaries that are discussed in this report including the project impact area and the biological study area (BSA). The 13.6-acre project impact area (**Appendix A, Figure 1**) is located at the intersection of Pioneer Trail and US 50 in Meyers, California and presents the limits of the proposed improvements and temporary construction staging areas. Three potential staging areas are being considered for this project and are included in the project impact area. The first potential staging area would be along the shoulder and at the north end of Santa Fe Road approximately 0.3 miles southwest of the intersection of US 50 and Pioneer Trail, the second would be located at the end of Arapahoe Street approximately 0.5 miles north of the intersection of US 50 and Pioneer Trail, and the third would be at the pullout at the corner of Bakersfield Street and Country Club Drive approximately 0.5 miles northwest of the intersection of US 50 and Pioneer Trail. The BSA includes the project impact area plus a one-mile buffer.

Project History

The purpose of the project is to improve safety at the Pioneer Trail and US 50 intersection in El Dorado County for all modes of travel, improve traffic flow, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails. Information obtained from several studies and plans has identified the need for safety and transportation-related improvements. At this intersection, several issues help define the overall need for improvements, such as the number of accidents, pedestrian and bicycle facilities are disjointed and lack connectivity, and the intersection operates at an unacceptable level of service during peak periods.

Project Description

The County of El Dorado (County) as the project sponsor and implementing agency, in cooperation with Caltrans, is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the project. The purpose of the project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The project has been designed to implement a ‘complete streets’ strategy by proposing to install lighting, signage, and landscaping, reduce resilience on the private automobile, provide multimodal transportation improvements like visible crosswalks for pedestrian and bicycle movements, provide for future growth for transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

Existing Conditions

The U.S. Highway 50 (US 50) corridor serves as the main entry point for Lake Tahoe visitors through the community of Meyers. At the east end of Meyers sits the Pioneer Trail/US 50 intersection, which is the primary connection point to the City of South Lake Tahoe, Stateline, and other areas within the Lake Tahoe basin. The "T" intersection is currently controlled by a traffic signal. The annual average daily traffic (AADT) of Pioneer Trail is approximately 6,335 vehicles per day.

The existing intersection is challenging for alternative modes of transportation, including for cyclists and pedestrians, which leads them to frequently cut across the highway in undesirable locations. The area is prone to a higher than average accident rate due to many factors, including grading and drainage issues (the southeast corner has standing water after rain events and snowmelt); visibility issues related to signal equipment and tree encroachment; and excess motorist speed while turning from southbound US 50 onto eastbound Pioneer Trail. During winter storm conditions, vehicles regularly slide through the intersection and hit waiting vehicles in the west bound lane of Pioneer Trail (FHWA 2016).

Substantial analysis has already been completed on the US 50 corridor through Meyers, including at the intersection of Pioneer Trail. NCE worked with the County to initiate the Meyers Operations Study in 2007 that included conducting preliminary traffic counts and gathering baseline utility information. Since then the County, in conjunction with the TRPA, FHWA, Caltrans, local community businesses, and the Meyers Community Foundation, has performed additional analysis as part of TRPA's *On Our Way Grant Program*. The program helps Lake Tahoe communities identify neighborhood-level projects that create mixed-use town centers, encourage walking, biking, and transit use, revitalize the economy, and reduce impacts to the environment.

The Federal Highway Administration (FHWA) Resource Center's Meyers Road Safety Audit, conducted in 2016, identified safety issues at the Pioneer Trail/US 50 intersection. Results of the audit conclude this intersection experiences the highest number of accidents of all the intersections within the Meyers Road Safety Audit study area (FHWA 2016). Collision data provided from the California Highway Patrol indicate 34 collisions occurred in the intersection between 2007 and 2015. Of these collisions, 6 resulted in injuries and 28 resulted in property damage. There were no fatalities at the intersection; however, one fatality was reported approximately 400 feet south of the intersection (FHWA 2016).

In 2012, this intersection was identified as a high accident location by the 2011 Annual Accident Location Survey. It was determined that most accidents at the intersection are a result of vehicles travelling at an unsafe speed in snowy and/or icy conditions. Most of the accidents occur at the US 50 northbound right-turn movement onto Pioneer Trail.

The 2016 *Linking Tahoe: Active Transportation Plan* identifies needs related to the non-auto users of this intersection, including providing continuation through the intersection that accommodates all users including pedestrians, cyclists, and transit riders. At this intersection, pedestrians are only allowed to cross US 50 in the crosswalk on the north side of the intersection. This crosswalk does not connect to another pedestrian facility. All other pedestrian movements are prohibited. A Class I bicycle facility parallel to the west side of US 50 does not connect to the Class II facility or the Class I pathway on the east side of US 50.

The proposed project has been identified by the Tahoe Regional Planning Agency's (TRPA's) Environmental Improvement Program (EIP) as a transportation and air quality project (EIP #03.01.02.0074). Transportation and air quality EIP projects find ways to reduce the dependency on the automobile by building bike trail networks, improving transit systems, and rehabilitating existing transportation networks to support walkable communities which are strategies that will improve air quality (TRPA 2019).

Once implemented, the project would help the County and TRPA meet the minimum threshold standards established for air quality. The purpose of the threshold for air quality is to achieve the strictest of federal, state, or regional standards for carbon monoxide, ozone, and particulates; increase visibility; reduce US 50 traffic; and reduce vehicle miles traveled. Implementation of the project is intended to help attain the air quality threshold by improving traffic flow which would reduce idling times and improve acceleration conditions and by improving the transportation network to support a walkable or bikeable community.

Chapter 2 - Study Methods

Regulatory Requirements

The following regulatory requirements are applicable for the project. The project intends to satisfy all applicable Federal and State regulations as well as local ordinances and regulations that protect biological resources.

2.1. Federal Regulatory Requirements

2.1.1.1 Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the United States Fish and Wildlife Service (USFWS). Section 9 of FESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). This statute also governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law.

Under Section 7 of FESA, federal agencies are required to consult with the USFWS or National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) as applicable if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity provided the action will not jeopardize the continued existence of the species. Section 10 of FESA provides for issuance of incidental take permits to private parties provided a habitat conservation plan is developed.

2.1.1.2. Clean Water Act

The United States Army Corps of Engineers (USACE) Regulatory Branch regulates activities that discharge dredged or fill materials into Waters of the United States, which includes wetlands (WOUS) under Sections 401 and 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. A Section 404 permit will most likely be required as the project is likely to impact federally jurisdictional waters.

Section 401 of the CWA requires that an applicant proposing to conduct any activity that may result in a discharge to a WOUS must apply for and secure a Section 401, Water Quality Certification prior to construction activities. The Lahontan Regional Water Quality Control Board (Lahontan), Region 6 will administer the Section 401 Water Quality Certification for this project. As there is a potential to impact water quality, a Section 401 Water Quality Certification is required.

2.1.1.3. Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California

Fish and Game (CDFG) Code (Section 3500) also prohibits the destruction of any nest, egg, or nestling.

If vegetation removal or ground disturbance near potential migratory bird or SSS nesting habitat is proposed during the nesting season (typically February 1 through September 30), a survey for active bird nests shall be conducted by a qualified biologist no more than two weeks prior to initiation of these activities. If nests are identified, then CDFW and USFWS will be consulted.

2.1.1.4. Executive Order 13112 – Invasive Species

Executive Order 13112 requires federal agencies to combat the introduction or spread of invasive species in the United States. Invasive species are defined 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.

2.1.1.5. United States Forest Service Special-Use Permit

USFS land will not be impacted by this project; therefore, a USFS Special-Use Permit will be not be necessary.

2.1.2. State Regulatory Requirements

2.1.2.1. California Environmental Quality Act

The project will require compliance with the California Environmental Quality Act (CEQA). The County of El Dorado as the project sponsor and implementing agency in cooperation with Caltrans will serve as the lead agency. The County and Caltrans will conduct an environmental review, which will comprise a review of all studies conducted in compliance with CEQA and the creation and adoption of appropriate mitigation and monitoring measures if appropriate.

2.1.2.2. California Endangered Species Act

Pursuant to the CESA and Section 2081 of the CDFG Code, an Incidental Take Permit from the California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a State listed threatened or endangered species. Under the CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species proposed for listing (called "candidates" by the state). Section 2080 of the CDFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. A Section 2081 permit is issued when a project is consistent with an existing Biological Opinion. The project is not expected to adversely affect any species listed by the CESA at this time consultation with the CDFW pursuant to CESA is not required for the project.

2.1.2.3. Porter-Cologne Water Quality Control Act

The Porter-Cologne Act provides the State with very broad authority to regulate "waters of the State" (which are defined as any surface water or groundwater, including saline waters). The State Regional Water Quality Control Board is granted ultimate authority over water quality policy in the State of California. The State Board sets statewide policy for the implementation of state and federal water laws and regulations. Nine Regional Boards adopt and implement Water Quality Control Plans specific to their specific region. The Lake Tahoe Basin falls within the jurisdiction of the Lahontan Regional Board. Before allowing discharges that may affect the quality of Waters of the State, a Report of Waste Discharge must be filed with the Lahontan Regional Water Quality Control Board (LRWQCB). A Report of Waste Discharge will be prepared for LRWQCB's approval.

2.1.2.4. California State Water Resources Control Board, Construction General Permit Order 2009-0009-DWQ

If the project will disturb more than one acre of land; the County will need to apply for coverage under the Tahoe Construction General Permit (Order R6T-2016-0010). This permit is issued by the LRWQCB.

2.1.2.5. California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900-1913) was created in order to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. CESA provided further protection for rare and endangered plant species, but the NPPA remains part of the CDFG Code. No species protected by the California NPPA have been identified in the project impact area.

2.1.2.6. California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement

Sections 1600–1616 of the CDFG Code protect waters of the State. Section 1602 of the code regulates any work that will: (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. For project activities that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1603, CDFW authorization is required in the form of a Streambed Alteration Agreement. This project may need to obtain a streambed alteration agreement from the CDFW.

2.1.3. El Dorado County

2.1.3.1. Grading Permit

Grading permits are not required for capital improvement projects.

2.1.4. Tahoe Regional Planning Agency

A permit from TRPA will be required for this project through their Environmental Improvement Program (EIP).

2.2 Studies Required

2.2.1 Biological Study Area

The BSA includes an area where special status species (SSS) or their habitat may exist that is outside of the footprint of the proposed improvements. The BSA is important because it considers the possible movement of species, impacts to SSS as a result of the project that extend beyond the project impact area, and allows the biologist to evaluate possible affects to SSS as a result of changes to project limits and project design. The BSA for this project includes the area within 1-mile radius of the project impact area (**Appendix A, Figure 2**).

The 13.6-acre project impact area is located at the intersection of Pioneer Trail and US 50 in Meyers, California. Three potential staging areas are being considered for this project. The first potential staging area would be along the shoulder and at the north end of Santa Fe Road approximately 0.3 miles southwest of the intersection of US 50 and Pioneer Trail, the second would be located at the end of Arapahoe Street approximately 0.5 miles north of the intersection of US 50 and Pioneer Trail , and the third would be at the pullout at the corner of Bakersfield Street and Country Club Drive approximately 0.5 miles northwest of the intersection of US 50 and Pioneer Trail (**Appendix A, Figure 1**).

2.2.2 Literature Search

NCE conducted a literature and database review to identify existing biological and botanical information within and adjacent to the project impact area. The purpose of this review was to identify vegetation communities in the BSA and to develop a list of potential special status species (SSS) and critical habitat occurring within the BSA. Special status species are all listed biological or botanical species with special protection or consideration under federal, state, and local regulatory policies.

NCE scientists conducted reconnaissance-level surveys in order to inventory habitats, SSS, and non-SSS observed within the project impact area. These surveys are discussed in more detail below. Vegetation types were initially identified with the CALVEG Alliances GIS data (USDA 2016) (**Appendix A, Figure 3**), and then verified based on the NCE reconnaissance-level surveys. The most relevant searches, reviews, and requests included:

- California Natural Diversity Data Base (CNDDB)
    - 2020 Natural Diversity Data

- California Native Plant Society (CNPS)
    - 2020 Inventory of Rare and Endangered Plants
- Natural Resource Conservation Service (NRCS)
    - Web Soil Survey
- NOAA National Marine Fisheries Service (NMFS) Species List
    - The project is located outside of NOAA Fisheries jurisdiction; therefore, a NOAA Fisheries species list is not required.
- TRPA Special Interest Species Data
- USFWS
    - 2020 Federally endangered and threatened species that occur in or may be affected by the project
- USACE
    - 1987 Corps of Engineers Wetlands Delineation Manual
- USFWS and CDFW
    - Federal and state listed species that may be affected by the project
- US Department of Agriculture (USDA)
    - 2018 CALVEG GIS Layers

2.2.3 Personnel and Survey Dates

On September 17, 2019 a WOUS delineation survey was conducted by NCE scientists Debra Lemke (18 years of experience) and Sarah Bryan (2 years of experience). A reconnaissance-level botanical survey, wildlife survey, and habitat assessment were performed on August 28, 2019 by NCE scientist Mack Casterman (7 years of experience).

2.2.4 Survey Methods

The purpose of the reconnaissance-level survey was to 1) evaluate and verify on site vegetation communities, 2) verify no critical wildlife habitats were present in the project impact area, and 3) develop an inventory for any possible SSS and non-SSS biological and botanical resources.

Botanical surveys were conducted by walking the entire study area following the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2009). While walking the project impact area and documenting observed plant species, the biologist frequently scanned trees and the sky for birds with binoculars and made note of any animals observed. All plant and animal species observed were identified and recorded in **Table 1** (**Section 3.1.2** below).

The WOUS delineation of aquatic resources followed the methods described in the 1987 Corps of Engineers Wetland Delineation Manual and regional supplements.

2.2.5 Agency Coordination and Professional Contacts

Agency coordination has been limited to contact with the County and USFWS to date.

Further coordination with the USFWS, CDFW, RWQCB, and/or USACE will be based on the results of this NES and technical studies. Any additional project requirements will be determined during this coordination which will be administered by the County and Caltrans.

2.2.6 Limitations That May Influence Results

There are no known limitations or constraints that may influence the results of the analysis or field surveys. Surveys were timed appropriately, and standard protocols were followed. There was no atypical weather and no accelerated schedule.

The survey took place during the 2019 growing season to ensure that plant species within the BSA would be actively growing and identifiable at the time of the survey.

Chapter 3 - Results: Environmental Setting

3.1. Study Area

Land use in the BSA includes both private and public lands. The BSA is generally made up of privately-owned parcels and public right-of-way with some large sections of federal and state land in the central section of the BSA.

3.1.1 Physical Conditions

The project impact area is located in the Echo Lake USGS 7.5-minute topographic quadrangle. The elevation within the project impact area ranges from 6,300 ft. to 6,400 ft. above mean sea level. The topography of the project impact area slopes gently downward from the southern and eastern edges of the project impact area (**Appendix A, Figure 1**).

The regional climate where the project impact area is located consists of warm dry summers and cold wet winters. Temperatures vary throughout the year from an average maximum temperature of 79.7 degrees Fahrenheit in July to an average minimum temperature in January of 16.4 degrees Fahrenheit (WRCC 2019). The majority of precipitation falls from October to April averaging approximately 41 inches per year. Annual snowfall is approximately 200 inches per year (WRCC 2019).

Per the NRCS Soil Web Survey, the project impact area contains 95% Jabu coarse sandy loam, 0 to 9 percent slopes and 5% Tahoe complex, 0 to 2 percent slopes. Please find descriptions for each soil unit below.

Jabu coarse sandy loam is a soil component that occurs on hillslopes on outwash terraces. The parent material consists of outwash derived from granodiorite. Depth to a root restrictive layer is 39 to 79 inches. The natural drainage class is well drained. Water movement in the most limiting layer is moderately low. Available water storage in profile is low. Depth to water table is about 39 to 79 inches. Frequency of flooding is none. Frequency of ponding is none. The non-irrigated land capability classification is 4e. This soil does not meet hydric criteria.

Tahoe complex is a soil component that occurs in valley flats and flood plains. The parent material consists of Alluvium derived from granitic and volcanic rock. Depth to a root restrictive layer is more than 80 inches. The natural drainage class is very poorly drained. Water movement in the most limiting layer is moderately high to very high. Available water storage in profile is low. Depth to water table is 0 to 12 inches. Frequency of flooding is frequent. Frequency of ponding is frequent. The non-irrigated land capability classification is 5w. This soil is considered hydric.

3.1.2 Biological Conditions in the Biological Study Area

3.1.2.1 Vegetation

The majority of the BSA is composed of a Jeffrey pine forest and perennial grassland. Sierran mixed conifer, lodgepole pine, montane chaparral, and urban areas are also present within the BSA. Thickets of willow and alder occur along riparian corridors. None of the plant communities in the project impact area qualify as Natural Communities of Special Concern (Sawyer et al. 2009).

Jeffrey Pine Forest

The Jeffrey pine (*Pinus jeffreyi* Forest Alliance) plant community is composed of Jeffrey pine and white fir (*Abies concolor*) as co-dominant species in the canopy layer. This association occurs throughout the Sierra Nevada mountains raised stream benches, ridges, and plateaus on all slopes and aspects. Soils are generally infertile and shallow.

Lodgepole Pine Forest

Lodgepole pine *(Pinus contorta* ssp. *murrayana)* is the dominant or co-dominant in the tree canopy with White fir (*Abies concolor).* This alliance grows in a variety of conditions and occurs in terraces, lake and meadow margins, and depressions that flood seasonally; upland slopes and ridges to the tree line. Stands are most common and extensive in the Sierra Nevada. This conifer attains a height of 100 feet and can live to over 600 years old and are moderately shade tolerant.

Perennial Grassland

Perennial grassland habitat occurs on ridges and south facing slopes, alternating with forest and scrub in valleys and north facing slopes. This is a wide ranging and variable habitat throughout the state based on climactic and land use considerations. Key grasses include Idaho fescue (*Fescue idahoensis*), Red fescue (*Festuca rubra*), and Italian wild rye (*Festuca perennis*).

Sierran Mixed Conifer

The Sierran mixed conifer is a mix of hardwood and conifer species that forms a multilayered forest. Historically burning and logging have caused a wide variability in stand structure. Five conifers and one hardwood typify the mixed conifer forest. White fir tends to be the most common species due to its shade tolerance and ability to survive long periods in brush fields. Jefferey pine dominates at high elevations and on cold sites with incense cedar (*Calocedrus decurens)*, ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*) and California black oak (*Quercus kellogii*). At maturity these conifers range from 100 to 200 feet tall.

Montane Chaparral:

This community of plants can vary from treelike (up to 30 ft) to prostrate often forming impenetrable thickets. The structure of this habitat is affected by influence of browsing animals, fire, erosion, logging, and site quality. On shallow granite soils in the Sierra Nevada, low dense growths of pine mat manzanita (*Arctostaphylos nevadensis*) and huckleberry oak (*Quercus vacciniifolia*) make up an edaphic climax community, associate with scattered conifers and exposed granite.

Urban Land:

Developed urban land areas are characterized by built infrastructure and impermeable surfaces. Vegetated areas are landscaped. Developed areas within the project impact area include the paved corridors of East and West San Bernardino Avenue as well as developed private lots. Often these developed areas are located adjacent to disturbed natural communities.

Reconnaissance-level surveys resulted in neither botanical nor wildlife SSS detections. An inventory of common plants and animals encountered during the survey is presented in **Tables 1** and **2** below.

Table 1. Plant Species Identified Within the Project Impact Area, August 2019

Scientific Name	Common Name	Native: Y, N
Abies concolor	White fir	Y
Achillea millefolium	Yarrow	Y
Acmispon americanus	American bird's foot trefoil	Y
Agrostis gigantea	Creeping bentgrass	N
Ambrosia artemisiifolia	Annual ragweed	N
Arctostaphylos patula	Green leaf manzanita	Y
Arnica chamissonis	Chamisso arnica	Y
Artemesia tridentata	Sagebrush	Y
Bromus tectorum	Cheatgrass	N
Poa bulbosa	Bulbous blue grass	N
Poa pratensis	Kentucky blue grass	N
Ceonothus leucodermis	Whitethorn	Y
Ceanothus prostratus	Mahala mats	Y
Dactylis glomerata	Orchard grass	N
Descurainia sophia	Flix weed	N
Delphinium glaucum	Sierra larkspur	Y
Draba verna	Spring draba	N
Elymus elymoides	Squirrel tail grass	Y
Elymus glaucus	Blue wildrye	Y
Elymus repens	Quack grass	N
Epilobium brachycarpum	Annual fireweed	Y
Ericameria nauseosa	Rubber rabbitbrush	Y
Eriogonum umbellatum var. *polyanthum*	Sulfur buckwheat	Y
Erodium moschatum	Whitestem filaree	N
Festuca idahoensis	Blue fescue	Y
Festuca rubra	Red fescue	Y
Fragaria virginiana	Mountain strawberry	Y
Galium bifolium	Twinleaf bedstraw	Y
Grindelia squarrosa	Curlycup gumweed	N
Hordeum brachyantherum	Meadow barley	Y
Ipomopsis aggregata	Scarlet gilia	Y
Juncus sp.	Rush	Y
Lactuca serriola	Prickly lettuce	N
Lotus corniculatus	Bird's foot trefoil	N
Lonicera conjugialis	Purpleflower honeysuckle	Y
Lupinus breweri	Brewer's lupine	Y
Madia glomerata	Mountain tarweed	Y

Scientific Name	Common Name	Native: Y, N
Melilotus albus	White sweetclover	N
Navarretia intertexta	Interwoven navarretia	Y
Phacelia hastata	Mountain phacelia	Y
Pinus contorta ssp. *murrayana*	Lodgepole pine	Y
Pinus jeffreyi	Jeffrey pine	Y
Poa pratensis	Kentucky bluegrass	N
Potentilla recta	Sulpher cinquefoil	N
Purshia tridentata	Antelope bitterbrush	Y
Ribes cereum	Wax currant	Y
Rumex cripsus	Curly dock	N
Rosa woodsii	Wood's rose	Y
Soldago elongata	West coast Canada goldenrod	Y
Stipa occidentalis	Western needlegrass	Y
Symphoricarpos mollis	Snowberry	Y
Symphyotrichum ascendens	Western aster	Y
Tragopogon dubius	Goat's beard	N
Verbascum thapsus	Wooly mullein	N
Wyethia mollis	Wooly mule's ears	Y

3.1.2.2 Invasive species

Reconnaissance-level surveys resulted in one invasive plant species detection. For the purposes of this report, noxious weeds are those plants which are designated as "noxious" by the United States Department of Agriculture (USDA), or the California Department of Food and Agriculture (CDFA), any plants listed as "Moderate" or "High" risk on the California Invasive Plant Council's (CalIPC) Invasive Plant Inventory, weed species listed as "Medium" or "High" priority by the United States Forest Service Lake Tahoe Basin Management Unit and any plants listed by the Lake Tahoe Basin Weeds Coordinating Group (LTBWCG). This plant is:

- Sulphur cinquefoil (*Potentilla recta*)

3.1.2.3 Wildlife

Four birds and one mammal species were observed in the project impact area during the reconnaissance-level survey. All wildlife species observed during the surveys were documented and are presented in the table below.

Table 2: Observed wildlife species during June 11 and July 10, 2019 surveys

Scientific Name	Common Name
Birds	
Cyanocitta stelleri	Steller's jay
Hirundo rustica	Cliff swallow
Corvus brachyrhynchos	American crow

Poecile gambeli	Mountain chickadee
Mammals	
Neotamias speciousus	Lodgepole chipmunk

3.1.2.4 Wildlife Corridors

A wildlife corridor is an area of habitat connecting wildlife populations and larger areas of similar wildlife habitat. These corridors generally consist of native vegetation and allow wildlife species to find water, food, shelter, and potential mates. Corridors enable the movement of animals and the continuation of viable populations thus playing a role in the maintenance of biodiversity. The project impact area does not include any wildlife corridors.

3.1.2.5 Wetlands and Other Jurisdictional Waters

NCE performed field investigations on September 17, 2019 evaluating the potential jurisdictional status of waters of the United States for the project.

Within the survey area, Meyers Creek is mapped by the United States Geological Survey topographic map and by the National Hydrography Dataset (NHD) as flowing through the project area in the southernmost part of the project. Meyers Creek is culverted through the southern survey area with the inlet and outlets located outside of the survey boundary; therefore, the creek was not delineated within survey limits. Two other NHD 'flow lines' are mapped within the survey area. There are no United States Fish and Wildlife Service National Wetlands Inventory mapped wetlands within the survey area.

NCE surveyed a total of 13.92 acres. Within the survey area, NCE delineated three aquatic resources that are potentially jurisdictional waters of the United States due to presence of ordinary high water mark indicators and a connection to Meyers Creek - a tributary to the Upper Truckee River, and ultimately Lake Tahoe, a traditional navigable waterway.

A detailed account of the aquatic resources delineation completed for this project can be found in the *Pioneer Trail/US 50 Intersection Safety Improvement Project, Final Aquatic Resources Delineation Report* (NCE 2020).

3.1.2.6 Regional Species and Habitats and Natural Communities of Concern

Special status species databases were reviewed to determine the potential for SSS to occur within the project impact area. The following site-specific references and background information was reviewed:

- *California Natural Diversity Database* (CNDDB). 2020. California Department of Fish and Wildlife, Sacramento, CA. Accessed online.
- California Native Plant Society. 2020. *Inventory of Rare and Endangered Vascular Plants of California* (online edition, v8-03). Accessed online.
- Natural Resource Conservation Service. United States Department of Agriculture. *Web Soil Survey*. Accessed online.
- Information for Planning and Conservation (IPaC). 2020. United States Fish and Wildlife Service. Accessed online.

The database review identified a total of 46 special status species known to occur or with the potential to occur within the BSA. Of these species with potential to occur within the BSA, two have the potential to occur within the project impact area itself due to the presence of suitable habitat, elevation, and other factors. **Table 3** lists all the special status species that have potential to occur within the BSA as well as a brief rationale as to the possible presence or absence of the species within the project impact area.

Table 3: List of Special Status Species Known to Occur in the Vicinity of Project impact area

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Plant Species							
Arabis rigidissima* var. *demota Galena Creek rockcress	FSS		SI	1B.2	Broad-leaved upland forests, upper montane coniferous forests on rocky substrates. Known in CA from only two occurrences near Martis Peak and in NV from eleven occurrences in the Carson Range. Elevation range 7,398 to 8,398 feet.	August	**Absent.** Outside of elevation range and site lacks suitable habitat.
Astragalus austiniae Austin's astragalus				1B.3	Alpine boulder and rock field, subalpine coniferous forest. Elevation range 8,005 to 9727 feet.	July to September	**Absent.** Outside of elevation range.
Boechera tularensis Tulare rockcress				1B.3	Perennial herb that prefers rocky slopes, subalpine coniferous forest, and upper montane coniferous forest. Elevation range is from 6,000 to 11,000 feet.	June to July	**Absent.** Rocky slopes and rocky areas are not present within project impact area.
Botrychium ascendens Upswept moonwort	FSS			2B.3	Wet or moist soils in lower montane coniferous forests, such as along the edges of lakes and streams. Elevation range 4,950 to 6,039 feet.	Fertile early July to early September	**Absent.** Outside of habitat and elevation range.
Botrychium crenulatum Scalloped moonwort	FSS			2B.2	Lower montane coniferous forests, meadows and seeps, marshes and swamps. Elevation range 4,950 to 10,800 feet.	Fronds mature June to September	**Absent.** Wet soil habitat not present within project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Botrychium minganense Mingan moonwort	FSS			2B.2	Wet or moist soils in lower montane coniferous forests, such as along the edges of lakes and streams. Elevation range 4,950 to 6,039 feet.	Fronds mature June to September	**Absent.** Wet soil habitat not present within project impact area.
Brasenia schreberi Watershield				2B.3	Freshwater marshes and swamps. Elevation range 95 to 7,220 feet.	June to September	**Absent.** Suitable habitat is absent within project impact area.
Carex davyi Davy's sedge				1B.3	Perennial herb that prefers subalpine and upper montane coniferous forests between 5,000 to 10,500 feet; usually in wetlands.	May to August	**Absent.** Project impact area contains little suitable habitat. Not encountered.
Carex hystericina Porcupine sedge				2B.1	Marshes and swamps along streambanks. Elevation range 2,000 to 3,000 feet.	May to June	**Absent.** Suitable habitat is absent within project impact area. Outside of elevation range.
Carex limosa Mud sedge		S3		2B.2	Perennial rhizomatous herb that prefers bogs, fens, meadows, seeps, marshes, swamps, and both lower and upper montane coniferous forests. Elevation range is between 3,900 and 8,900 feet.	June to August	**Absent.** Site contains little suitable habitat. Not encountered. CNDDB occurrence data from 7/30/2014 exists within 1 mile of project impact area. Not encountered during survey.
Chaenactic douglasii* var. *alpina Alpine dusty maidens				2B.3	Alpine boulder and rock fields on granitic substrate. Elevation range 9,395 to 11,155 feet.	July to September	**Absent.** Suitable habitat is absent within project impact area. Outside of elevation range.
Cryptantha crymophila Subalpine cryptantha				1B.3	Subalpine coniferous forest on volcanic, rocky substrate. Elevation range 8,530 to 10,500	July to August	**Absent.** Suitable habitat is absent within project impact area. Outside of elevation range.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Draba asterophora* var. *asterophora Tahoe draba	FSS		SI	1B.2	Alpine boulder and rock fields in crevices, and open talus slopes of decomposed granite in subalpine coniferous forests. Elevation range 8,325 to 11,670 feet.	July to September	**Absent.** Suitable habitat is absent within project impact area. Outside of elevation range.
Draba asterophora* var. *macrocarpa Cup Lake draba	FSS		SI	1B.1	Alpine boulder and rock fields in shade of granitic rocks in subalpine coniferous forest. Elevation range 8,202 to 9,235 feet.	July to August	**Absent.** Outside of elevation range and project impact area lacks suitable habitat.
Epilobium oregonum Oregon fireweed				1B.2	Perennial herb that prefers mesic habitat including bogs and fens, but also lower and upper montane coniferous forests. Elevation range is between 1,650 and 7,300 feet.	June to September	**Absent.** Project impact area lacks undisturbed suitable habitat. Not encountered.
Epilobium palustre Marsh willowherb				2B.3	Perennial rhizomatous herb that prefers mesic habitat including bogs, fens, meadows, and seeps. Elevation 7,215 to 7,220 feet	July to August	**Absent.** Project impact area lacks undisturbed suitable habitat. Not encountered.
Eriogonum luteolum* var. *saltuarium Jack's wild buckwheat				1B.2	Upper montane coniferous forest, great basin scrub on sandy, granitic substrates. Elevation range between 5,577 and 7,874 feet.	July to September	**Absent.** Project impact area lacks undisturbed suitable habitat. Not encountered.
Glyceria grandis American manna grass				2B.3	Perennial rhizomatous herb that prefers bogs, fens, meadows, seeps, marshes, and swamps along stream banks, or lake margins. Elevation range is from 50 to 6,500 feet.	June to August	**Absent.** Project impact area lacks suitable habitat. Not encountered.
Helodium blandowii Blandow's bog-moss	FSS			2B.3	Bogs and fens that are not too rich in iron. Elevation range 6,562 to 8,859 feet.	Moss	**Absent.** Project impact area lacks suitable habitat. Not encountered.
Lewisia longipetala Long-petaled lewisia	FSS		SI	1B.3	Alpine boulder and rock fields in subalpine coniferous forests. Elevation range 8,325 to 9,740 feet.	June to August	**Absent.** Project impact area lacks suitable habitat. Outside of elevation range.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Meesia triquetra Three-ranked hump moss	FSS			4.2	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic). Elevation 4265 to 13992 feet.	July	**Absent.** Project impact area lacks undisturbed habitat.
Meesia uliginosa Broad-nerved hump-moss	FSS			2B.2	Bogs and fens, meadows and seeps in montane coniferous forests. Elevation range 4,290 to 8,250 feet.	July to October	**Absent.** Suitable habitat is absent within project impact area. CNDDB occurrence exists from 7/30/2014 within 1 mile of project impact area. Not encountered during survey.
Phacelia stebinsii Stebbins' phacelia				1B.2	Cismontane woodland, lower montane coniferous forest, Meadows and seeps. Elevation range 2,000 to 6,595 feet.	May to July	**Absent.** Project impact area lacks undisturbed suitable habitat. Not observed during survey.
Potamogeton robbinsii *Robbins' pondweed*				2B.3	This perennial rhizomatous herb prefers marshes and swamps (deep water, lakes). Elevation range 5,000 to 8,530 feet.	July to August	**Absent.** Project impact area lacks suitable habitat. Not encountered.
Rhamnus alnifolia Alder buckthorn				2B.2	Lower and upper montane coniferous forest, meadows and seeps, riparian scrub. Elevation range 4,490 to 6,990 feet.	May to July	**Absent.** Unsuitable habitat in project impact area. Not observed during survey.
Rorippa subumbellata Tahoe yellow cress	FSS	SE	SI	1B.1	Shoreline supporting decomposed granitic soils; known only from the shoreline of Lake Tahoe. Elevation range 6,210 to 6,230 feet.	Blooms May to September	**Absent.** Outside of elevation range and site lacks suitable habitat. Not encountered.
Schoenoplectus subterminalis Water bulrush				2B.3	Perennial rhizomatous herb that prefers bogs, fens, marshes and swamps, especially along montane lake margins. Elevation range from 2,400 to 7,300 feet.	June to August	**Absent.** Project impact area lacks suitable habitat. Not encountered.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Scutellaria galericulata Marsh scullcap		S2		2B.2	Lower montane coniferous forest, Meadows and seeps (mesic), marshes and swamps. Elevation range 0 to 6900 feet.	June to September	**Absent.** Project impact area lacks suitable habitat. Two CNDDB occurrences of species approximately 1 mile away from 8/1/2011 and 8/2/2014. Not detected during surveys.
Stuckenia filiformis Slender-leaved pondweed				2B.2	Perennial rhizomatous herb that prefers marshes, swamps, and a variety of shallow freshwater habitats. Elevation range from 980 to 7,000 feet.	May to July	**Absent.** Project impact area lacks suitable habitat. Not encountered.
Utricularia ochroleuca Cream-flowered bladderwort				2B.2	Perennial stoloniferous herb that can be found in meadows, seeps, marshes, swamps, and lake margins. Elevation range from 4,700 to 4,730 feet.	June to July	**Absent.** Outside of elevation range. Not encountered.
Herptile Species							
Rana sierrae Sierra Nevada yellow-legged frog	FE	ST, WL			Typical habitat includes lakes, ponds, marshes, meadows, and streams at high elevations – typically ranging from about 4,500 to 12,000 feet. Sierra Nevada yellow-legged frogs are highly aquatic. They are rarely found more than 3.3 feet from water. Waters that do not freeze to the bottom and which do not dry up are required for breeding.	N/A	**Absent.** Habitat is absent within project impact area. Not encountered during surveys. The closest observation was near the headwaters of the Upper Truckee River in 2008.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Mammal Species							
Gulo gulo luscus North American wolverine	PT	ST, FP			Extensive wilderness dominated by coniferous forest. Wolverines generally den in areas with snags, downed logs, large hollow trees, or talus.	N/A	**Absent.** Suitable alpine habitat is not present in the project impact area. There are very few documented occurrences in the region.
Lepus americanus tahoensis Sierra Nevada snowshoe hare		SSC			Dense deciduous streamside vegetation, forest undergrowth, dense thickets of young conifers, and patches of chaparral composed of ceanothus and manzanita. Generally associated with brush situated close to meadows.	N/A	**Absent.** Suitable habitat does not occur within project impact area.
Odocoileus hemionus Mule Deer			SI		Mule deer have a widespread distribution throughout most of California (CDFW 2018a). Locally, they are common to abundant migrants. Shrubs provide food, cover, and thermoregulation, making them essential habitat criteria. Openings interspersed through dense thickets and abundant edges are preferred. Deer require 3 quarts of water/day/100 lb. (Zeiner et al. 1990), so access to water and mineral licks are also critical features to suitable habitat.	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** Suitable fawning habitat is located within 1 mile of the project impact area. Project impact area is not suitable for fawning due to existing disturbance levels.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Taxidea taxus American badger		SSC			Uncommon, permanent resident found throughout most of the state, except in the northern North Coast area (Grinnell et al. 1937). Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Suitable habitat for badgers is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils (Zeiner et al. 1990).	N/A	**Unlikely.** Habitat requirements for cover, breeding, and foraging are lacking within the project impact area.
Fish Species							
Oncorhynchus clarkii henshawi Lahontan cutthroat trout	FT				Cold-water habitats including large terminal alkaline lakes, and alpine lakes, slow meandering rivers, mountain rivers, and small headwater tributary streams.	N/A	**Absent**. Suitable aquatic habitat is not present within the project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Bird Species							
Accipiter gentilis Northern goshawk		SSC	SI		Northern goshawk are distributed throughout California in middle to higher elevation forested areas, particularly in the North Coast Ranges through Sierra Nevada, Klamath, Cascade, and Warner Mountains (Zeiner et al. 1990). Locally, they can be yearlong residents and seasonal migrants. Goshawks usually nest on north-facing slopes near water and require mature conifer or aspen forests with large diameter trees, dense canopy cover, and an open under story interspersed with meadows or shrub patches. Open areas provide foraging opportunities, while logs, snags, and broken-top trees are used as "plucking posts" to de-feather prey. Nests are usually located within the largest tree in the stand, next to the bole of the tree, in the lower third of the canopy.	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** CNDDB occurrence data from 1981 for goshawk exists within 1 mile of the project impact area. Suitable nesting and foraging habitat is not present in the project impact area.
Aquila chrysaetos Golden eagle	BCC	FP	SI		Partially or completely open terrain around mountains, hills, and cliffs mostly in the western half of the United States. Builds large stick nests, often on cliff faces.	N/A	**Absent. No Potential to Impact to TRPA Threshold Standard.** The project impact area is impacted by human use and suitable habitat is lacking.
Asio otus Long-eared owl		SSC			Roosts in dense vegetation and forages in open grasslands and shrublands. Long-eared owls often use stick nests that were abandoned by other bird species.	N/A	**Absent.** Suitable nesting and foraging habitat is absent within the project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Empidonax traillii Willow flycatcher	FSS	SE			Willow flycatchers are rare to locally uncommon, summer residents in the Sierra Nevada and Cascade Range. In the Sierra Nevada, suitable habitat typically consists of broad, flat meadows that support riparian deciduous shrubs (particularly willows) and retain soil moisture throughout the nesting season (May-July). Three critical habitat components are sufficient meadow size, access to water, and presence of willows. Suitable nesting habitat must have willows (at least 2m high with foliage density of 50-70%) with low, exposed branches present (Sanders and Flett 1989). Generally, willow flycatchers inhabit meadows larger than 8 hectares (at 2000-8000 ft. in elevation) and do not typically utilize willow clumps along steep terrain, or narrow bands bordered by conifer forests.	N/A	**Absent.** Suitable nesting habitat is absent within the project impact area.
Falco peregrines American peregrine falcon		FP	SI		Peregrine falcons perch and nest on skyscrapers, water towers, cliffs, power pylons, and other tall structures.	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** Suitable breeding habitat does not exist in the project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Haliaeetus leucocephalus Bald eagle	BCC	SE, FP	SI		Bald eagles have an expansive range with breeding areas in Northern California, wintering mostly in the Klamath Basin, and a few favored inland areas of Southern California. Locally, they are yearlong residents and migrants in the Tahoe Basin. Bald eagles use shorelines along large bodies of water and river courses for both nesting and wintering. Snags, broken-topped trees, or rocks near water are required for foraging and nesting. Most nests are located in large trees with open branches within 1 mile of a water body. In Lake Tahoe, known nesting sites include Emerald Bay and Marlette Lake. Wintering sites are located in Taylor, Tallac, Pope, and Upper Truckee Marshes (Romsos 2000)	N/A	**Absent. No Potential to Impact TRPA Threshold Standard**. Suitable habitat does not exist within the project boundary. Preferred breeding habitat is not present in the project impact area.
Pandion haliaetus Osprey		WL	SI		Osprey are yearlong residents. Osprey diets are almost entirely fish; therefore, its range has a close association with open, calm, and clear waters for feeding. Platform nets are built atop large snags, living trees, and human structures. Tall, open trees called “pilot trees” are required nearby for landing approaches and flight practice for fledglings.	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** Suitable breeding and foraging habitat is not present in the project impact area.
Strix nebulosa Great gray owl	FSS	SE			Dense conifer forests adjacent to meadows and bogs. These birds nest in abandoned nests of other large birds on in broken topped trees or cavities in large trees.	N/A	**Absent.** Breeding habitat is not present within project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			
Strix oxxidentalis California spotted owl	FSS	SSC			California spotted owl are found in Northwest California, the foothills and mid-elevation ranges of the Sierra Nevada, and localized pockets of Southern California. Locally, they are yearlong residents. They can occur in several forest types, but generally choose to breed in forested regions with high canopy cover. Because these owls are cavity dwellers, their reproductive habitat requires snags and decadent trees. Mature forests exhibit optimal habitat because they have complex forest structure, variation in tree size and age, large amounts of course woody debris, and scattered clearings that provide foraging opportunities.	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** The project impact area is impacted by human use and suitable habitat is lacking.
Waterfowl (collectively)			SI		Mallards and other waterfowl are found throughout California in wetlands and waters such as lakes, creeks, drainages, marshes, and wet meadows. Locally, some species such as mallards are common, yearlong residents. While breeding, they need shallow-water areas with nest sites nearby. Usually nests in fairly dry sites in tall, dense herbaceous vegetation or low shrubbery within 300 feet of water, rarely up to 5 miles (Bellrose 1976).	N/A	**Absent. No Potential to Impact TRPA Threshold Standard.** No waterfowl habitat is present within the project impact area.

Species	Regulatory Status				Habitat Requirements	Blooming Period	Potential for Occurrence in the Project impact area
	Federal	State	TRPA	CNPS			

Present: Species observed on the sites at time of field surveys or during recent past.

Absent: Species not observed on the site and precluded from occurring there because habitat requirements not met.

Federally Listed Species (Federal):
FE = Federally Endangered
FT = Federally Threatened
FD = Federally Delisted
PT = Proposed Threatened
FCE = Federally Endangered Candidate
FPD = Proposed for Delisting
BCC = Bird of Conservation Concern

US Forest Service LTBMU (Federal):
FSS = Forest Service Sensitive

Tahoe Regional Planning Agency (TRPA):
SI = TRPA Special Interest Species

California State Listed Species (CA):
SE = State Endangered
ST = State Threatened
SCT = State Candidate Threatened
SR = State Rare
SC = State Candidate
WL = CDFW Watch List
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected

California Native Plant Society (CNPS) List Categories:
1 = Rare in California and elsewhere
2 = Rare in California, but not elsewhere
A = Presumed extirpated or extinct
B = Rare, threatened, or endangered
3 = Plants about which we need more information
4 = Plants of limited distribution

CNPS Threat Code Extensions:
.1 = Seriously endangered in California (Over 80% of occurrences threatened)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened)

Sources: CDFW 2020, TRPA 2020, USFWS 2020

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 Habitats and Natural Communities of Special Concern

Habitats are of special concern based on (1) federal, state, and local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special status plants or animals occurring on site. None of the plant communities in the project impact area qualify as Natural Communities of Special Concern (Sawyer et al. 2009). WOUS (which includes wetlands) are also considered sensitive by both federal and state agencies but are discussed in more detail in **Section 3.1.2.5**.

4.1.1 Impacts to Riparian Habitat

Riparian habitat is absent with the project impact area.

4.2 Special Status Plant Species

A total of 30 special status plant species were identified within a nine-quad search in the vicinity of the project impact area based on historical documentation in the California Natural Diversity Database and the California Native Plant Society's Rare Plant Inventory (**Table 3**). None of the 30 species have the potential to occur within the project impact area due to the lack of undisturbed suitable habitat within or adjacent to the project impact area. No plant SSS with potential to occur were identified during the field survey on August 28, 2019. Based on the urbanized nature and history of ground disturbance within the majority of project impact area, it is unlikely that any special status species would occur within or adjacent to the project impact area in the future. Since no special status plant species were found to be present, avoidance and minimization efforts, project impacts, compensatory mitigation, and cumulative impacts are not being proposed.

4.3 Special Status Animal Species Occurrences

Animals are considered to be of special concern based on (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. No special status animal species were found to be present within the project impact area.

A total of 16 special status animal species were identified during the database research of the BSA. These species were determined to be absent within the project impact area as noted in **Table 3.**

Suitable habitat is absent for the three FESA-listed animal species known to occur in the region of the project (Lahontan cutthroat trout, North American wolverine, and Sierra Nevada yellow-legged frog). Potential habitat designated by the USFS LTBMU for Sierra Nevada yellow-legged frog is present within Meyers Creek approximately 200 feet to the west of the project impact area (**Appendix A, Figure 4**). No CNDDB occurrence records exist for Sierra Nevada yellow-legged frog within the BSA. Sierra Nevada yellow-legged frogs are usually found within 6 feet of water (Nafis 2019) and if frogs were to occur in Meyers Creek, it is unlikely that they would travel overland

into the project impact area. The frogs' tendency to stay within a few feet of water, the lack of suitable habitat within the project impact area, as well as the lack of known occurrences for the species within the Biological Study Area leads to the conclusion that Sierra Nevada yellow legged frog is absent within the project impact area.

The field visit and reconnaissance level survey confirmed that suitable habitat all three federally-listed species is absent within the project impact area.

Survey Results for Special Status Species with Potential to Occur within Project Impact Area

Mule deer fawning habitat is designated by TRPA as a protected habitat. Mule deer have a widespread distribution throughout most of California. Locally they are common to abundant migrants. Shrubs provide food, cover and thermoregulation, making them essential habitat criteria. Openings interspersed through dense thickets and abundant edges are preferred. Access to water and mineral licks are also critical features to suitable habitat. TRPA designated fawning habitat is present approximately 0.5 miles south-east of the project impact area. The disturbed nature of the project impact area and its location within a highway corridor makes it unsuitable for fawning.

Northern goshawks can be year-round residents or migratory depending on their prey population size and distribution. They typically construct nests in large conifer trees just below canopy level often in the largest tree in the stand. Foraging goshawks move rapidly through the forest, perch to perch, punctuated with brief periods of prey searching. Northern goshawks hunt by flying rapidly along forest edges, across openings, and through dense vegetation to surprise prey. Easily startled by human activity, northern goshawks prefer to forage near intact large forests. These birds could pass through the project impact area, but low-quality habitat on and nearby the project impact area suggest breeding and primary foraging will occur elsewhere. Northern goshawks were not observed or heard during the reconnaissance-level surveys.

Project Impacts

The disturbed nature of the project impact area and its location within a highway corridor make the occurrence of special status species during project activities unlikely. The project would not impact special status species.

Avoidance and Minimization Efforts

Meyers Creek to the west of the project impact area is a tributary of the Upper Truckee River. The Upper Truckee River is the largest source of sediment to Lake Tahoe; therefore, BMPs per TRPA standards will be included in the project's stormwater pollution and prevention plan to protect water quality during construction.

To avoid impact to nesting migratory birds, a survey for active bird nests shall be conducted by a qualified biologist no more than 10 days prior to the initiation of construction activities that would result in tree and vegetation removal. The details of this survey effort are provided in **Section 5** below.

Compensatory Mitigation

The project is not anticipated to impact special status species. Therefore, no compensatory mitigation is proposed for special status species.

Cumulative Impacts

Because intersection design and traffic safety would be the only improvements associated with the project, the project will not result in cumulative impacts to special status species known to occur in the region.

Chapter 5 – Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

A USFWS species list was acquired for this project on April 25, 2019 and was updated on April 14, 2020 (**Appendix D**). According to this list, federally listed species that may occur in the BSA include Sierra Nevada yellow-legged frog, North American wolverine, and Lahontan cutthroat trout.

Undisturbed wilderness without human influence is preferred by North American wolverine. The disturbance level and noise associated with the project impact area makes the habitat in the area unsuitable for the species. Therefore, the proposed project is anticipated to have no effect on North American wolverine.

No aquatic habitat for Lahontan cutthroat trout is present within or adjacent to the project impact area. Therefore, the proposed project is anticipated to have no effect on Lahontan cutthroat trout.

The reconnaissance survey confirmed that potential habitat for SNYLF is absent within the project impact area. Historical occurrences of SNYLF are dated and geographically disparate from the project impact area. The construction footprint of the project has been designed to avoid impacts to the Meyers creek and its associated riparian habitat. Therefore, the proposed project is anticipated to have no effect on SNYLF.

5.2 Essential Fish Habitat Consultation Summary

Essential Fish Habitat consultation was not initiated with NOAA Fisheries since no Essential Fish Habitat was identified within the project impact area.

5.3 California Endangered Species Act Consultation Summary

No take of state-listed species is anticipated, and no state-listed species have been identified during reconnaissance-level surveys. Due to lack of quality, undisturbed habitat and the fragmented nature of native vegetation, the species listed in the CESA are not likely to be present in the project impact area Therefore, no effects to California-listed endangered species are anticipated as a result of project activities. A California Endangered Species Act consultation has not occurred due to the lack of designated critical habitat for California-listed endangered species within the project impact area.

5.4 Wetlands and Other Waters Coordination Summary

NCE surveyed a total of 13.92 acres. Within the survey area, NCE delineated three aquatic resources that are potentially jurisdictional waters of the United States due to presence of ordinary high water mark indicators and a connection to Meyers Creek - a tributary to the Upper Truckee River, and ultimately Lake Tahoe, a traditional navigable waterway.

NCE delineated three potentially jurisdictional features within the survey area:

- Drainage 1 (D1): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size within the

survey area. There is potential for construction of inlet protection and inlet control to correct existing drainage deficiencies at the culvert located at the end of this drainage that conveys water under Highway 50.

- Drainage 4 (D4): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size within the survey area. This drainage will not be impacted by project activities, however, there will be a temporary impact to the existing roadway culvert in between D4 and D1 to remove and replace drainage structures in the roadway.
- Drainage 5 (D5): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.026 acres in size within the survey area. The existing roadway culvert under Pioneer Trail will be extended approximately 20 feet into the drainage on each side of the road to accommodate a culvert extension.

NCE also delineated two potentially non-jurisdictional features. These features appear to be man-made in uplands for the purposes of stormwater management:

- Drainage 2 (D2): This is a dry, man-made stormwater ditch was created in an upland to transport stormwater into a wetland (not in the survey area) and is approximately 0.023 acres in size within the survey area.
- Drainage 3 (D3): This is a dry, man-made stormwater ditch was created in an upland to transport stormwater into a wetland (not in the survey area) and is approximately 0.013 acres in size within the survey area.

The delineation was conducted in accordance with the:

- 1987 Corps of Engineers Wetland Delineation Manual; and
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), May 2010.

These findings should be considered preliminary until the United States Army Corps of Engineers makes a final approved jurisdictional determination in coordination with the United States Environmental Protection Agency.

5.5 Invasive Species

One invasive weed species was identified within the project impact area: Sulphur cinquefoil (*Potentilla recta*). Sulphur cinquefoil (*Potentilla recta*) is deemed a “noxious” weed by California Department of Food and Agriculture (CDFA). Sulphur cinquefoil is also ranked as a “Top Priority Weed in the Lake Tahoe Basin by The Lake Tahoe Basin Weed Coordinating Group.

The following weed best management practices will be implemented in order to prevent the spread of noxious weeds during project activities:

- All hay, straw, hay bales, straw bales, seed, mulch or other material used for erosion control or landscaping shall be free of noxious weed seeds and propagules. Noxious weeds are defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds.

- All equipment brought to a project site for construction shall be thoroughly cleaned of all dirt and vegetation prior to entering the site in order to prevent importing noxious weeds.
- All materials brought to a project site, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weed seeds and propagules.

- The property owner shall maintain and implement an effective program for the monitoring and control of noxious weeds.

5.6 Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game (CDFG) Code (Section 3500) also prohibits the destruction of any nest, egg, or nestling.

If vegetation removal or construction occurs during the nesting season (typically February 1 through September 30) then a survey for active bird nests shall be conducted by a qualified biologist no more than 10 days prior to initiation of construction activities. If nesting birds are detected within the project area during the survey, consultation with CDFW and the USFWS is recommended in order to establish acceptable avoidance or minimization measures to avoid impacts to migratory birds. Avoidance measures could include the establishment of a suitable activity-free buffer around active nests. The size of the buffer, duration of buffer, acceptable activities, etc. will be established through consultation with the agencies. The avoidance or minimization plan shall be submitted to the project proponent for review and approval prior to the start of construction activities. These measures will ensure that no nesting birds are impacted by construction activities.

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Appendix A – Figures



Legend

- Project Impact Area
- Staging Area
- Streams

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Impact Area

N

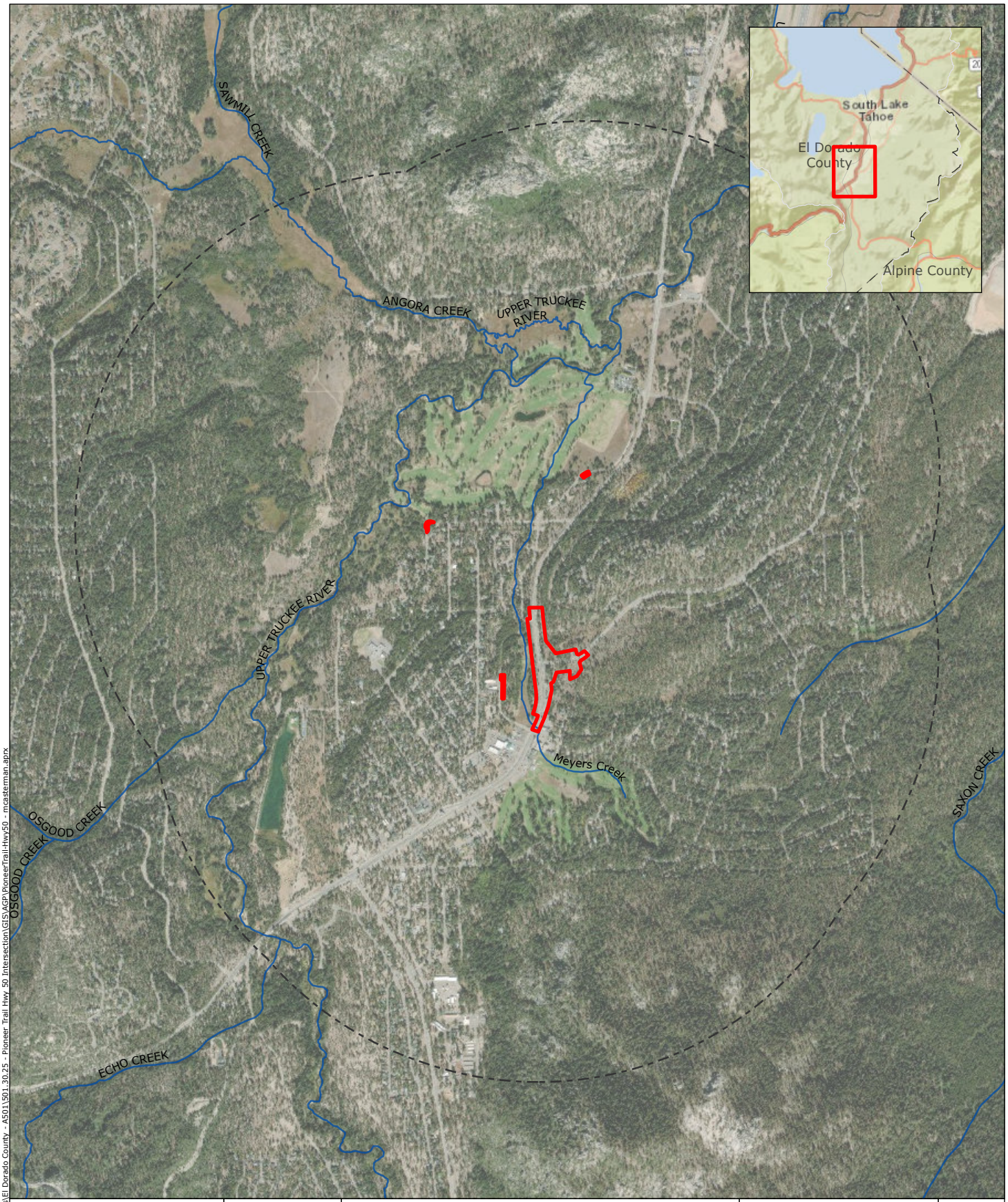
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FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
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Legend

- Biological Study Area
- Project Impact Area
- Streams

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Biological Study Area

N

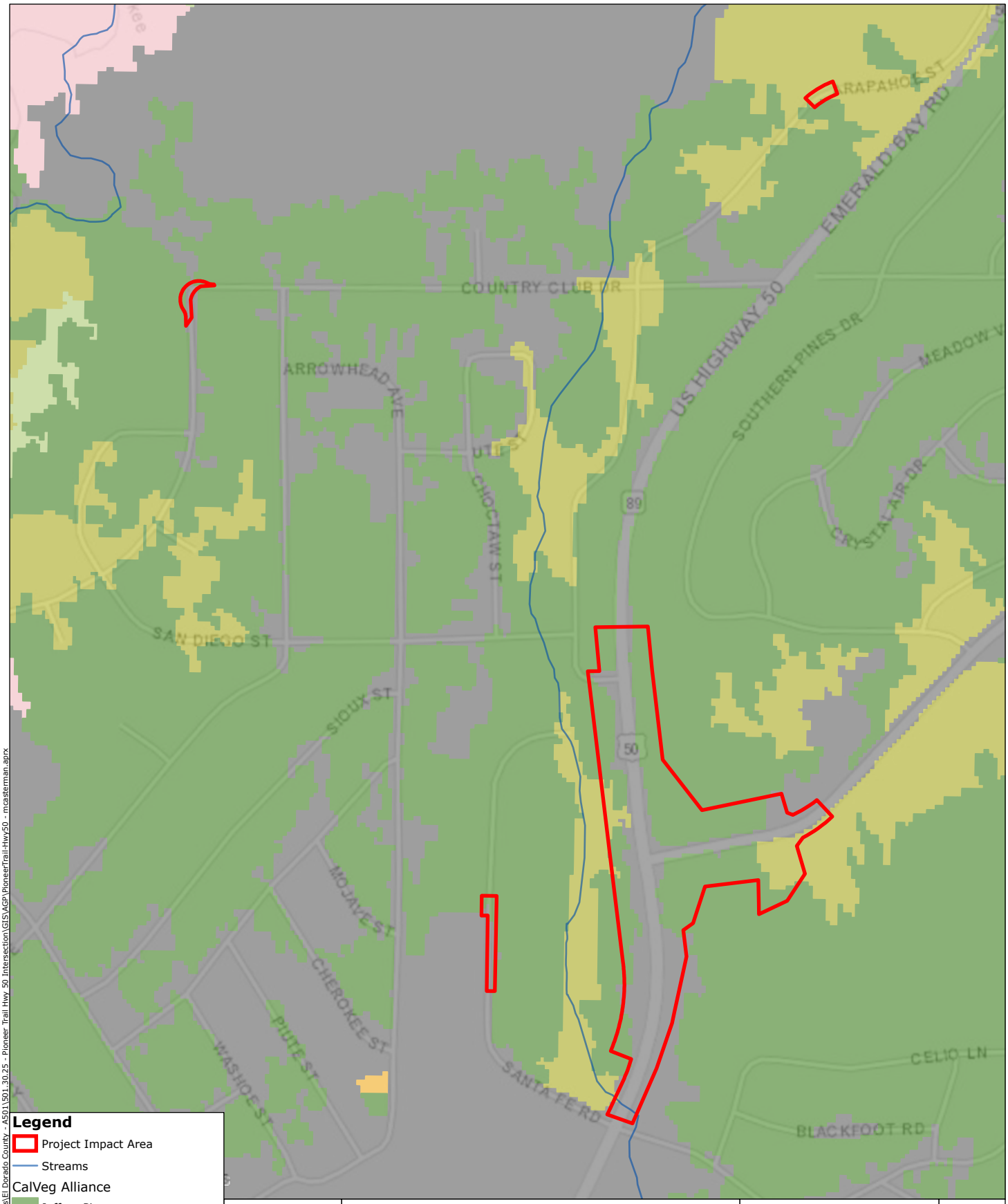
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FIGURE 2

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Legend

- Project Impact Area
- Streams

CalVeg Alliance

- Jeffrey Pine
- Lodgepole Pine
- Perennial Grassland
- Sagebrush
- Sierran Mixed Conifer
- Urban

Pioneer Trail/US 50 Intersection Safety Improvement Project

Vegetation

N

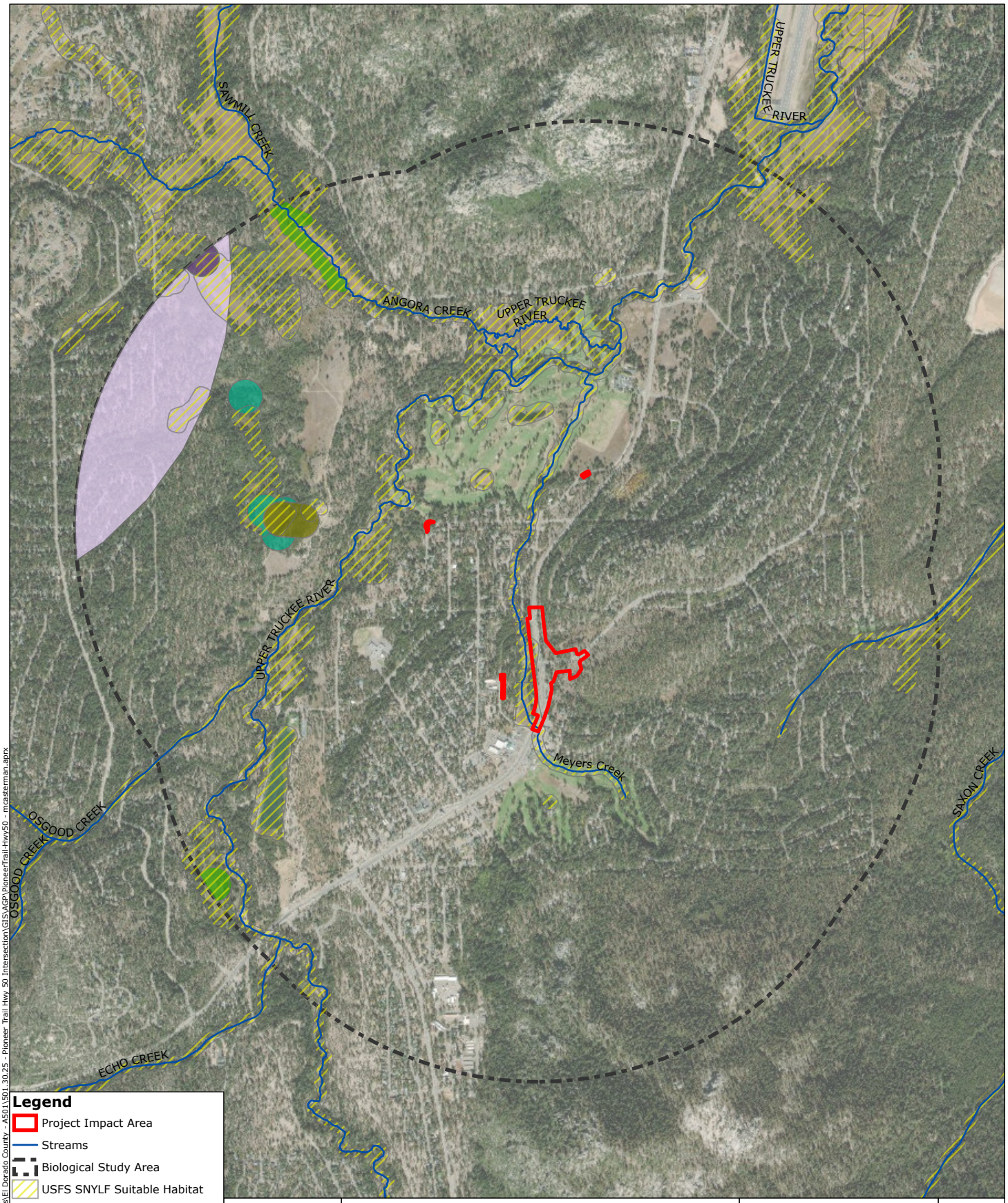
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FIGURE 3

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Legend

- Project Impact Area
- Streams
- Biological Study Area
- USFS SNYLF Suitable Habitat

CNDDB Occurrence

- broad-nerved hump moss
- long-eared owl
- marsh skullcap
- mud sedge
- northern goshawk

Pioneer Trail/US 50 Intersection Safety Improvement Project

Special Status Species Occurrences and Habitat

N

1 in. = 2,000 ft.

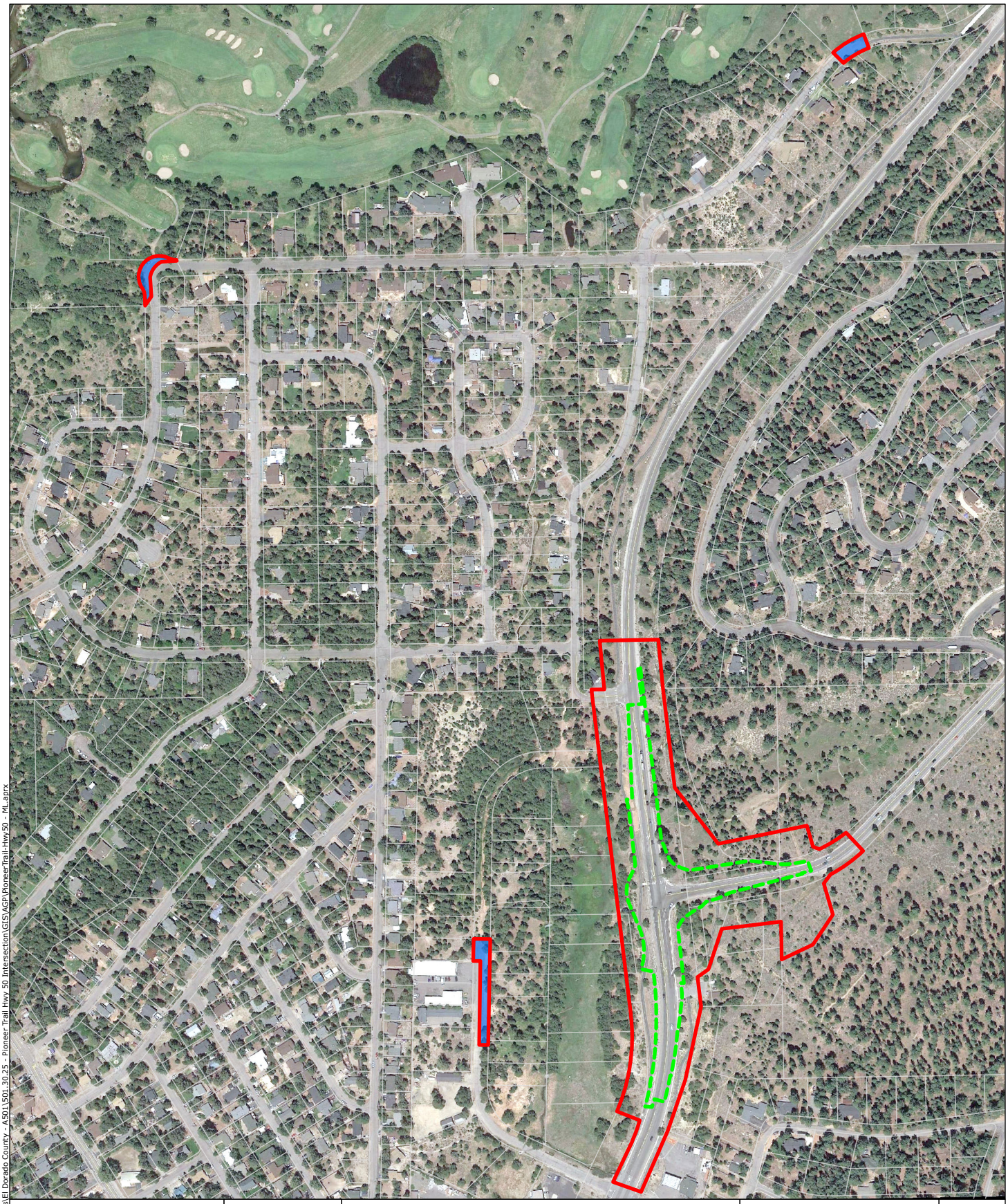
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FIGURE 4

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Appendix B – Preliminary Construction Plans



Project Impact Area
Staging Area
Parcel Boundary
Proposed Extent of Improvements

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Detail Map

N

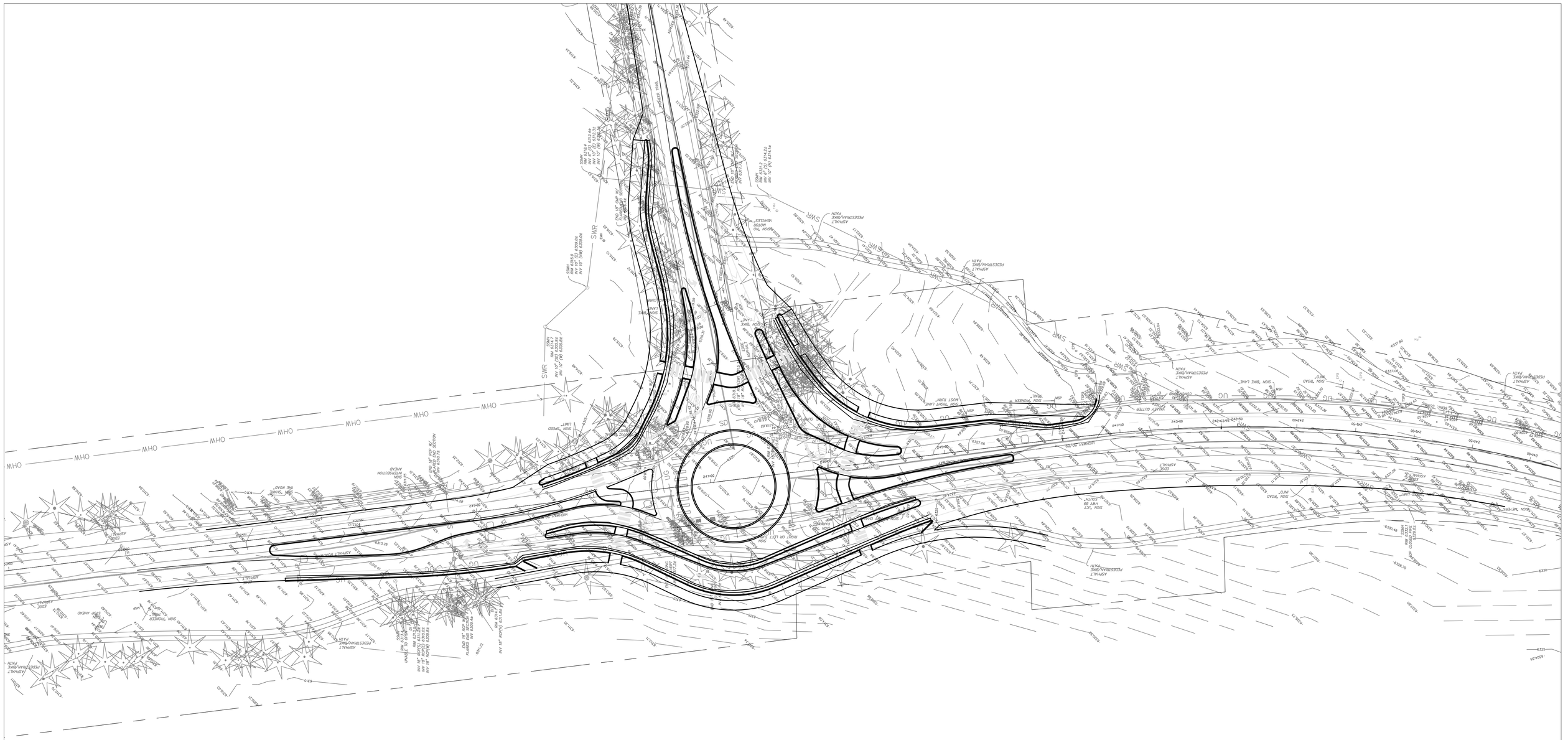
1 in. = 450 ft.

0 450 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
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OHW
SWR
SD
UG
ASPHALT PEDESTRIAN/BIKE PATH
CONC. SIDEWALK
SIGN "BIKE LANE"
SIGN "NO TRUCKS"
SIGN "SPEED LIMIT"
SIGN "NO TRUCK RIE ROAD"
SIGN "NO TRUCK RIE ROAD"
SIGN "NO TRUCK RIE ROAD

Appendix C – Photos



Pioneer Trail/US50 Intersection looking north-west.



Drainage at eastern side of project area looking south.



Roadside drainage at northern end of project area looking south.



Landscape on east side of US50 south of Pioneer Trail intersection, looking south.

Appendix D – USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301
http://www.fws.gov/nevada/

In Reply Refer To:
Consultation Code: 08ENVD00-2019-SLI-0685
Event Code: 08ENVD00-2020-E-00937
Project Name: Pioneer Trail Roundabout

April 14, 2020

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (ESA, 16 U.S.C. 1531 *et seq*.), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit http://www.fws.gov/nevada/es/ipac.html.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq*.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or

designated or proposed critical habitat. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally, as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation, for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (http://heritage.nv.gov). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (http://www.leg.state.nv.us/NAC/NAC-503.html). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to take, or possess any parts of protected fish and wildlife species. Please visit http://www.ndow.org or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq*.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Service's wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

The Service's Pacific Southwest Region developed the *Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities* (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (*e.g.*, changes in blade cut-in speed, assessments of blade “feathering” success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee's Avian Protection Plan template (http://www.aplic.org/) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service's wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20grouse%20lek%205%20mile%20public.pdf.

Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 *et seq*.), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to

avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving communications towers (*e.g.*, cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

If wetlands, springs, or streams are are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

The table below outlines lead FWS field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project, and send any documentation regarding your project to that corresponding office. Therefore, the lead FWS field office may not be the office listed above in the letterhead.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*

Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO
Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO

Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)
Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO

Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO
Mono	Humboldt Toiyabe National Forest	All	RFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO
Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO

San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO
Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO

Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO
Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)
Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO

Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO
Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

***Office Leads:**

AFWO=Arcata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yreka Fish and Wildlife Office

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

Project Summary

Consultation Code: 08ENVD00-2019-SLI-0685

Event Code: 08ENVD00-2020-E-00937

Project Name: Pioneer Trail Roundabout

Project Type: TRANSPORTATION

Project Description: Roundabout at Pioneer Trail and Hwy 50

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.85935924627415N120.01130905133269W



Counties: El Dorado, CA

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened

Amphibians

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9529	Endangered

Fishes

NAME	STATUS
Lahontan Cutthroat Trout *Oncorhynchus clarkii henshawi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/233/office/14320.pdf	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Williamson's Sapsucker *Sphyrapicus thyroideus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8832	Breeds May 1 to Jul 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

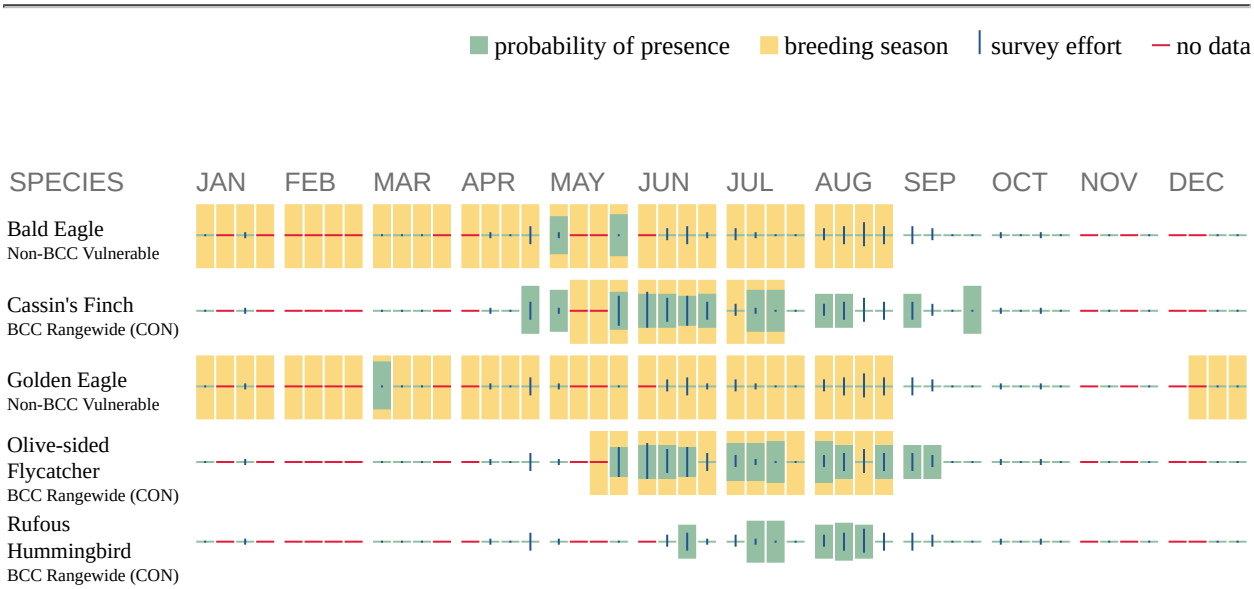
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

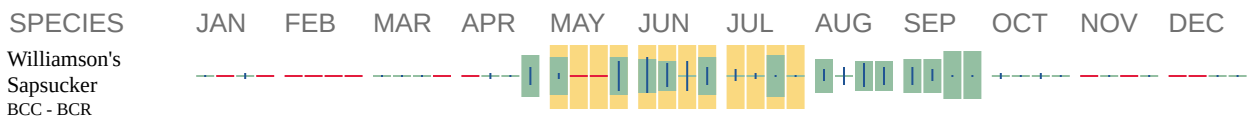
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical

Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14305
Key Quad: Emerald Bay (3812081)
Occurrence Number: 125
EO Index: 26682
Element Code: ABNKC12060
Occurrence Last Updated: 2008-07-07

Scientific Name: *Accipiter gentilis*
Common Name: northern goshawk

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G5
State: S3

Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDF_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFS_S-Sensitive

General Habitat:
WITHIN, AND IN VICINITY OF, CONIFEROUS FOREST. USES OLD NESTS, AND MAINTAINS ALTERNATE SITES.

Micro Habitat:
USUALLY NESTS ON NORTH SLOPES, NEAR WATER. RED FIR, LODGEPOLE PINE, JEFFREY PINE, AND ASPENS ARE TYPICAL NEST TREES.

Last Date Observed: 1981-07-10
Last Survey Date: 1981-07-10
Owner/Manager: USFS-LAKE TAHOE BMU
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
ANGORA CREEK.

Detailed Location:

Ecological:

Threats:

General:
EYRIE NUMBER ED002. ACTIVE NEST IN A WHITE FIR FLEDGED TWO YOUNG IN 1981. (REED).

PLSS: T12N, R17E, Sec. 24, NE (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4307195 E756211
Latitude/Longitude: 38.87629 / -120.04658
Elevation (feet): 6,440

County Summary:
El Dorado

Quad Summary:
Echo Lake (3812071), Emerald Bay (3812081)

Sources:

DFG84U0002 CALIFORNIA DEPARTMENT OF FISH & GAME - PRINTOUT FROM RON SCHLORFF (DFG) FOR NORTHERN GOSHAWK (ACCIPITER GENTILIS) NEST CODES. 1984-10-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A6483
Key Quad: Echo Lake (3812071)
Occurrence Number: 47
EO Index: 108244
Element Code: NBMUS4L030
Occurrence Last Updated: 2017-09-22

Scientific Name: *Meesia uliginosa*
Common Name: broad-nerved hump moss

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 2B.2
Other Lists: USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G5
State: S3

General Habitat:

MEADOWS AND SEEPS, BOGS AND FENS, UPPER MONTANE CONIFEROUS FOREST, SUBALPINE CONIFEROUS FOREST.

Micro Habitat:

MOSS ON DAMP SOIL. OFTEN FOUND ON THE EDGE OF FENS OR RAISED ABOVE THE FEN ON HUMMOCKS/SHRUB BASES. 1095-2805 M.

Last Date Observed: 2014-07-30
Last Survey Date: 2014-07-30
Owner/Manager: DPR-WASHOE MEADOWS SP
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

WASHOE MEADOWS STATE PARK; APPROXIMATELY 0.4 AIR MILE WEST OF COUNTRY CLUB DR/BAKERSFIELD ST INTERSECTION.

Detailed Location:

MAPPED ACCORDING TO 2014 DEAN COORDINATES, IN THE SE 1/4 OF THE SE 1/4 OF SECTION 19.

Ecological:

GROWING WITH PLATANTHERA, MOSSES, JUNCUS, SALIX, DROSERA AT BASE OF LODGEPOLE PINE. GROWS ON BARE DAMP SOIL IN FEN-LIKE HABITAT.

Threats:

STATE PARKS IS GOING TO BUILD A GOLF COURSE NEARBY.

General:

29 PATCHES OBSERVED IN 2014; PATCHES RANGE IN SIZE FROM 1 FOOT TO 12 FEET IN DIAMETER.

PLSS: T12N, R18E, Sec. 19, SE (M)
Accuracy: specific area
Area (acres): 9
UTM: Zone-10 N4306084 E758100
Latitude/Longitude: 38.86573 / -120.02524
Elevation (feet): 6,320

County Summary:

El Dorado

Quad Summary:

Echo Lake (3812071)

Sources:

DEA14F0009 DEAN, E. (UNIVERSITY OF CALIFORNIA, DAVIS-CENTER FOR PLANT DIVERSITY) - FIELD SURVEY FORM FOR MEESIA TRIQUETRA 2014-07-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	83682	**EO Index:**	84710
Key Quad:	Echo Lake (3812071)	**Element Code:**	PDLAM1U0J0
Occurrence Number:	31	**Occurrence Last Updated:**	2017-05-18

Scientific Name: *Scutellaria galericulata*

Common Name: marsh skullcap

Listing Status: **Federal:** None

State: None

Rare Plant Rank: 2B.2

Other Lists:

CNDDB Element Ranks: **Global:** G5

State: S2

General Habitat:

MARSHES AND SWAMPS, LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro Habitat:

SWAMPS AND WET PLACES. 0-1950 M.

Last Date Observed:	2011-08-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-08-01	**Occurrence Rank:**	Good
Owner/Manager:	USFS-LAKE TAHOE BMU	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF UPPER TRUCKEE RIVER; ABOUT 0.27 AIR MILE NORTH OF THE JUNCTION OF US-50 AND N UPPER TRUCKEE ROAD, MEYERS.

Detailed Location:

FROM MEYERS TURN RIGHT ON NORTH UPPER TRUCKEE, RIGHT ON E SAN BERNADINO, RIGHT ON SHAWNEE, RIGHT ON OAXACO. PARK AT END OF OAXACO, WALK DOWN THROUGH FOREST AND OUT INTO MEADOW. MAPPED BY CNDDB FROM 2010 ENGELHARDT COORDINATES.

Ecological:

FOUND AT EDGE OF WET MEADOW/FEN COMPLEX ADJACENT TO SALIX. OTHER SPECIES INCLUDE CAREX NEBRASCENSIS, CAREX SIMULATA, EPILOBIUM CILIATUM, MIMULUS GUTTATUS, JUNCUS ARCTICUS, AND SALIX SP.

Threats:

HYDROLOGICAL CHANGES, FUTURE FOREST THINNING PROJECTS.

General:

204 PLANTS OBSERVED IN 2010. 160 PLANTS IN 2011; PLANTS GROWING SLOWLY, NOT AS ROBUST AS AT OTHER SITES. THIS IS LAKE TAHOE BASIN MANAGEMENT UNIT OCCURRENCE SCGA3.

PLSS:	T12N, R18E, Sec. 31, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-10 N4304402 E757771	**Latitude/Longitude:**	38.85070 / -120.02966	**Elevation (feet):**	6,400

County Summary:	**Quad Summary:**
El Dorado	Echo Lake (3812071)

Sources:

ENG10F0019	ENGELHARDT, B. & C. MCKERNAN (U.S. FOREST SERVICE) - FIELD SURVEY FORM FOR SCUTELLARIA GALERICULATA 2010-06-28
ENG11F0003	ENGELHARDT, B. & C. MCKERNAN - FIELD SURVEY FORM FOR SCUTELLARIA GALERICULATA 2011-08-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 73272
EO Index: 74226
Key Quad: Echo Lake (3812071)
Element Code: PMCYP037K0
Occurrence Number: 33
Occurrence Last Updated: 2016-03-04

Scientific Name: *Carex limosa*
Common Name: mud sedge

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 2B.2
Other Lists:

CNDDB Element Ranks: **Global:** G5
State: S3

General Habitat:

BOGS AND FENS, LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS, MARSHES AND SWAMPS, UPPER MONTANE CONIFEROUS FOREST.

Micro Habitat:

IN FLOATING BOGS AND SOGGY MEADOWS AND EDGES OF LAKES. 1370-2790 M.

Last Date Observed: 2014-07-30
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2014-07-30
Occurrence Rank: Good
Owner/Manager: DPR-LAKE VALLEY SRA
Trend: Unknown
Presence: Presumed Extant

Location:

WASHOE MEADOWS STATE PARK.

Detailed Location:

SOUTH EDGE OF LARGEST FEN AND ALONG ADJACENT LOGGING ROAD NEAR SEWER MANHOLE #66. MAPPED AS 2 POLYGONS ACCORDING TO 2014 DEAN COORDINATES AND 2011 CNPS DIGITAL DATA.

Ecological:

BOGGY WET AREA DOMINATED BY MOSSES, CAREX, ELEOCHARIS, VACCINIUM ULIGINOSUM, DROSERA, DODECATHEON, MICRANTHES OREGANA, ASTER ALPIGENUS, JUNCUS OXYMERIS, CAREX NEBRASCENSIS, ETC. HIGH COVER OF DROSERA AT THIS SITE.

Threats:

General:

IN 2014, SOUTHERN POLYGON HAD ABOUT 500 PLANTS AND NORTHERN POLYGON HAD ABOUT 100 PLANTS. PLANTS SCATTERED THROUGHOUT FENS.

PLSS: T12N, R18E, Sec. 19, SE (M)
Accuracy: specific area
Area (acres): 17
UTM: Zone-10 N4306124 E757986
Latitude/Longitude: 38.86613 / -120.02654
Elevation (feet): 6,350

County Summary:

El Dorado

Quad Summary:

Echo Lake (3812071)

Sources:

CNP11U0001	CALIFORNIA NATIVE PLANT SOCIETY - DATABASE OF RARE PLANTS AND MOSSES FROM LAKE TAHOE FENS 2011-05-13
DEA07S0002	DEAN, E. ET AL. - DEAN #4265 DAV #61734 2007-07-21
DEA07S0015	DEAN, E. ET AL. - DEAN #4450 DAV #73750 2007-08-24
DEA14F0001	DEAN, E. (UNIVERSITY OF CALIFORNIA, DAVIS-CENTER FOR PLANT DIVERSITY) - FIELD SURVEY FORM FOR CAREX LIMOSA 2014-05-27
DEA14S0001	DEAN, E. ET AL. - DEAN #8304 DAV #148456 2014-05-27
DEA14S0002	DEAN, E. ET AL. - DEAN #8258 DAV #148155 2014-05-26

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

31 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1B, 2B], FESA is one of [Endangered, Threatened, Candidate, Not Listed], CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3912011, 3812081, 3811988, 3811987, 3812071 3811978 and 3811977;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Arabis rigidissima var. demota	Galena Creek rockcress	Brassicaceae	perennial herb	Jul-Aug	1B.2	S1	G3T3Q
Astragalus austiniae	Austin's astragalus	Fabaceae	perennial herb	(May)Jul-Sep	1B.3	S2S3	G2G3
Boechera tularensis	Tulare rockcress	Brassicaceae	perennial herb	(May)Jun-Jul(Aug)	1B.3	S3	G3
Botrychium ascendens	upswept moonwort	Ophioglossaceae	perennial rhizomatous herb	(Jun)Jul-Aug	2B.3	S2	G3G4
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S3	G4
Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S3	G4G5
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Carex davyi	Davy's sedge	Cyperaceae	perennial herb	May-Aug	1B.3	S3	G3
Carex hystericina	porcupine sedge	Cyperaceae	perennial rhizomatous herb	May-Jun	2B.1	S2	G5
Carex limosa	mud sedge	Cyperaceae	perennial rhizomatous herb	Jun-Aug	2B.2	S3	G5
Chaenactis douglasii var. alpina	alpine dusty maidens	Asteraceae	perennial herb	Jul-Sep	2B.3	S2	G5T5
Cryptantha crymophila	subalpine cryptantha	Boraginaceae	perennial herb	Jul-Aug	1B.3	S3	G3
Draba asterophora var. asterophora	Tahoe draba	Brassicaceae	perennial herb	Jul-Aug(Sep)	1B.2	S2?	G2T2?
Draba asterophora var. macrocarpa	Cup Lake draba	Brassicaceae	perennial herb	Jul-Aug(Sep)	1B.1	S1	G2T1
Epilobium oreganum	Oregon fireweed	Onagraceae	perennial herb	Jun-Sep	1B.2	S2	G2
Epilobium palustre	marsh willowherb	Onagraceae	perennial rhizomatous herb	Jul-Aug	2B.3	S2	G5
Eriogonum luteolum var. saltuarium	Jack's wild buckwheat	Polygonaceae	annual herb	Jul-Sep	1B.2	S1	G5T1
Erythranthe carsonensis	Carson Valley	Phrymaceae	annual herb	Apr-Jun	1B.1	S1	G2

	monkeyflower						
Glyceria grandis	American manna grass	Poaceae	perennial rhizomatous herb	Jun-Aug	2B.3	S3	G5
Helodium blandowii	Blandow's bog moss	Helodiaceae	moss		2B.3	S2	G4
Lewisia longipetala	long-petaled lewisia	Montiaceae	perennial herb	Jul-Aug(Sep)	1B.3	S2	G2
Meesia uliginosa	broad-nerved hump moss	Meesiaceae	moss	Jul,Oct	2B.2	S3	G5
Phacelia stebbinsii	Stebbins' phacelia	Hydrophyllaceae	annual herb	May-Jul	1B.2	S3	G3
Potamogeton robbinsii	Robbins' pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	Jul-Aug	2B.3	S3	G5
Rhamnus alnifolia	alder buckthorn	Rhamnaceae	perennial deciduous shrub	May-Jul	2B.2	S3	G5
Rorippa subumbellata	Tahoe yellow cress	Brassicaceae	perennial rhizomatous herb	May-Sep	1B.1	S1	G1
Schoenoplectus subterminalis	water bulrush	Cyperaceae	perennial rhizomatous herb (aquatic)	Jun-Aug(Sep)	2B.3	S3	G4G5
Scutellaria galericulata	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S2S3	G5T5
Utricularia ochroleuca	cream-flowered bladderwort	Lentibulariaceae	perennial stoloniferous herb	Jun-Jul	2B.2	S1	G4G5
Viola purpurea ssp. aurea	golden violet	Violaceae	perennial herb	Apr-Jun	2B.2	S2	G5T2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 18 May 2020].

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APPENDIX D

AQUATIC RESOURCES DELINEATION REPORT AND USACE DETERMINATION CORRESPONDENCE

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Final Aquatic Resources Delineation Report

Pioneer Trail/US 50 Intersection Safety Improvement Project
April 2020

NCE
Reno, NV
1885 S. Arlington Ave., Suite 111
Reno, NV 89509



El Dorado County, Department of Transportation

Mr. Donaldo Palaroan
924B Emerald Bay Rd
South Lake Tahoe, CA 96150

FINAL AQUATIC RESOURCES DELINEATION REPORT

Pioneer Trail/US 50 Intersection Safety Improvement Project

Prepared for:

El Dorado County, Department of Transportation
Mr. Donaldo Palaroan, P.E.
924B Emerald Bay Rd
South Lake Tahoe, CA 96150

Prepared by:



Debra Lemke, PWS, CPESC
Senior Scientist

NCE
1885 S Arlington Ave, Ste 111
Reno, NV 89509

Executive Summary

NCE performed field investigations on September 17, 2019 evaluating the potential jurisdictional status of waters of the United States for the Pioneer Trail/US 50 Intersection Safety Improvement Project in El Dorado County, California.

Within the survey area, Meyers Creek is mapped by the United States Geological Survey topographic map and by the National Hydrography Dataset (NHD) as flowing through the project area in the southernmost part of the project. Meyers Creek is culverted through the southern survey area with the inlet and outlets located outside of the survey boundary; therefore, the creek was not delineated within survey limits. Two other NHD 'flow lines' are mapped within the survey area. There are no United States Fish and Wildlife Service National Wetlands Inventory mapped wetlands within the survey area.

NCE surveyed a total of 13.92 acres. Within the survey area, NCE delineated three aquatic resources that are potentially jurisdictional waters of the United States due to presence of ordinary high water mark indicators and a connection to Meyers Creek - a tributary to Upper Truckee River, and ultimately Lake Tahoe, a traditional navigable waterway.

NCE delineated three potentially jurisdictional features within the survey area (**Appendix A, Figure 1**):

- Drainage 1 (D1): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size within the survey area.

- Drainage 4 (D4): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size within the survey area.

- Drainage 5 (D5): This unnamed drainage is a non-relatively permanent water, Cowardin classified as Ephemeral, Riverine, and is approximately 0.026 acres in size within the survey area.

NCE also delineated two potentially non-jurisdictional features. These features appear to be man-made in uplands for the purposes of stormwater management (**Appendix A, Figure 1**):

- Drainage 2 (D2): This is a dry, man-made stormwater ditch was created in an upland to transport stormwater into a wetland (not in the survey area) and is approximately 0.023 acres in size within the survey area.

- Drainage 3 (D3): This is a dry, man-made stormwater ditch was created in an upland to transport stormwater into a wetland (not in the survey area) and is approximately 0.013 acres in size within the survey area.

The delineation was conducted in accordance with the:

- 1987 Corps of Engineers Wetland Delineation Manual; and
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), May 2010.

These findings should be considered preliminary until the United States Army Corps of Engineers makes a final approved jurisdictional determination in coordination with the United States Environmental Protection Agency.

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LIST OF ACRONYMS AND ABBREVIATIONS

MSL	Mean Sea Level
NHD	National Hydrologic Dataset
NWI	National Wetlands Inventory
NRCS	Natural Resource Conservation Service
OHWM	Ordinary High Water Mark
Project	Pioneer Trail/US 50 Intersection Safety Improvement Project
RPW	Relatively Permanent Water
TNW	Traditional Navigable Waterway
US 50	U.S. Route 50
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	Waters of the United States

1.0 INTRODUCTION

1.1 Contact and Project Information

El Dorado County contracted NCE to conduct a formal United States Army Corps of Engineers (USACE) delineation of aquatic resources within the project area for the Pioneer Trail/US 50 Intersection Safety Improvement Project (project). The El Dorado County contact is Mr. Donaldo Palaroan and his contact information is:

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Donaldo.palaroan@edcgov.us

Ms. Debra Lemke and Ms. Sarah Bryan of NCE conducted the aquatic resources delineation on September 17, 2019.

The project is located at the intersection of Pioneer Trail and U.S. Route 50 (US 50) in the community of Meyers in South Lake Tahoe, California (**Appendix B, Figure 1**). The survey area extends approximately 0.17 miles north and 0.19 miles south of the intersection along US 50. The purpose of the project is to improve traffic flow, as well as increase safety for all roadway users.

The survey area consists of roadway, right-of-way, staging areas, federal land, state lands, lands belonging to the California Tahoe Conservancy, and a portion of land is private property (**Appendix B, Figure 2**).

The survey area may be found on United States Geological Survey (USGS) Echo Lake, 7.5-minute series topographic quadrangle map (**Appendix B, Figure 3**).

1.2 Purpose

The purpose of this report is to identify and describe aquatic resources and to identify known possible sensitive plant, fish, wildlife species, and cultural/historic resources in the survey area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the project development process.
2. Document aquatic resource boundary determinations for review by the USACE.
3. Provide early indications of known sensitive species and historic/cultural properties within the survey area.
4. Provide background information.

2.0 BACKGROUND

2.1 Site Description

2.1.1 Location

The survey area is located north and south of the intersection of Pioneer Trail and US 50 (**Appendix B, Figure 2**). The survey area is located in the central portion of Section 29, Township 12 N, Range 18 E, and the southern half of Section 21, Township 12 N, Range 18E (Mount Diablo baseline) and is within the USGS Echo Lake 7.5 minute quadrangle map (**Appendix B, Figure 3**). At the southwestern corner of the survey area, the latitude is 38.8570712° N and the longitude is 120.0126347° W.

2.1.2 Site Access

To access the survey area from Stateline, Nevada, head southwest on US 50 West and turn left onto Pioneer Trail. Follow Pioneer Trail until Pioneer Trail intersects with US 50.

The survey area includes the US 50 corridor and adjacent area between Santa Fe Road and north of the intersection of US 50 and Pioneer Trail, as well as a portion of Pioneer Trail road and adjacent areas east of the intersection of US 50 and Pioneer Trail. In addition, there are three staging areas, two west of US 50 and one east of US 50 (**Appendix B, Figure 2**).

2.1.3 Land Use

Most of the land within the survey area is publicly owned and/or considered right-of-way, except for three parcels adjacent to the western shoulder of US 50. The extent of the survey area is fully located within the Echo Lake quadrangle limits. The survey area has been zoned for conservation, residential, mixed use, and recreation.

South of the survey area the surrounding land uses include mixed-use and recreation. Northwest of the project survey area is the Lake Tahoe Golf Course and southeast is the Tahoe Paradise Golf Course. The USGS topographic map identifies Meyers Creek flowing through the southern portion of the survey area (**Appendix B, Figure 3**).

2.1.4 Vegetation

Based on the California Wildlife Habitat Relationships (CWHR) dataset that presents broad scale vegetation communicates within the State of California (CDFW 2014), the survey area habitat includes predominantly Jeffrey pine fragmented by perennial grassland and urban land (**Appendix B, Figure 4**).

2.1.5 National Wetland Inventory and National Hydrography Dataset

There are no mapped United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) wetlands within the survey area (**Appendix B, Figure 5**). To the west of the survey area there are NWI mapped wetlands. There are three mapped USGS National Hydrography Dataset (NHD) flowlines within the survey area (**Appendix B, Figure 6**).

2.1.6 Soils

The soils at the survey area have been mapped by the Department of Agriculture, Natural Resource Conservation Service (NRCS), and were downloaded from the Web Soil Survey (NRCS 2019a). NRCS identified four soil types within the survey area (**Appendix B, Figure 7**). All four soil types and their hydric status are presented below and in **Table 1**.

Tahoe Complex, 0 to 2 percent slopes (Map Unit Symbol 7041)
Tahoe complex is a soil component that occurs on valley flats and floodplains. The parent material consists of alluvium derived from granitic and volcanic rock. Depth to a root restrictive layer is greater than 80 inches. The natural drainage class is very poorly drained. This soil is on the National Hydric Soils List (NRCS 2019 b).

Celio loamy coarse sand, 0 to 5 percent slopes (Map Unit Symbol 7431)
Celio loamy coarse sand is a soil component that occurs on outwash terraces. The parent material consists of alluvium and/or outwash. Depth to a root restrictive layer is 39 to 59 inches to duripan. The natural drainage class is somewhat poorly drained. This soil is on the National Hydric Soils List (NRCS 2019 b).

Jabu coarse sandy loam, 0 to 9 percent slopes (Map Unit Symbol 7461)
Jabu coarse sandy loam is a soil component that occurs on hillslopes of outwash terraces. The parent material consists of outwash derived from granodiorite. Depth to a restrictive layer is 39 to 79 inches to fragipan and 59 to 79 inches to densic material. The natural drainage class is well drained. This soil is on the National Hydric Soils List (NRCS 2019 b).

Meeks gravelly loamy coarse sand, 0 to 5 percent slopes, stony (Map Unit Symbol 7481)
This complex is a soil component that occurs on moraines. The parent material consists of outwash and/or till derived from granodiorite. Depth to a restrictive layer is 41 to 73 inches to duripan. The natural drainage class is somewhat excessively drained. This soil is on the National Hydric Soils List (NRCS 2019 b).

Table 1. Soils within the Survey Area

Map Unit Symbol	Name	Acres in Project	Percent of Project Area	National Hydric List
7041	Tahoe Complex, 0 to 2 percent slopes	0.62	4.5%	Yes
7431	Celio loamy coarse sand, 0 to 5 percent slopes	0.32	2.3%	Yes
7461	Jabu coarse sandy loam, 0 to 9 percent slopes	12.71	91.3%	Yes
7481	Meeks gravelly loamy coarse sand, 0 to 5 percent slopes, stony	0.27	1.9%	Yes
Totals for Project Survey Area		**13.92**	**100.0%**	

2.1.7 Hydrology
Direct precipitation, stormwater runoff from US 50, snowmelt within the project and vicinity, and nuisance water from commercial developments surrounding the survey area are the primary surface water sources.

3.0 METHODS

3.1 Literature Review

NCE reviewed available natural resource information for the region. References reviewed for this delineation are listed in **Section 5.0**. Pertinent site-specific reports and general references utilized for the delineation include the following:

- USFWS NWI mapping
- USGS NHD mapping
- Google Earth
- United States Department of the Interior, USGS. Echo Lake, California 7.5-minute series topographic quadrangle
- United States Department of Agriculture (USDA), NRCS. 2019a. Soils survey data for the project site accessed online at: *http://websoilsurvey.nrcs.usda.gov/app/*
- USDA, NRCS. 2019b. National hydric soils for the project survey area accessed online at: *http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/*
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- Gretag, Macbeth. 2000. *Munsell Soil Color Charts*. New Windsor, NY
- Cowardin, *et al*. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Washington D.C.
- USACE. 2019. *National Wetland Plant List, version 3.3.* Accessed online at: http://wetland_plants.usace.army.mil/

3.2 Research and Field Methodology

Prior to conducting the delineation, NCE reviewed the USGS topographic maps, USGS NHD, aerial photographs, USFWS NWI, and the NRCS Web Soil Survey for the survey area. These documents were reviewed for indications of ephemeral, intermittent, and perennial drainages as well as mapped wetlands and spring locations.

Wetlands

The survey area was investigated for the presence of wetlands utilizing the USACE 1987 three-parameter (vegetation, hydrology, and soils) methodology. This methodology was refined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), May 2010 and requires the collection of data on soils, vegetation, and hydrology at several locations to establish the potential jurisdictional boundary of wetlands.

Drainages

The survey area was delineated for drainages utilizing the presence of Ordinary High Water Mark (OHWM) indicators, evidence of frequent surface water flows, and a connection to a traditional navigable waterway (TNW). These characteristics were considered to be indicative of a jurisdictional waters of the United States (WOUS). Arid West Ephemeral and Intermittent Stream OHWM Data Sheets were completed for each drainage with the presence of OHWM indicators. If the drainage had OHWM indicators present, the drainage was followed to determine if the drainage flowed into another drainage with OHWM indicators or if these indicators terminated. Where the drainage exhibited OHWM indicators, width measurements were taken to be used in determining an average width of the drainage and height measurements from the OHWM to the drainage bottom were taken. When drainages with OHWM indicators left the area, an attempt was made to follow the drainage to determine if OHWM indicators terminated or a connection to a TNW. The OHWM indicator locations were recorded with a Trimble Geo7x GPS unit and representative photographs were taken.

3.3 Survey Data Integration

Boundaries of the potential aquatic resources within the project survey area were mapped using a Trimble Geo7x GPS unit and digitized in ESRI ArcGIS Pro 2.4.0 software. The horizontal datum is NAD 1983.

3.4 Property Owner Access

Three parcels are privately owned and are located adjacent to the western road shoulder of US 50 (**Appendix B, Figure 9**). No potential aquatic resources were identified on these three parcels. Due to this, property access statements were not mailed to the private parties.

4.0 RESULTS

4.1 Landscape Setting

The survey area is approximately 13.92 acres and was delineated by NCE on September 17, 2019. The survey area generally slopes from north to south. The east side of the site is higher than the west side. The highest point of the survey area on the southwest side is at 6,341 ft. above mean sea level (MSL) and the lowest point of the survey area on the northeast side is 6,322 feet above MSL.

There are no NWI mapped wetlands within the survey area. There are three unnamed NHD flowlines are present within the survey area. Two of the unnamed NHD features were delineated, and the third NHD feature is Meyers Creek. Meyers Creek is culverted through the southern survey area with the inlet and outlets located outside of the survey boundary; therefore, the creek was not delineated within survey limits (no impacts are proposed to Meyers Creek).

4.2 Aquatic Resources

Five aquatic resources were delineated and are presented below. For each drainage, **Appendix B, Figure 8** presents the ground photograph figure. Representative photographs are in **Appendix C**. The photographs are noted as Photo Point (PP) in **Appendix C** as well as on **Appendix B, Figure 8**. A plant list of the entire survey area is located in **Appendix D**. The OHWM datasheet is in **Appendix E**.

4.2.2 Drainage 1

Drainage 1 is located in the central part of the survey area. Within the survey area, this drainage starts downgradient of man-made erosion control features east of the survey area and exhibits OHWM indicators for its length to a connection point with 'Culvert 1 in' (**Appendix A, Figure 1**). Drainage 1 continues as Drainage 4 on the other side of Culvert 1. Culvert 1 is 19-inches tall and 30-inches wide.

The drainage was dry during the time of the delineation. The drainage contains an average OHWM width of 14-inches and is 4-inches deep. The drainage is 170 feet long within the survey area. OHWM data point D1 was taken at a representative location of the drainage.

This drainage is in identified on the NHD (**Appendix B, Figure 6**). Drainage 1 connects to Meyers Creek (through a wetland) which is tributary to the Upper Truckee River and Lake Tahoe. Due to presence of OHWM indicators and connectivity to Lake Tahoe, a TNW, NCE believes Drainage 1 is a potentially jurisdictional waterway. This drainage is Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size (**Appendix A, Figure 1**).

4.2.2 Drainage 2

Drainage 2 is a rip-rap lined channel that parallels US 50 within the survey area. Due to the presence of rip-rap, and the lack of presence on the NHD, this drainage appears to be man-made in uplands for the purposes of stormwater management.

The drainage was dry during the time of the delineation. The drainage is 597 feet long within the survey area. OHWM data points D2a and D2b were taken at representative locations of the drainage. Data point D2a contains an OHWM width of 12-inches and is 7-inches deep, and Data point D2b contains an OHWM width of 30-inches and is 5-inches deep. An average width of 21-inches was used to determine the acreage of the drainage.

NCE believes Drainage 2 is a non-federal jurisdictional waterway due to it being man-made in an upland for stormwater purposes. This drainage is approximately 0.023 acres in size (**Appendix A, Figure 1**).

4.2.2 Drainage 3

Drainage 3 is a dry drainage that parallels US 50. This drainage is not on the NHD and appears to be man-made for stormwater purposes. The drainage begins near the southern end of Drainage 2 and ends at Culvert 1 (Drainage 1).

The drainage was dry during the time of the delineation. The drainage is 203 feet long within the survey area. OHWM data points 3 and 3a were taken at representative locations of the drainage. Data point 3 contains an OHWM width of 22-inches and is 6-inches deep, and Data point 3a contains an OHWM width of 45-inches and is 9-inches deep. An average width of 33.5-inches was used to determine the acreage of the drainage.

NCE believes Drainage 3 is a non-federal jurisdictional waterway due to it being man-made in an upland for stormwater purposes. This drainage is approximately 0.013 acres in size (**Appendix A, Figure 1**).

4.2.2 Drainage 4

Drainage 4 begins in the survey area on the west side US 50 via culvert and discharges into a sediment basin with rip-rap and then into a wetland outside of the survey area. Drainage 1 is upstream of Drainage 4 on the east side of US 50.

Drainage 4 contains an average OHWM width of 40-inches and is 9-inches deep. The Drainage 4 culvert is 15-inches tall and 30-inches wide. Downstream of the culvert is a sediment basin about 80-inches wide and 12-inches deep.

The drainage was dry during the time of the delineation. The drainage is 70 feet long within the survey area. OHWM data point D4a was taken at a representative location of the drainage. Data point D4a contains an OHWM width of 40-inches and is 9-inches deep. Data point D4b was the location of the culvert outfall.

This drainage is in identified on the NHD (**Appendix B, Figure 6**). This drainage connects to Meyers Creek (through a wetland) which is tributary to the Upper Truckee River and Lake Tahoe. Due to presence of OHWM indicators and connectivity to Lake Tahoe, a TNW, NCE believes Drainage 4 is a potentially jurisdictional waterway. This drainage is Cowardin classified as Ephemeral, Riverine, and is approximately 0.005 acres in size (**Appendix A, Figure 1**).

4.2.2 Drainage 5

Drainage 5 enters the survey area on the southern side of the project. The drainage discharges into a metal culvert underneath Pioneer Trail. There is a sediment basin on both the upstream and downstream sides of the culvert. On the downstream side of the culvert, the drainage then loses a defined bed and bank so NCE determined the most likely drainage path to a connection point into Drainage 1. The drainage is 432 feet long within the survey area and contains an OHWM width of 32-inches and is 3-inches deep.

Data point D5a was recorded near the southern edge of the survey area at a representative location, the OWHM width is 32-inches and is 3-inches deep. Data point D5b was recorded at the drainage where it flows into a culvert underneath Pioneer Trail, there is a sediment basin present approximately 78-inches long and 106-inches wide. Data point D5c was recorded at the northern side of the Pioneer Trail culvert, there is a sediment basin present approximately 48-inches long and 72-inches wide. The culvert is 17-inches tall and 20-inches wide.

After the culvert data point of D5c, the drainage loses a defined bed and bank. NCE recorded the faint drainage flow path from datapoint D5c to data point D5d. After data point D5d, Drainage 5 turns into a dirt walking path, at this location, NCE recorded the most likely flow path to Drainage 1.

This drainage is in identified on the NHD (**Appendix B, Figure 6**). This drainage ultimately connects to Meyers Creek via Drainage 1 through a culvert underneath US 50 to Drainage 4. Meyers Creek is a tributary to the Upper Truckee River and Lake Tahoe. Due to presence of OHWM indicators and connectivity to Lake Tahoe, a TNW, NCE believes Drainage 5 is a potentially jurisdictional waterway. This drainage is Cowardin classified as Ephemeral, Riverine, and is approximately 0.026 acres in size (**Appendix A, Figure 1**).

4.3 Aquatic Resources Types and Amounts

Below is **Table 2** of the aquatic resources identified within the survey area.

Table 2. Aquatic Resources within the Survey Area

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet)
	Cowardin	Location (lat / long)		
Drainage 1	R6 – Riverine, Ephemeral	38.8602184 120.0118368	0.005	170
Drainage 2	Upland	38.8605640 120.0119485	0.023	597
Drainage 3	Upland	38.8604183 120.0121503	0.013	203
Drainage 4	R6 – Riverine, Ephemeral	38.8602180 120.0124592	0.005	70
Drainage 5	R6 – Riverine, Ephemeral	38.8592861 120.0111598	0.026	432
Total	-	-	0.072	1,472

Table 3 presents the proposed jurisdictional status of the aquatic resources within the survey area.

Table 3. Waters of the U.S Proposed Jurisdictional Status

Water Type	Total Acres	Jurisdictional	Non-Jurisdictional
Drainage 1 - Non-Relatively Permanent Water	0.005	0.005	0
Drainage 2 – Man-Made Stormwater Ditch	0.023	0	0.023
Drainage 3 – Man-Made Stormwater Ditch	0.013	0	0.013
Drainage 4 – Non-Relatively Permanent Water	0.005	0.005	0

Drainage 5 – Non-Relatively Permanent Water	0.026	0.026	0
TOTAL	0.072	0.036	0.036

4.4 Significant Nexus

The U.S Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (USACE 2007) was consulted to aid the preliminary determination whether an area would be subject to USACE jurisdiction under Section 404 of the Clean Water Act. The significant nexus test, outlined in a memorandum jointly authored by the U.S. Environmental Protection Agency and USACE, was applied to each potentially jurisdictional habitat type (Grumbles and Woodley 2008). To facilitate potentially jurisdictional determination consistent with the guidance, each water body delineated was evaluated as a TNW, Relatively Permanent Water (RPW), or non-RPW, based on the following definitions:

- TNWs include all waters subject to the ebb and flow the tide, or waters that are presently used, have been used in the past, or may be used in the future to transport interstate or foreign commerce, and all waters that are navigable in fact under federal law for any purpose.

- RPWs are waters that flow continuously at least seasonally (typically at least 3 months of the year) and are not TNWs.

- Non-RPWs are waters that do not have continuous flow at least seasonally.

The following types of water bodies are subject to Clean Water Act jurisdiction:

- All TNWs and adjacent wetlands;

- Relatively permanent tributaries of TNWs and wetlands with a continuous surface connection to such tributaries; and

- Non-relatively permanent tributaries of TNWs and adjacent wetlands if they have a significant nexus to a TNW. Non-RPWs and adjacent wetlands are determined to have a significant nexus to a TNW if they significantly affect the chemical, physical, or biological integrity of a downstream TNW.

NCE's professional opinion is that Drainages 1, 4, and 5 have a continuous surface connection to Meyers Creek and have potential to affect the chemical, physical, and/or biological integrity of Meyers Creek. Meyers Creek is a tributary to the Upper Truckee River, thus resulting in a significant nexus to Lake Tahoe.

NCE's professional opinion is that Drainages 2 and 3 are non-federally jurisdictional because each one is a man-made stormwater feature that was constructed in an upland to convey, treat, and/or store stormwater.

Appendix F contains the Aquatic Resource Excel Sheet and the GIS data.

The above findings should be considered preliminary until the USACE makes a final approved jurisdictional determination in coordination with the United States Environmental Protection Agency. Areas deemed jurisdictional will then be subject to the regulatory requirements of the federal Clean Water Act.

5.0 REFERENCES

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United States Department of Agriculture. NRCS. 2019b. National hydric soils for the project survey area. http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

United States Geological Survey. National Hydrography Data. https://nhd.usgs.gov/tools.html#MDTool

United States Geological Survey. Echo Lake, California 7.5-minute series topographic quadrangle. U.S. Department of the Interior.

Appendix A

Aquatic Resource Delineation Map



Water Type	Total Acres
Drainage 1 - Non-Relatively Permanent Water	0.005
Drainage 2 – Man-Made Stormwater Ditch	0.023
Drainage 3 – Man-Made Stormwater Ditch	0.013
Drainage 4 – Non-Relatively Permanent Water	0.005
Drainage 5 – Non-Relatively Permanent Water	0.026
TOTAL	0.072

Legend

- Survey Area
- Data Point
- Drainage 1 (D1)
- Drainage 2 (D2)
- Drainage 3 (D3)
- Drainage 4 (D4)
- Drainage 5 (D5)

Pioneer Trail/US 50 Intersection Safety Improvement Project

Proposed Delineation Map

N

1 in. = 125 ft.

0 125 ft.

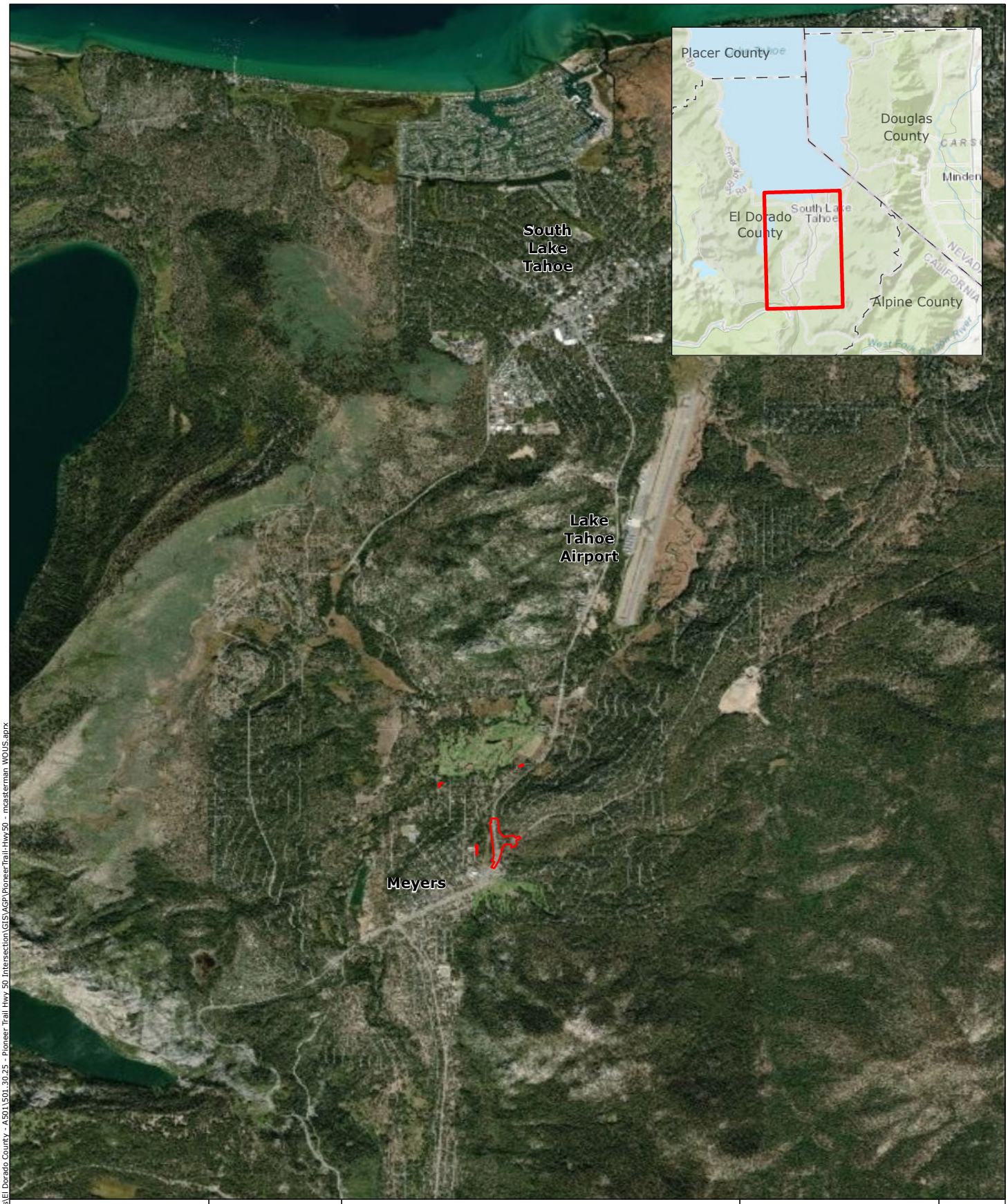
FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Delineation conducted by Debra Lemke, PWS and Sarah Bryan	501.30.25	sanderson	3/24/2020	3/31/2020	dlemke

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\Pioneer Trail Hwy 50 - sanderson CEQA.aprx

Appendix B

SUPPORTING MAPS



Legend

Survey Area

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Vicinity Map

N

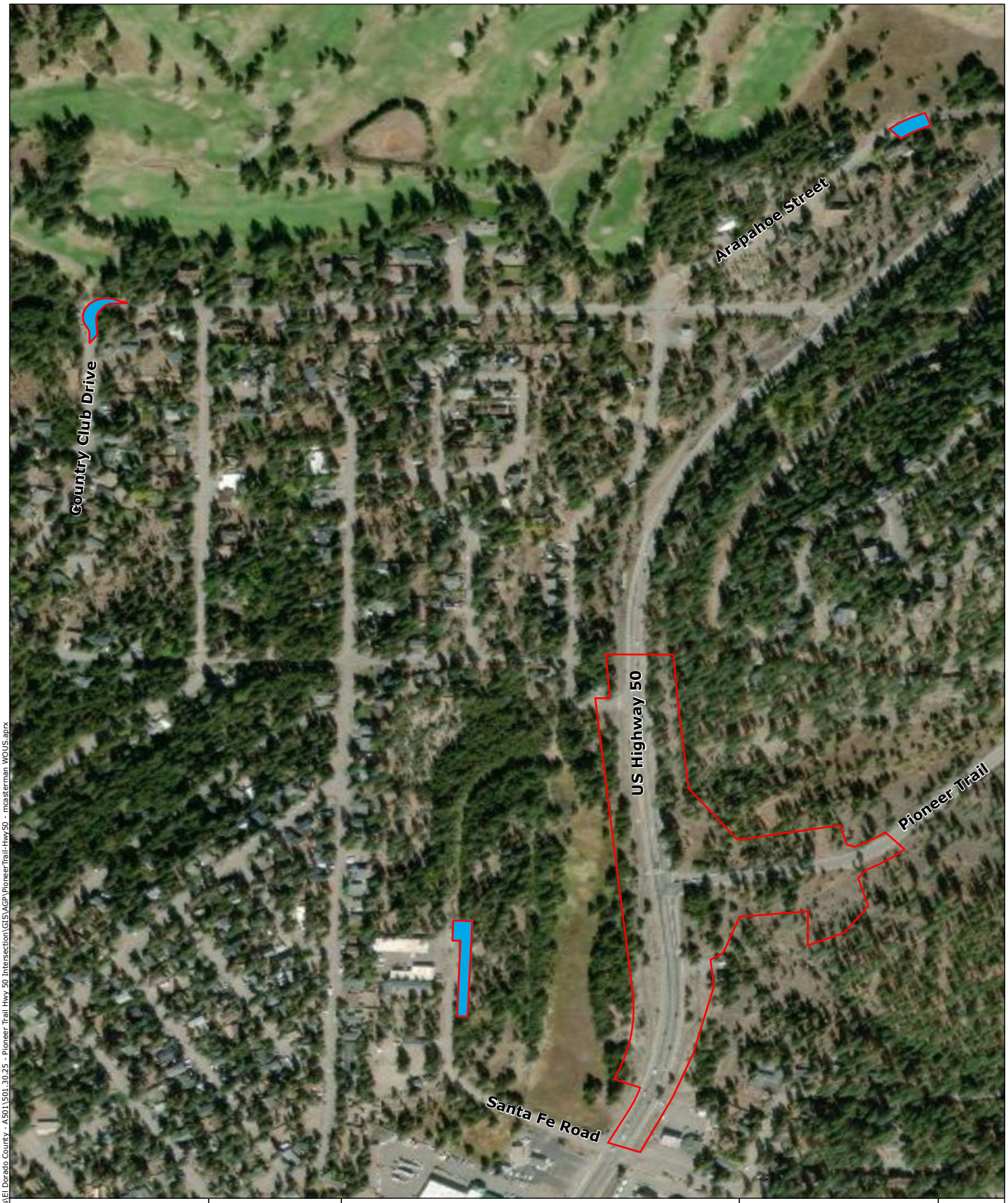
1 in. = 5,000 ft.

0 2,500 5,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019	501.30.25	sbryan	2/14/2020	mcasterman	-

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Legend

- Survey Area
- Proposed Staging Area

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Survey Area

N

1 in. = 500 ft.

0 250 500 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019	501.30.25	sbryan	2/14/2020	mcasterman	-

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USGS 7.5" Quad: Echo Lake
TRS: T.12N, R.18E, Sec. 29
TRS: T.12N, R.18E, Sec. 21

Legend
- Survey Area
- Quadrangle Boundary

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Topographic Quadrangle Map

N

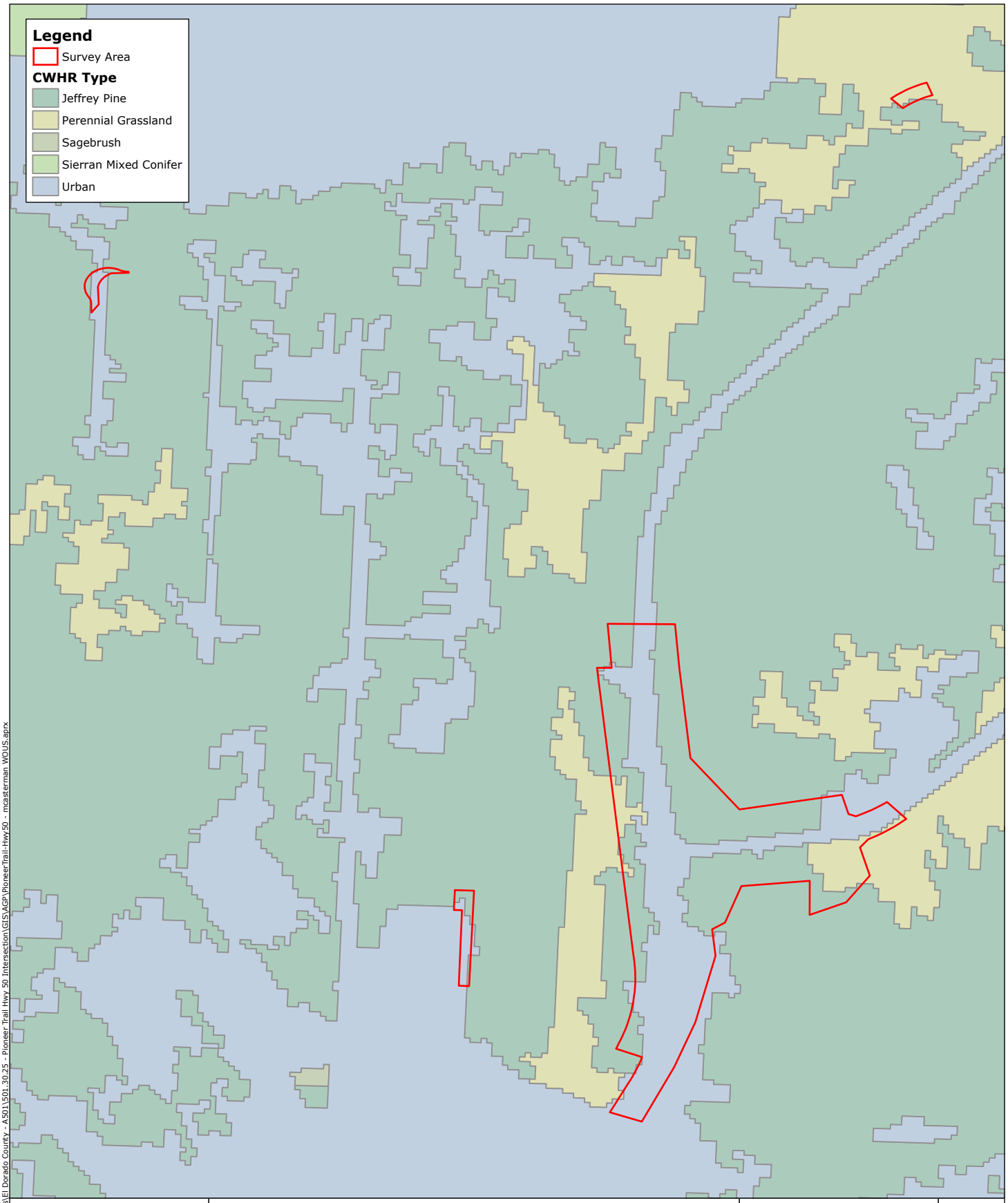
1 in. = 1,500 ft.

0 750 1,500 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
USA Topographic Data; NCE 2019	501.30.25	sanderson	2/14/20	3/31/2020	drios

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Pioneer Trail/US 50 Intersection Safety Improvement Project

CWHR Type (Vegetation Communities)

N

1 in. = 500 ft.

0 250 500 ft.

FIGURE 4

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019; California Wildlife Habitat Relationships Dataset	501.30.25	sbryan	9/18/2019	-	-

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Pioneer Trail/US 50 Intersection Safety Improvement Project

National Wetland Inventory (NWI) Map

N

1 in. = 500 ft.

0 250 500 ft.

FIGURE 5

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019; NWI	501.30.25	sbryan	2/14/2020	mcasterman	-

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - mcasterman WOUS.aprx



Pioneer Trail/US 50 Intersection Safety Improvement Project

National Hydrography Dataset (NHD)

N

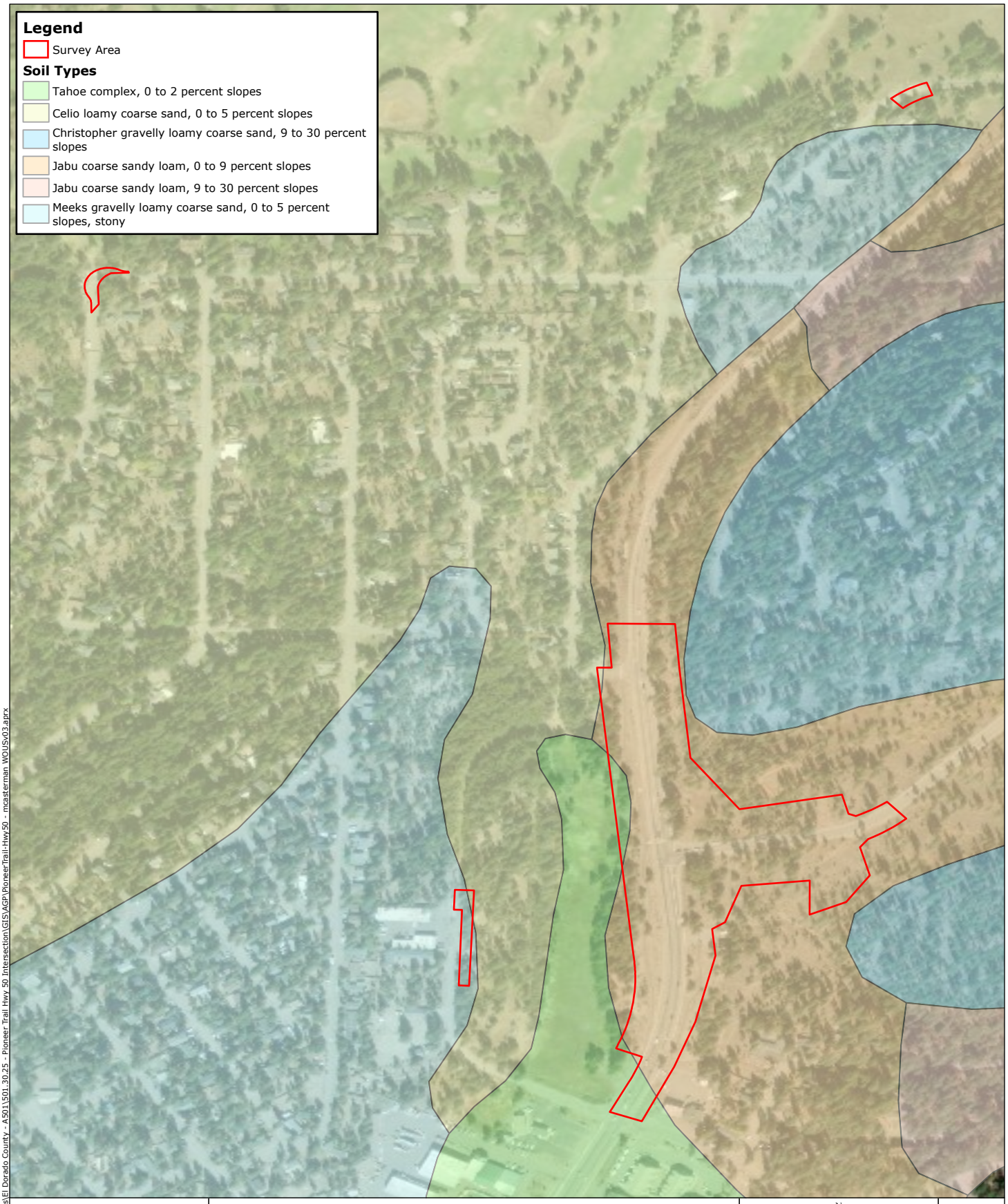
1 in. = 500 ft.

0 250 500 ft.

FIGURE 6

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019; NHD	501.30.25	mcasterman	2/14/2020	--	-

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Pioneer Trail/US 50 Intersection Safety Improvement Project

NRCS Soils Map

N

1 in. = 500 ft.

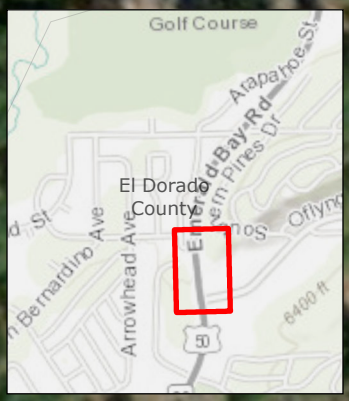
0 250 500 ft.

FIGURE 7

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019; NRCS Soils	501.30.25	sbryan	2/14/2020	3/31/2020	drios

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Location	Data Sheet Point	Photo-graph Point (PP)	Coordinates (Latitude and Longitude)	Photo Direction/Description
Drainage 1	D1 In	PP 1	38.8602382 -120.0121205	Looking downstream (SW); see Appendix C
		PP 2		Looking upstream (NE) out of survey area; see Appendix C
	D1	PP 3	38.8602189 -120.0118399	Looking at culvert (SW) out of survey area; see Appendix C
		PP 4		Standing on the culvert looking upstream (NE) at drainage; see Appendix C
Drainage 2	D2A	PP 5	38.8619279 -120.0121904	Looking upstream (E); see Appendix C
		PP 6		Looking downstream (W); see Appendix C
	D2B	PP 11	38.8605849 -120.0119443	Looking downstream (SW); see Appendix C
		PP 12		Looking upstream (NE); see Appendix C
Drainage 3	D3	PP 7	38.8607345 -120.0121225	Looking downstream (N); see Appendix C
		PP 8		Looking upstream (SW); see Appendix C
	D3A	PP 9	38.8604143 -120.0121608	Looking downstream (N); see Appendix C
		PP 10		Looking upstream (SW); see Appendix C
Drainage 4	D4A	PP 13	38.8602523 -120.0126828	Looking upstream (N) at H50 culvert ; see Appendix C
		PP 14		Looking downstream (S) at wetland; see Appendix C
	D4B	PP 15	38.8602143 -120.0124669	Looking upstream (NE) at culvert; see Appendix C
		PP 16		Looking downstream (SW); see Appendix C
Drainage 5	D5A	PP 17	38.8592936 -120.0111593	Looking upstream (E); see Appendix C
		PP 18		Looking downstream (W); see Appendix C
	D5B	PP 19	38.8595993 -120.0112476	Looking upstream (E); see Appendix C
		PP 20		Looking at culvert (W); see Appendix C



5-6
D2A
7-8
D3
11-12
D2B
D3A
9-10
13-14
D4A
15-16
D4B
D1
1-2
D1 In
3-4
19-20
D5B
17-18
D5A

Legend
- Survey Area
- Photograph Directions
- Photo Point

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Ground Level Photograph Locations and Directions

N

1 in. = 120 ft.

0 60 120 ft.

FIGURE 8

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019	501.30.25	sbryan	10/16/2019	mcasterman	-

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - mcasterman WOUSv03.aprx



Legend

- Survey Area

Parcel Owner

- Caltrans ROW
- A & S Architectural LLC
- Logan Jeffrey & Nita
- State of California
- California Tahoe Conservancy
- US Forest Service

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Land Ownership Map

N

1 in. = 250 ft.

0 125 250 ft.

FIGURE 9

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2019; El Dorado County	501.30.25	mcasterman	2/18/2020	--	-

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Appendix C

Representative Photographs



Photograph Point (PP) 1: Drainage 1 In, D1 In, looking downstream (SW).



PP 2: Drainage 1 In, D1 In, looking upstream (NE), out of the survey area.



PP 3: Drainage 1, D1, looking at culvert (SW), out of survey area.



PP 4: Drainage 1, D1, standing on the culvert looking upstream (NE) at drainage.



PP 5: Drainage 2, D2A, looking upstream (E).



PP 6: Drainage 2, D2A, looking downstream (W).



PP 7: Drainage 3, D3, looking downstream (N).



PP 8: Drainage 3, D3, looking upstream (SW).



PP 9: Drainage 3, D3A, looking downstream (N).



PP 10: Drainage 3, D3A, looking upstream (SW).



PP 11: Drainage 2, D2B, looking downstream (SW).



PP 12: Drainage 2, D2B, looking upstream (NE).



PP 13: Drainage 4, D4A, looking upstream (N) at US 50 culvert.



PP 14: Drainage 4, D4A, looking downstream (S) at wetland (not in Survey Area).



PP 15: Drainage 4, D4B, looking upstream (NE) at culvert.



PP 16: Drainage 4, D4B, looking downstream (SW).



PP 17: Drainage 5, D5A, looking upstream (E).



PP 18: Drainage 5, D5A, looking downstream (W).



PP 19: Drainage 5, D5B, looking upstream (E).



PP 20: Drainage 5, D5B, looking downstream (W).

Appendix D

Plant List

Plant Species Identified Within the Survey Area August 2019

Scientific Name	Common Name	Native: Y, N	Wetland Indicator Status*
Abies concolor	White fir	Y	UPL
Achillea millefolium	Yarrow	Y	FACU
Acmispon americanus	American bird's foot trefoil	Y	FACU
Agrostis gigantea	Creeping bentgrass	N	FAC
Ambrosia artemisiifolia	Annual ragweed	N	FACU
Arctostaphylos patula	Green leaf manzanita	Y	NL
Arnica chamissonis	Chamisso arnica	Y	FACW
Artemesia tridentata	Sagebrush	Y	FACU
Bromus tectorum	Cheatgrass	N	NL
Ceanothus leucodermis	Whitethorn	Y	NL
Ceanothus prostratus	Mahala mats	Y	NL
Dactylis glomerata	Orchard grass	N	FACU
Descurainia sophia	Flixweed	N	NL
Delphinium glaucum	Sierra larkspur	Y	FACW
Draba verna	Spring draba	N	NL
Elymus elymoides	Squirrel tail grass	Y	FACU
Elymus glaucus	Blue wildrye	Y	FACU
Elymus repens	Creeping wildrye	N	FAC
Epilobium brachycarpum	Annual fireweed	Y	NL
Ericameria nauseosa	Rubber rabbitbrush	Y	NL
Eriogonum umbellatum var. *polyanthum*	Sulfur buckwheat	Y	NL
Erodium moschatum	Whitestem filaree	N	NL
Festuca idahoensis	Blue fescue	Y	NL
Festuca rubra	Red fescue	Y	NL
Fragaria virginiana	Mountain strawberry	Y	FACU
Galium bifolium	Twinleaf bedstraw	Y	NL
Grindelia squarrosa	Curlycup gumweed	N	FACU
Hordeum brachyantherum	Meadow barley	Y	FACW
Ipomopsis aggregata	Scarlet gilia	Y	NL
Juncus sp.	Rush	Y	OBL, FACW, FAC, and FACU (due to unknown species)
Lactuca serriola	Prickly lettuce	N	FACU
Lotus corniculatus	Bird's foot trefoil	N	FAC

Lonicera conjugialis	Purpleflower honeysuckle	Y	FAC
Lupinus breweri	Brewer's lupine	Y	NL
Madia glomerata	Mountain tarweed	Y	FACU
Melilotus albus	White sweetclover	N	NL
Navarretia intertexta	Interwoven navarretia	Y	FACW
Phacelia hastata	Mountain phacelia	Y	NL
Pinus contorta ssp. *murrayana*	Lodgepole pine	Y	FAC
Pinus jeffreyi	Jeffrey pine	Y	NL
Poa pratensis	Kentucky bluegrass	N	FAC
Potentilla recta	Sulpher cinquefoil	N	NL
Purshia tridentata	Antelope bitterbrush	Y	NL
Ribes cereum	Wax currant	Y	NL
Rumex cripsus	Curly dock	N	FAC
Rosa woodsii	Wood's rose	Y	FACU
Soldago elongata	West coast Canada goldenrod	Y	NL
Stipa occidentalis	Western needlegrass	Y	NL
Symphoricarpos mollis	Snowberry	Y	FACU
Symphyotrichum ascendens	Western aster	Y	FACU
Tragopogon dubius	Goat's beard	N	NL
Verbascum thapsus	Wooly mullein	N	FACU
Wyethia mollis	Wooly mule's ears	Y	NL

* Wetland Indicator Status (WIS):

OBL = Obligate Wetland; occurs in aquatic resources > 99% of time
FACW = Facultative Wetland; occurs in aquatic resources 67-99% of time
FAC = Facultative; occurs in aquatic resources 34-66% of time
FACU = Facultative Upland; occurs in aquatic resources 1-33% of time
UPL = Obligate Upland; occurs in uplands > 99% of time
NL = Not Listed

Appendix E

Ordinary High Water Mark Datasheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Pioneer Trail
Project Number: 501.20.26
Stream: Drainage 1
Investigator(s): Debra Lemke & Sarah Bryan

Date: 9-17-19 **Time:** 9:15
Town: South Lake Tahoe **State:** CA
Photo begin file#: 1 **Photo end file#:** 4

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: South Lake Tahoe, CA

Projection: State Plane CA **Datum:** NAD 1983
Coordinates: 38.86021189, 120.01183688

Potential anthropogenic influences on the channel system:
Pioneer Trail Road + Highway 50 adjacent. Power lines above. upstream is an erosion control project. Walking path is under the power lines, path crosses the drainage.

Brief site description:
Drainage is dry. Area consists of grasses, conifers, + 1 large willow adjacent to the drainage.

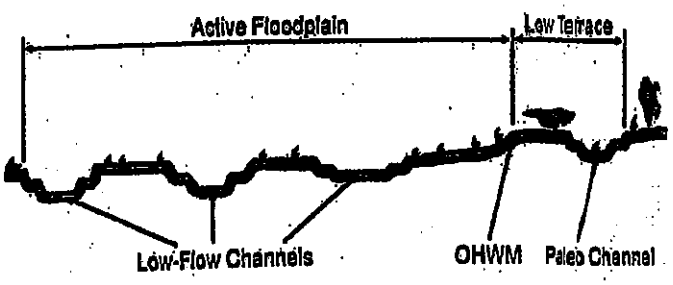
Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [X] Existing delineation(s) for site - upstream
- [X] Global positioning system (GPS)
- [X] Other studies

NA
NO

- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

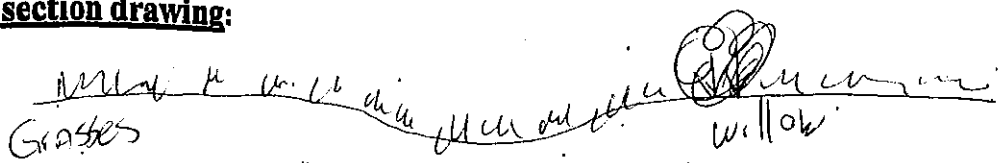


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [X] GPS
   - [ ] Other:

Project ID: 601.20.25 **Cross section ID:** **Date:** 9-17-19 **Time:** 9:15

Cross section drawing:



1.4" OHWM
4" depth

OHWM

GPS point: Drainage 1 starts ^ within project survey area downstream of man-made erosion control features. Ends at culvert 1. May then continue as 03.

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Photo 1 looking downstream - SW
" 2 " upstream (out of survey area) - NE
GPS'd the drainge to the culvert = Culvert 1 IN

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: Culvert = 19" tall x 30" wide

Characteristics of the floodplain unit: photo 3 looking At culvert - looking SW

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: photo 4 looking At drainge - upstream NE. % Herb: ____%

Photo 4 is standing on culvert.

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Pioneer Trail
Project Number: 501.30.25
Stream: Drainage 2
Investigator(s): Debra Lemke & Sarah Bryan

Date: 9-17-19 **Time:** 9:30
Town: S. Lake Tahoe **State:** CA
Photo begin file#: 5+6 **Photo end file#:** 11+12

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: South Lake Tahoe, CA

Projection: State Plane CA **Datum:** NAD 1983
Coordinates: 38.8605640, 120.01192485

Potential anthropogenic influences on the channel system:

Highway 50 is adjacent.

Brief site description:

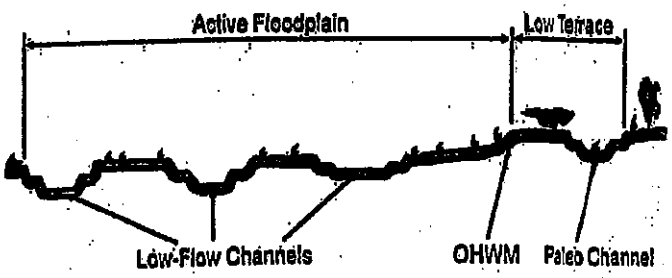
Drainage is dry, parallels Highway 50, appears to flow with Lake Tahoe. DA starts North and then turns West.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

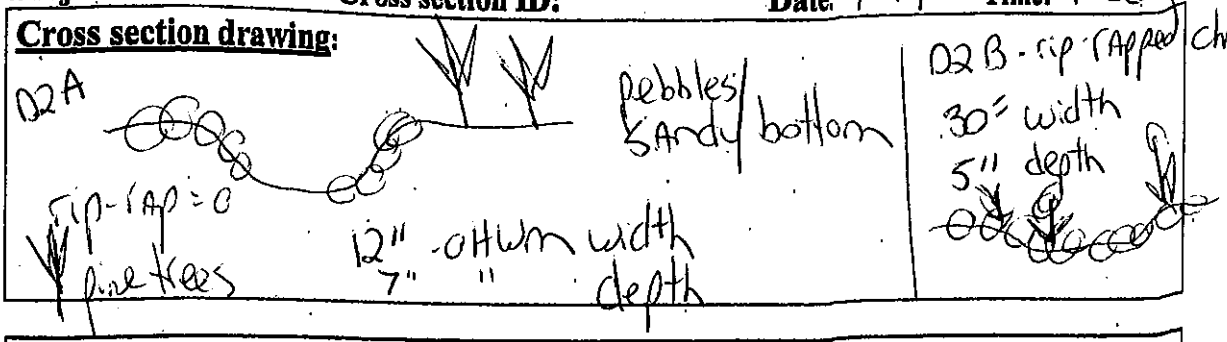


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: 80.20.25 **Cross section ID:** **Date:** 9-17 **Time:** 9:30

Cross section drawing:



OHWM

GPS point: 02A + 02b is the Northern survey AREA bandry

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: rip-rapped lined channel
- ☐ Other: _____

Comments:

02A is the western survey area edge.
Photo 5 is looking E (upstream?)
photo 6 " " W (downstream?)

02b - photo 11 - downstream SW looking out of survey area NE
photo 12 - upstream

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Pioneer Trail
Project Number: 50120.25
Stream: Drainage 3
Investigator(s): Debra Lemke & Sarah Bygen

Date: 9-17-19 **Time:** 9:45
Town: South Lake Tahoe **State:** CA
Photo begin file#: 7 **Photo end file#:** 10

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: South Lake Tahoe, CA

Projection: State Plane CA **Datum:** NAD 1983
Coordinates: 38.860483, 120.012503

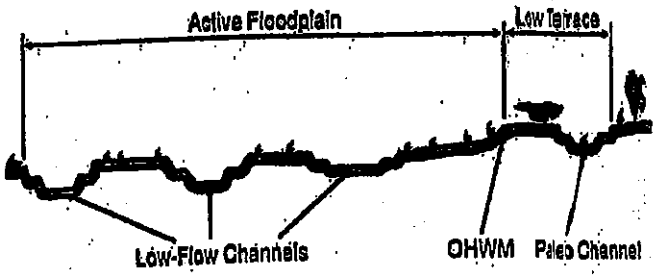
Potential anthropogenic influences on the channel system:
Pioneer Trail Road and Highway 50 are adjacent.

Brief site description:
D3 parallels 50 - most likely starts at Culvert 1. Discharges into D2. dry drainage. pine trees.

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [X] Existing delineation(s) for site - upstream
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

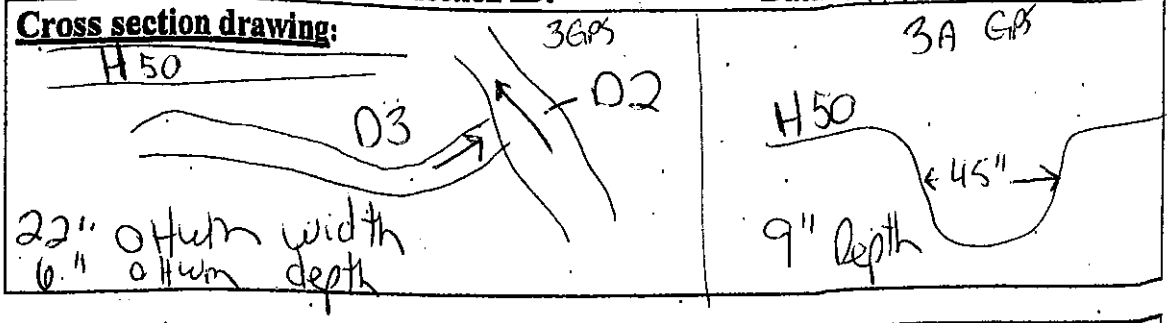


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [X] GPS
   - [ ] Other:

Project ID: 601.20.25 **Cross section ID:** **Date:** 9-17-19 **Time:** 9:45

Cross section drawing:



OHWM

GPS point: Drainage 3 (location of connection to D2)
Drainage 3A (center of drainage)

45" OHWM width
9" OHWM depth

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Photo 7 - looking downstream NW } D3 GPS point
Photo 8 - looking upstream South West

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Photo 9 - looking downstream } D3A
Photo 10 " upstream

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Pioneer Trail
Project Number: 50+30.25
Stream: Drainage
Investigator(s): Rebra Lemke & Sarah Bryan
Date: 9-17-19 **Time:** 10:15
Town: South Lake Tahoe **State:** CA
Photo begin file#: 13 **Photo end file#:** 16

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: South Lake Tahoe, CA

Projection: State Plane CA **Datum:** NAD 1983
Coordinates: 38.8602180, 120.0129592

Potential anthropogenic influences on the channel system:
Highway 50, concrete walking path, culvert with A sediment Basin

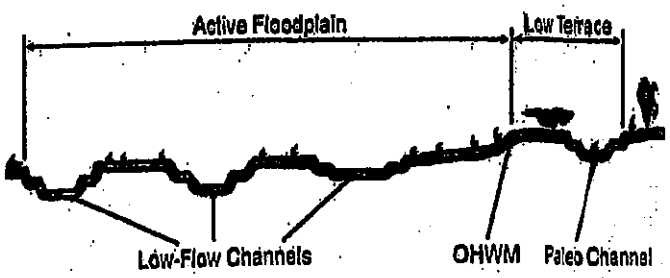
Brief site description:
dry ~~dry~~ drainage, mature trees, grasses, ~~flow~~ downstream of drainage is A wetland. Drainage Appears to be excavated to discharge into wetland.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site - upstream
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

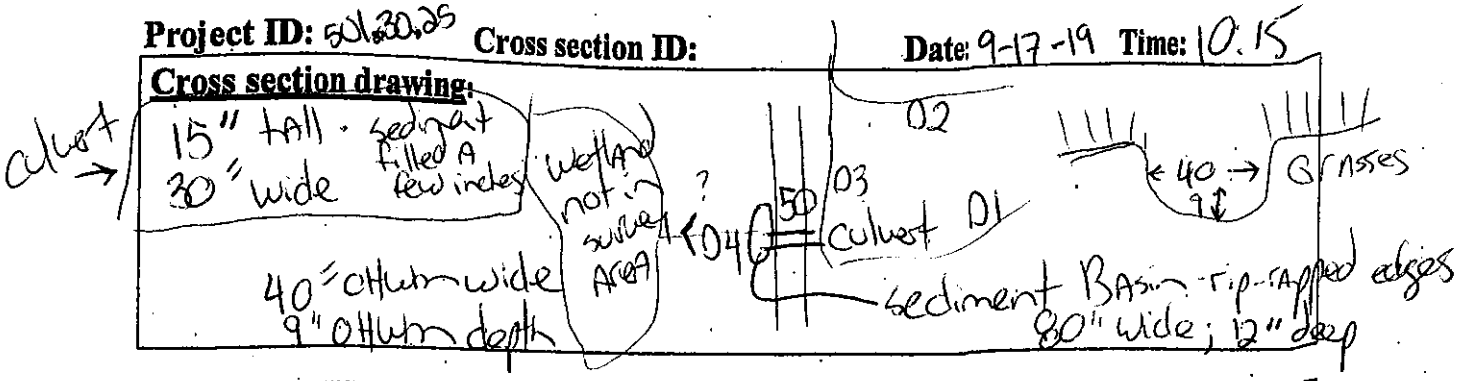


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: 501.30.25 **Cross section ID:** **Date:** 9-17-19 **Time:** 10.15

Cross section drawing:



OHWM

GPS point: Drainage 4A (southern survey Area edge)
Drainage 4B (at culvert location on south side of H50)

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Drainage does not contain grasses.

Comments:
Drainage (man-made feature?) to A wetland.
Grasses, conifers
photo 13 looking N at H50 culvert - upstream? NE
photo 14 " 03 At wetland - downstream SW

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: photo 15 - looking at culvert NE
Photo 16 - looking downstream SW

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Pioneer Trail
Project Number: 501.30.25
Stream: OXANAR5
Investigator(s): Debra Lemke & Sarah Boyum

Date: 9-17-19 **Time:** 11:00
Town: South Lake Tahoe **State:** CA
Photo begin file#: 17 **Photo end file#:** 20

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: South Lake Tahoe, CA

Projection: State Plane CA **Datum:** NAD1983
Coordinates: 38.8592861, 120.0111598

Potential anthropogenic influences on the channel system:
Highway 50 & Pioneer Trail, concrete walking path.

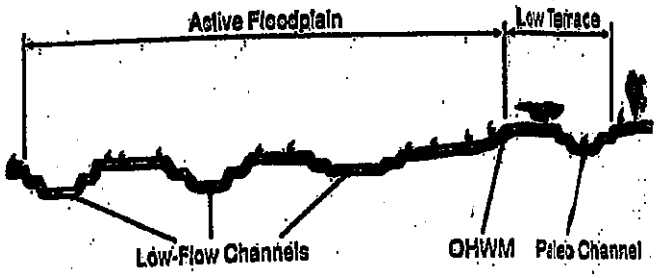
Brief site description:
Dry drainage - mature trees & vegetation.
Drainage discharges into a metal culvert under Pioneer Trail

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site - upstream
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

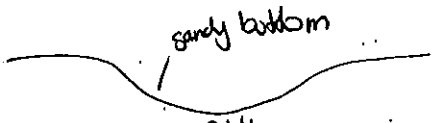


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: 8013025 **Cross section ID:** **Date:** 9-17-19 **Time:** 11:00

Cross section drawing:



32" OHWM Width
3" OHWM Depth

- Metal culvert - some sediment in culvert, E side of Pioneer Trail
17" tall 20" wide w/ sediment basin Rip-Rap
106" wide + 78" long sediment basin to bottom measurements

OHWM

GPS point: Drainage 5A (on the Eastern survey area edge) Drainage 5B (end of drainage at the culvert)

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: Photo 17 - Looking upstream - E → D5A GPS
Photo 18 - Looking downstream - W
Photo 19 Looking upstream - E → D5B GPS
Photo 20 Looking at culvert - W

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____ Drainage D5C - West side of Pioneer Trail culvert
Culvert 19" tall, 20" wide
4' x 6' - sediment Basin

Characteristics of the floodplain unit:

Average sediment texture: _____
Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: D5D GPS - end of drainage - loses defined bed & bank after culvert D5C

D5E GPS - connection to Drainage 1; loses defined bed & bank, drainage 5 enters into a dirt path

Appendix F

Aquatic Resource Spreadsheet and GIS Data

From: Thomason, Jennifer C CIV USARMY CESPK (USA)
To: Debra Lemke
Cc: Donaldo Palaroan; Angela Hueftle; Sarah Anderson
Subject: RE: USACE Project Number SPK-2020-00324, Pioneer Trail US 50 Safety Improvement Project
Date: Friday, December 11, 2020 7:28:41 AM

Hi Debra,
Your assessment below is correct.

Thank you,

Jennifer C. Thomason
Senior Project Manager
Nevada-Utah Regulatory Section
300 Booth Street, Room 3050
Reno, Nevada 89509

Ph: 775-784-5304
Cell: 775-525-0384- Primary number during COVID-19 Response

In response to COVID-19, Regulatory Division staff are teleworking from home or other approved location. We will do our best to administer the Regulatory Program in an effective and efficient manner. Priority will be given to health and safety activities and essential infrastructure. Action on your permit application or other request may be delayed during this emergency. We appreciate your patience over the next several weeks.

Let us know how we're doing. Please complete the survey at:
http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

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From: Debra Lemke <DLemke@ncenet.com>
Sent: Thursday, December 10, 2020 2:22 PM
To: Thomason, Jennifer C CIV USARMY CESPK (USA) <Jennifer.C.Thomason@usace.army.mil>
Cc: Donaldo Palaroan <donaldo.palaroan@edcgov.us>; Angela Hueftle <AHueftle@ncenet.com>; Sarah Anderson <sanderson@ncenet.com>; Debra Lemke <DLemke@ncenet.com>
Subject: [Non-DoD Source] USACE Project Number SPK-2020-00324, Pioneer Trail US 50 Safety Improvement Project

Hi Jennifer,

I hope you are doing well. This email is in regards to USACE project number SPK-2020-00324, Pioneer Trail US 50 Safety Improvement project.

An Aquatic Resources Delineation was conducted and a USACE Jurisdictional Determination (JD) was received on June 11, 2020. For your ease, the JD is attached. Based on the JD, approximately 0.036 acres/672 linear feet of ephemeral aquatic resources are federally jurisdictional. Under the current Navigable Waters Protection Rule, would these 0.036 acres/672 linear feet of ephemeral aquatic

resources no longer be federally jurisdictional? And due to that, the project would not require a USACE Section 404 permit(s) for proposed impacts to the ephemeral aquatic resources?

We understand that these aquatic resources are waters of the state of CA, and the appropriate permits from the state agencies would be secured prior to any temporary and/or permanent impacts to aquatic resources.

Please let me know of any questions, and I look forward to your response.

Thank you very much,
Debra

Debra Lemke, PWS, CPESC
Senior Scientist

p (775) 329-4955 **c** (775) 843-5603
f (775) 329-5098 **e** dlemke@ncenet.com

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APPENDIX E

CULTURAL RESOURCE REPORT

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Mile(s)	EA	E-FIS Project Number
03	ED	50	71.48	2H610	0317000163

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

The studies for this undertakingwere carried out in a manner consistent with Caltrans' regulatory responsibilitiesunder Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to 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* (Section 106 PA).

Project Description:

The County of El Dorado (County), in cooperation with the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration (FHWA), is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project (Project). The Project is located in eastern El Dorado County, California, in the Tahoe Basin (Figure 1). Specifically, the Project is located in the community of Meyers in South Lake Tahoe in the central portion of Section 29 of Township 12 North and Range 18 East (Mt. Diablo Meridian) and depicted on the USGS Echo Lake 7.5-minute quadrangle map (Figure 2). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The Project has been designed to implement a 'complete streets' strategy by proposing to install lighting, signage, landscaping, and more visible crosswalks to encourage alternate modes of transportation. The scope of work for the proposed Project includes but is not limited to lighting (pedestrian and/or streetlights), utilities, roadbed grading, sidewalks, bicycle paths, restriping, and other improvements.

The roundabout has a 200-foot diameter (to the southbound through lane). Beyond this radius is half the through right-turn lane from northbound US-50 onto Pioneer Trail. US 50 will be removed and replaced to approximately 528 feet north and 469 feet south of the present intersection. Pioneer Trail will be removed and replaced to approximately 516 feet east of the present intersection. Additionally, a proposed eight-foot-wide multi-use (sidewalk and bike path) concrete path will include 376 feet along the southeast corner, 358 feet along the northeast corner, and 457 feet along the west side of US-50. Signs will be limited to a height like those found on collector streets in cities. No overhead signs are anticipated for this Project.

There will be approximately eleven streetlights (Type 30 Luminaire per Caltrans Standard Plan ES-6E) added in the Project APE located adjacent to the existing or the proposed multi-use path. Existing storm drain facilities (SD) will either be removed or modified with new SD facilities associated with the roundabout. Existing utilities to be removed include all the signal poles, pedestrian crossing signals, and the control cabinet for existing signals. Anticipated modification of existing utilities will include relocation of the telephone pole and remaining cabinets at the

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northeast corner further northeast. The transformer and conduit/wiring will be upgraded to accommodate additional lighting needs. Proposed utilities include new electrical conduit/wiring for the luminaires most of which will be in the roadway or adjacent to proposed sidewalk. One run of conduit will extend east past the sidewalk along eastbound Pioneer Trail and adjacent to an existing telecommunications trench.

Please refer to the attached ASR, Chapter 1.0 for the full project description. Hereafter, the ASR is referred to as Attachment 1. Figures referenced below are located in Appendix A of Attachment 1

2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with Erick Wulf, Caltrans PQS: PI-Prehistoric Archaeology, and Martin Clark, P.E., Program/Project Manager, in August 3, 2020. The APE map is located in Attachment 1, Appendix A, Figure 3.

The APE covers a total of 13.9 acres bordered by the North Upper Truckee Road on the west, Washoe Meadows State Park to the north, US 50/State Route 89 on the south, and Apache Avenue to the east. This includes 1.3 miles of US 50/state route 89 highway system (at postmark 71.48). Three potential staging areas are being considered for this Project (Figure 4 and Figure 5). The first potential 0.3-acre staging area would be located along the shoulder and at the north end of Santa Fe Road approximately 0.3 miles southwest of the intersection of US 50 and Pioneer Trail. The second 0.13-acre staging area would be located at the end of Arapahoe Street approximately 0.5 miles north of the intersection of US 50 and Pioneer Trail. The third 0.14-acre staging area would be at the pullout at the corner of Bakersfield Street and Country Club Drive approximately 0.5 miles northwest of the intersection of US 50 and Pioneer Trail.

The APE was established to include all areas of potential impacts and includes the full extent of the horizontal and vertical limits from construction activities described above and the use of temporary staging areas as determined through discussion with Caltrans, the County, GHD, and NCE design and construction engineers. The APE includes all potential ground disturbance including but not limited to excavation of earth with heavy equipment, stockpiling of material, heavy equipment driving over the ground, vegetation removal, staging, and access routes along US 50 within Caltrans right of way of, Pioneer Trail, and staging areas. The vertical APE limits include seven (7) feet maximum depth for lighting; nine (9) feet maximum depth for SD facilities; 13 feet maximum depth for utility pole removal; six (6) feet maximum depth for modifications to existing utilities; six (6) feet maximum depth for removal of the existing telephone pole; 2.5 feet maximum depth for electrical conduit for a luminaire; four (4) feet maximum depth for installing the new roadbed; 14.5 inches maximum depth for grinding the existing roadway; 3.5 feet maximum depth for installing the new multi-use concrete path; four (4) feet maximum depth for installing the islands; and three (3) feet maximum depth for installing new roadway signs.

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3. CONSULTING PARTIES / PUBLIC PARTICIPATION

☒ Local Government

- County of El Dorado Department of Transportation

☒ Native American Heritage Commission (NAHC)

- Please refer to Chapter 3.0 and Appendix D of Attachment 1 for all Native American correspondence
- Letter sent to the NAHC on 8/27/2019
- Response received on 9/19/2019
- Negative SLF results

☒ Native American Tribes, Groups and Individuals

- Please refer to Chapter 3 and Appendix D of Attachment 1 for all Native American correspondence
- Letter sent to Darrel Cruz of the Washoe Tribe of Nevada and California identified by the NAHC on 3/9/2020
- On 3/9/2020 and 4/13/2020 the County attempted to follow-up with Mr. Cruz.
- On 5/5/2020 the County and Mr. Cruz consulted via phone and email. Mr. Cruz indicated the Tribe does not have immediate knowledge of cultural resources with the APE that may be affected by the Project. However, in the event inadvertent cultural resources are discovered as a result of Project activities, Mr. Cruz requested the Washoe Tribe be informed of findings.

☒ Local Historical Society / Historic Preservation Group

- The Lake Tahoe Historical Society (LTHS) was invited via email to consult on the Project on 3/13/2020 and 4/13/2020. No response has been received to date. Copies of the emails are in Appendix E of Attachment 1.

☒ Public Information Meetings

- Public meeting notification is located within Attachment 1, Appendix F
- Public Meeting: July 21, 2020, at the California Conservation Corps Building in Meyers

4. SUMMARY OF IDENTIFICATION EFFORTS

☒ National Register of Historic Places (NRHP)

☒ National Historic Landmark (NHL)

☒ California Register of Historical Resources (CRHR)

☒ California Historic Landmark (CHL)

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☒ California Historical Resources Information System (CHRIS)

☒ California Points of Historical Interest

☒ Other Sources consulted:

- 1866 GLO plat map for Township 12 North, Range 18 East, 1889, 1891, 1895, and 1896 Pyramid Lake, California USGS 30-minute topographic maps, 1947, 1948, and 1956 Sacramento, California USGS 1:250,000 topographic maps, 1955 (1971 ed.) Echo Lake, California USGS 7.5-minute topographic map, NETR and Google Earth historic aerial imagery dating between 1940 and 1987
- NAHC Sacred Lands File (SLF)

☒ Results:

- Please refer to Chapter 2.0 and Appendix C of Attachment 1 for all information on archival research results.
- 26 archaeological and architectural inventories have been conducted within one quarter mile of the APE. The majority of inventories were US Forest Service Heritage Resource Inventory Reports and most were conducted 10 to 20 years prior to the Project. Only five were completed within the last decade. Review of these previous reports indicates portions of the APE and surrounding area have been intermittently surveyed between 1988 and 2017 in advance of erosion control, utility, timber sale, or shared-use path projects along the US 50 ROW (Hardy 1988; Lindström 1991; Brown 1995; Lindström and Hall 1998; Moran 1999; Bowen 2008; Drew et al. 2015; Lindström 2016, 2017). It is highly probable that maintenance of the US 50 and neighborhood ROWs, installation of advanced utilities, and erosion control ditches throughout the APE have substantially disturbed and modified the landscape. It does not appear any archaeological excavations took place previously near the APE.
- 12 archaeological resources have been recorded within one quarter mile of the APE. Three previously recorded historic sites and one group of isolates were located within the APE. The majority of recorded cultural resources were historic sites recorded over 10 years ago.
- P-09-003528 – Historic Isolates Along US 50: Previously recorded by Lindström (1991), site P-09-003528 contained isolated historic glass fragments and metal containers located in various locations along Highways 50 and 89 in Meyers. This included a lead-soldered seal rectangular fuel can and one piece of amethyst glass at the intersection of US 50 and Pioneer Trail. No evidence of the two isolates was observed at or near the intersection during the present survey.
- P-09-003805 – Lake Valley Telephone Line: The Lake Valley Telephone Line was not relocated during the present survey. No evidence of ceramic insulations, wire, or posts were observed in trees or on the ground. Trees in the area do not appear old enough to have been used as posts for the telephone line; those older

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trees were most likely removed during previous logging. Recent site records for the Lake Valley Telephone Line (Hall 2015a, 2018) indicate that no evidence of the resource was identified in or adjacent to the present APE. Furthermore, previous site records indicate the mapped location of the telephone line may be spatially inaccurate in some places; the alignment depicted in GIS was digitized from a 1922 FS map (Turner et al. 2007).

- P-09-003898 – Segment of Old Highway 89: The isolated and abandoned segment of Old Highway 89 was relocated during the present survey in the southwest corner of the APE. The road segment is in a deteriorated state. It has been reclaimed by harrowing and replanting (Hall 2015b). Only a few scattered pieces of asphalt remain of this particular segment of Old Highway 89. The road is considered an exempt resource under the Section 106 PA under Property Type 1 and in consultation with Caltrans PQS.
- R05190000026 – Old Placerville Road Segment: The Old Placerville Road segment located in the APE was described as a 1,300-foot-long abandoned portion of the original Pioneer Trail marked by a cleared swath of trees (Hall and Lindström 1996). Three major concentrations of 20th century domestic refuse were recorded along the segment. The Old Placerville Road segment was recommended eligible for listing in the National Register by Hall and Lindström (1996). Present intensive inventories of the Old Pioneer Trail identified approximately 270 feet of the road alignment within the Project APE. Evidence of the road segment is not discernable past the shoulder of Pioneer Trail towards Vandorhoff Court to the east or past the APE boundary towards the Tahoe Furs store to the south. The level road grade was narrower than previously recorded, measuring approximately 15 to 18 feet across. The northwestern 160-foot portion of visible road was devoid of trees; however, vegetation was encroaching onto the sides of the road. The southern 110-foot portion of the road was completely covered by low shrubs and young trees. Colluvium from the eastern upslope side of the road has covered sections of the segment throughout its length. Overall, the segment is well defined albeit lightly impacted by erosion and vegetation encroachment. No singular concentrations of refuse were observed along the segment. Instead, a somewhat even scatter of broken glass, sanitary cans, metal scraps, and ceramic sherds was evident throughout the roadbed and colluvium. The refuse is difficult to date.
- The historic maps and aerial imagery reviewed showed historic alignments of US 50 and Pioneer Trail within the APE.
- The NAHC specified negative SLF results within the APE.
- No prehistoric period archaeological resources were identified within the APE as part of the current inventory.

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5. PROPERTIES IDENTIFIED

☒ Lisa Bright, who meets the Professionally Qualified Staff (PQS) Standards in Section 106 PA Attachment 1 and as applicable PRC 5024 MOU Attachment 1 as a(n) PQS: PI-Historic Archaeology, has determined that the only/only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (**Properties Exempt from Evaluation**) and as applicable PRC 5024 MOU Stipulation VIII.C.1 and Attachment 4.

☒ The following archaeological sites within the APE are **considered eligible** for inclusion in the NRHP and/or as CHLs for the purposes of this project only because they will be protected in their entirety from any potential effects through the establishment of an Environmentally Sensitive Area (ESA), in accordance with Section 106 PA Stipulation VIII.C.3. See attached documentation.

- Site R05190000026 – Old Placerville Road Segment (not state owned)

6. FINDING FOR THE UNDERTAKING

☒ Caltrans, pursuant to Section 106 PA Stipulation X.B.1.a/b and Attachment 5 and as applicable PRC 5024 MOU Stipulation X.B.1.a/b and Attachment 5, has determined a **Finding of No Adverse Effect with Standard Conditions-ESA**, is appropriate for this undertaking, and is hereby notifying CSO of this finding. Lisa Bright, who meets the PQS Standards in Section 106 PA Attachment 1 and as applicable PRC 5024 MOU Attachment 1 as a(n) PI-Historic Archaeology, has reviewed the attached documentation and determined that it is adequate.

7. CEQA CONSIDERATIONS

☒ Not applicable; **Caltrans is not the lead agency under CEQA**.

8. LIST OF ATTACHED DOCUMENTATION

☒ Project Vicinity, Location, and APE Maps

- Maps located in Appendix A of Attachment 1
  - Figure 1: Project Area Location Map
  - Figure 2: Project Area Detail Map
  - Figure 3: Area of Potential Effect (APE) Map
  - Figure 4: Survey Coverage Map 1 of 2
  - Figure 5: Survey Coverage Map 2 of 2
- Maps located in Appendix A of Attachment 2

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- Figure 1: Project Vicinity Map
- Figure 2: Project Location Map
- Figure 3: Area of Potential Effect (APE) Map
- Figure 4: Environmental Sensitive Area (ESA) Map

☒ Archaeological Survey Report (ASR)

- Attachment 1 prepared by Molly Laitinen, Jeremy Hall, and Charles Zeier August 2020

☒ Environmentally Sensitive Area (ESA) Action Plan

- Attachment 2 prepared by Molly Laitinen and Charles Zeier August 2020

☒ Other

- Archival research and records search results in Attachment 1, Chapter 2.0 and Appendix C prepared by Molly Laitinen, Jeremy Hall, and Charles Zeier August 2020
- Native American consultation in Attachment 1, Chapter 3.0 and Appendix D prepared by Molly Laitinen, Jeremy Hall, and Charles Zeier August 2020

9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: Molly Laitinen 8/31/2020
Molly Laitinen, Staff Archaeologist Date
NCE
P.O. Box 1760
Zephyr Cove, NV 89449

Reviewed for
Approval by: Erick Wulf 7/2/2020
Erick Wulf, Associate Environmental Planner (Archaeology) Date
District 3 Caltrans PQS: PI-Prehistoric Archaeology

Approved by: Erin Dwyer Digitally signed by Erin Dwyer Date: 2020.09.02 14:24:23 -07'00'
Erin Dwyer, Senior Environmental Planner
District 3 Caltrans Cultural Resources (South) Date

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Attachment 1

ARCHAEOLOGICAL SURVEY REPORT

(Confidential, Not Included)

Appendix D

Native American Correspondence

Date:	August 27, 2019
To:	California Native American Heritage Commission
From:	NCE
Subject:	Pioneer Trail/US 50 Intersection Safety Improvement Project, El Dorado County

Ms. Cynthia Gomez, Executive Secretary
California Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, California 95691

Dear Ms. Gomez:

The County of El Dorado proposes to implement the Pioneer Trail/US 50 Intersection Safety Improvement Project located at the east end of Meyers, California. The intersection is the primary connection point to the City of South Lake Tahoe, Stateline, and Lake Tahoe. The "T" intersection is currently controlled by a traffic signal that causes a significant pinch point for motorists on both roads, particularly during high traffic volume periods (Friday evenings and Sunday afternoons when visitors are arriving or leaving) or during storm events. The intersection is challenging for alternative modes of transportation, including bicyclists and pedestrians, which lead them to frequently cut across the highway in undesirable locations. The area is prone to a higher than average accident rate, likely due to multiple factors, including grading and drainage issues (the southeast corner has standing water during rain events and snow melt), visibility issues related to signal equipment and tree encroachment, and excess motorist speed while turning from southbound Highway 50 onto eastbound Pioneer Trail (during winter storm conditions vehicles regularly slide through the intersection and hit waiting vehicles in the west bound lane of Pioneer Trail – there were at least four of these "fender benders" during the March 2 and 3 storm event).

The goal of the proposed improvements is to improve traffic flow through the intersection, improve grading and stormwater drainage, reduce traffic accidents, provide full and safe access for cyclists and pedestrians, create a gateway entrance into the Meyers residential neighborhood, and improve air quality by reducing idling and improving acceleration conditions.

This project is one of several improvements proposed within the Meyers U.S. Highway 50 Corridor, including the roundabout to be constructed by Caltrans at the intersection of U.S. Highways 89 and 50 starting in 2018. Substantial analysis has already been completed on the U.S. Highway 50 Corridor through Meyers, including the Pioneer Trail and U.S. Highway 50 intersection. NCE worked with the County to initiate the Meyers Operations Study in 2007 that included conducting preliminary traffic counts and gathering baseline utility information. Since then the County, in conjunction with partners, including the Tahoe Regional Planning Agency (TRPA), Federal Highway Administration (FHWA), Caltrans, local businesses, and the Meyers Community Foundation, has performed additional analysis, including a Traffic Operations Analysis, Road Safety Audit, and development of corridor alternatives as a part of an On Our Way Grant.

NCE has been retained to design the intersection improvements and conduct technical studies. This includes a cultural resources assessment of the project area in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents. A records search request using a quarter mile buffer has been submitted to the North Central Information Center (NCIC) to gather information pertaining to previous cultural

resource inventories and previously recorded archaeological and/or architectural resources within and adjacent to the project area. After receipt of the records search results and in consultation with the client, a field visit will be conducted to perform a pedestrian survey and photo document the project area. The results of the cultural resources assessment will be drafted in an Archaeological Survey Report (ASR) as part of a Historic Property Survey Report (HPSR) package to Caltrans.

The approximate 13.9-acre project area is located within Sections 20 and 29, Township 12 North, Range 18 East, Mount Diablo Meridian. Two maps are enclosed for your review. Figure 1 is a location map of the project area at a 1:24,000 scale with a USGS 7.5' quadrangle background (Echo Lake). Figure 2 provides more detail of the project area using an aerial basemap.

Please provide a Native American contact list for the portion of El Dorado County in the vicinity of the project area. We also request that you conduct a search of your Sacred Lands database for any places of concern that may be located within or adjacent to the proposed project area.

If you have any questions, please feel free to contact me via email at mlaitinen@ncenet.com or by telephone (775-588-2505). I appreciate your assistance and look forward to hearing from you soon.

Sincerely,

Molly Laitinen

Molly Laitinen
NCE | Cultural Resources Specialist
PO Box 1760
Zephyr Cove, NV 89448
(775) 588-2505
mlaitinen@ncenet.com

Enclosed: Tribal Consultation List Request Form; Figure 1 – Location Map; Figure 2 – Detail Map

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☑ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☑ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

___ **General Plan** ___ **General Plan Element** ___ **General Plan Amendment**

___ **Specific Plan** ___ **Specific Plan Amendment** ☑ **Pre-planning Outreach Activity**

Required Information

Project Title: Pioneer Trail/US 50 Intersection Safety Improvement Project

Local Government/Lead Agency: El Dorado County

Contact Person: Molly Laitinen, Cultural Resources Specialist, NCE

Street Address: P.O. Box 1760

City: Zephyr Cove, NV **Zip:** 89448

Phone: 775-588-2505 **Fax:**

Email: mlaitinen@ncenet.com

Specific Area Subject to Proposed Action

County: El Dorado **City/Community:** Meyers, South Lake Tahoe

Project Description:

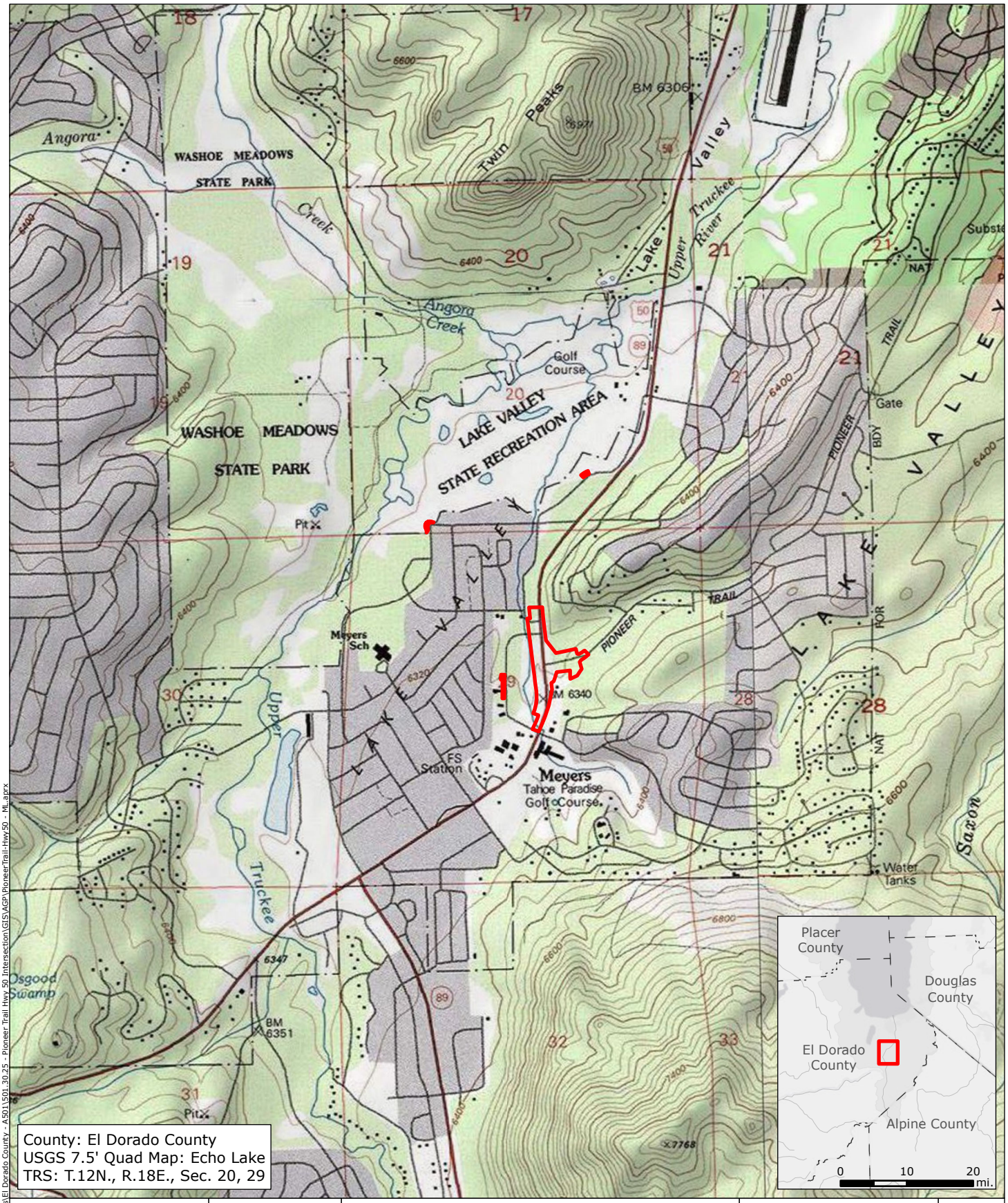
See attached letter.

Additional Request

☑ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Echo Lake 7.5'

Township: 12.N **Range:** 18.E **Section(s):** 20 and 29



Legend

Project Area

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Location Map

N

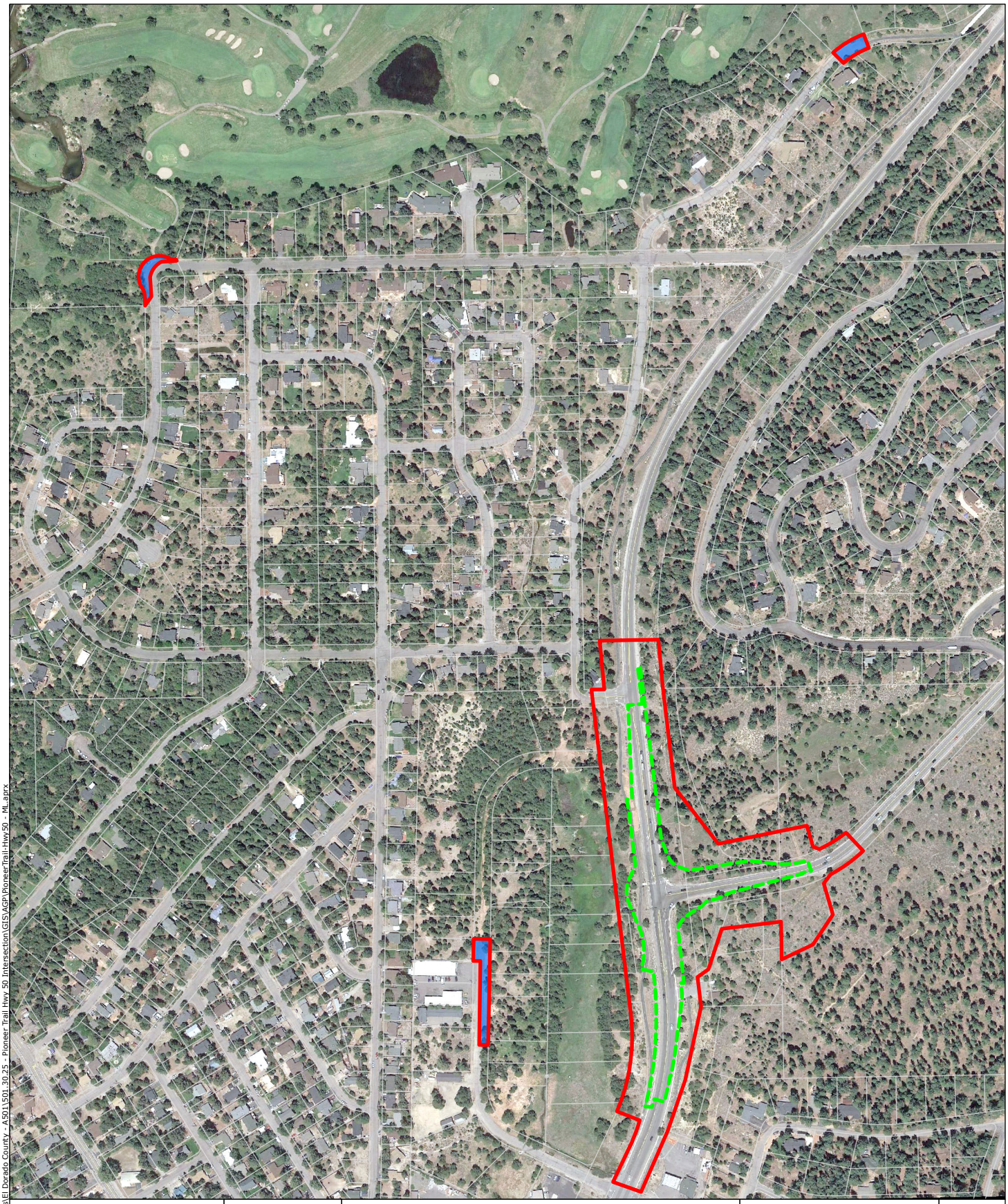
1:24,000

0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USGS Topo Maps	501.30.25	mlaitinen	6/27/2019	8/27/2019	drios/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx



Direct APE
Staging Area
Parcel Boundary
Proposed Extent of Improvements

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Detail Map

N

1 in. = 450 ft.

0 450 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Earth Imagery 2018, El Dorado County	501.30.25	mlaitinen	8/27/2019	-	ahueftle/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx

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

September 19, 2019

Molly Laitinen
NCE

VIA Email to: mlaitinen@ncenet.com

RE: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Pioneer Trail/US 50 Intersection Safety Improvement Project, El Dorado County.

Dear Ms. Laitinen:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

> 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 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.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;

   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and

   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: katy.sanchez@nahc.ca.gov .

Sincerely,

Katy Sanchez

KATY SANCHEZ
Associate Environmental Planner

Attachment

Native American Heritage Commission
Tribal Consultation List
09/20/2019

Washoe Tribe of Nevada and California
Darrel Cruz. Cult Res Dept. THPO
919 Highway 395 North Washoe
Gardnerville , NV 89410
Darrel.Cruz@washoetribe.us
(775) 265-8600 x10714

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.
Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety C ode, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65362.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed: Pioneer Trail/US 50 Intersection Safety Improvement Project, El Dorado County.

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION
https://www.edcgov.us/DOT/

PLACERVILLE OFFICES:
MAIN OFFICE:
2850 Fairlane Court, Placerville, CA 95667
(530) 621-5900 / (530) 626-0387 Fax

CONSTRUCTION & MAINTENANCE:
2441 Headington Road, Placerville, CA 95667
(530) 642-4909 / (530) 642-0508 Fax

LAKE TAHOE OFFICES:
ENGINEERING:
924 B Emerald Bay Road, South Lake Tahoe, CA 96150
(530) 573-7900 / (530) 541-7049 Fax

MAINTENANCE:
1121 Shakori Drive, South Lake Tahoe, CA 96150
(530) 573-3180 / (530) 577-8402 Fax

March 5, 2020

Darrel Cruz
Cultural Resources Department, THPO
Washoe Tribe of Nevada and California
919 Highway 395 South
Gardnerville, NV 89410

Dear Mr. Cruz:

Re: Invitation to Provide Consultation for the Pioneer Trail/US 50 Intersection Safety Improvement Project, Meyers, El Dorado County

The County of El Dorado (County), as the project sponsor and implementing agency in cooperation with the California Department of Transportation (Caltrans), is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project (Project). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The Project is situated in eastern El Dorado County, California, in the Tahoe Basin. Specifically, the Project is located in the community of Meyers in South Lake Tahoe in the central portion of Section 29, Township 12 North, Range 18 East (Mt. Diablo Meridian), and is within the USGS Echo Lake 7.5' quadrangle map. Two maps are enclosed for your review. Figure 1 is an overview map of the project area at a 1:24,000 scale, depicted on the Echo Lake quadrangle map. Figure 2 provides more detail of the project area using an aerial basemap.

The Project has been designed to implement a 'complete streets' strategy by proposing to install lighting, signage, and landscaping, reduce reliance on the private automobiles, provide multimodal transportation improvements like visible crosswalks for pedestrian and bicycle movements, provide for future growth for transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the Project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

The Project is identified within Tahoe Regional Planning Agency's (TRPA) Environmental Improvement Program (EIP) as Project #03.01.02.0074. The Project supports the *Linking Tahoe: Active Transportation Plan*, approved by the Tahoe Metropolitan Planning Organization in March 2016, and the more recently approved *Meyers Area Plan*, from March 2018. NCE has been retained to conduct technical studies,

including a cultural resources assessment of the project area in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents. NCE Cultural Resources Specialist, Molly Laitinen, is a consultant representing the County. Caltrans has been identified as the lead agency in support of Section 106 of the NHPA compliance. Presently, the County is working with Caltrans to transfer CEQA lead status from Caltrans to the County for CEQA compliance.

During the identification phase, we are working to obtain information regarding the presence of cultural resources (as defined under PRC 21074) within or adjacent to the project area and to learn of any concerns you or other tribal members may have regarding this project. These concerns can then be addressed early during the planning phase of the project delivery process. Information provided to the consulting archaeologist will remain confidential and exempt from public disclosure pursuant to PRC §5097.9 and §5097.993.

The Native American Heritage Commission (NAHC) Sacred Lands File (SLF) results were negative. A records search request using a quarter mile buffer was submitted to the North Central Information Center (NCIC). Search results indicated four historic resources were previously recorded extending into the project area. Two prehistoric sites were previously recorded within a quarter mile of the project area, the closest located approximately 120 meters from a proposed staging area. A field visit was conducted to perform a pedestrian survey and photo document the project area. During the survey, two historic road features were recorded, and two historic buildings were also identified (recordation requirements yet to be determined). Results of the preliminary cultural resources assessment will be drafted in an Archaeological Survey Report (ASR) in support of the California Environmental Quality Act (CEQA) and National Environmental Preservation Act (NEPA).

Please consider this letter and preliminary project information as the initiation of Section 106 consultation pursuant to the National Historic Preservation Act (NHPA) and formal notification of a proposed project as required under the CEQA, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

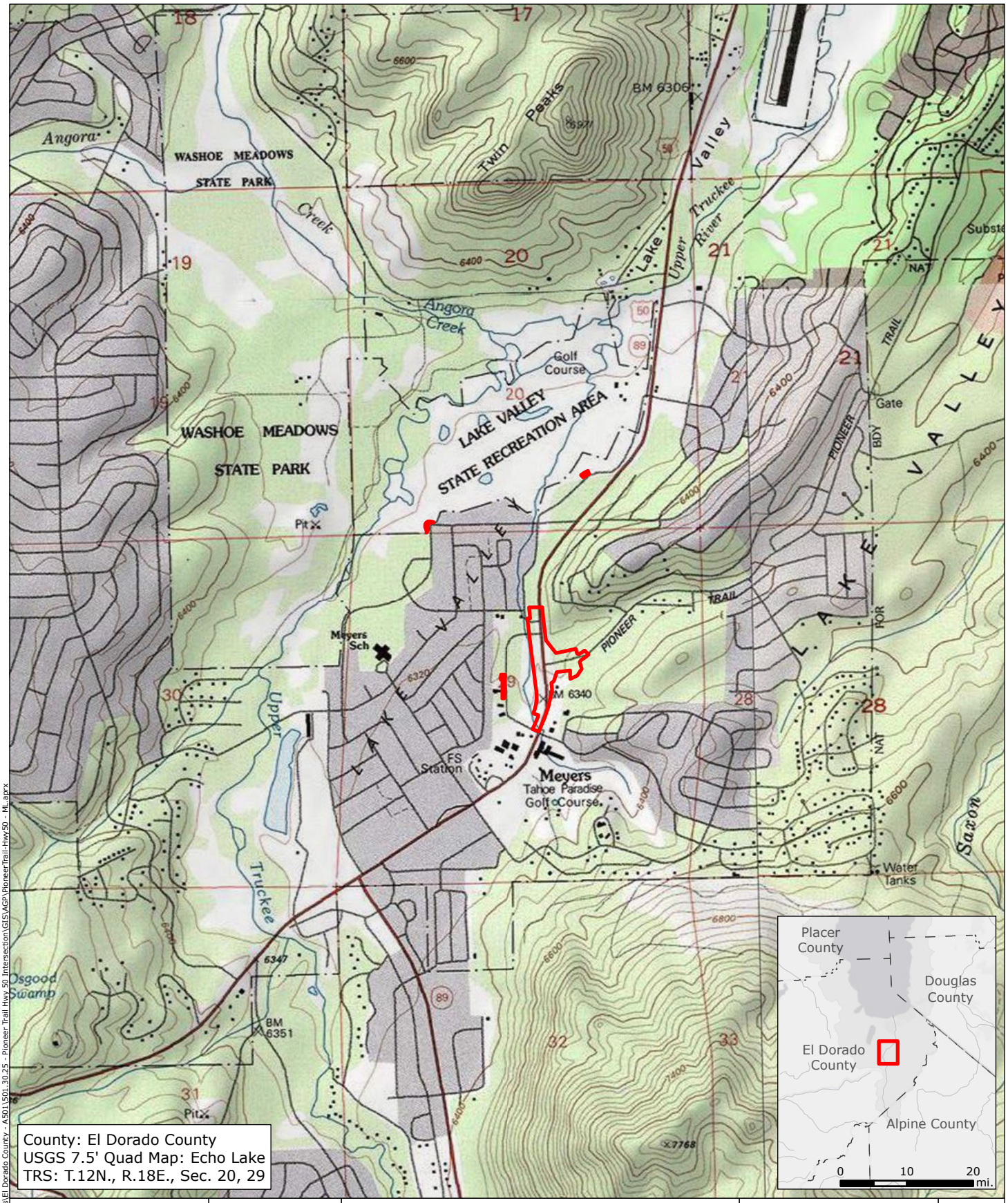
Should you have any questions, please do not hesitate to contact me at (530) 573-7920 or donaldo.palaroan@edcgov.us. We appreciate your assistance and look forward to hearing from you soon.

Sincerely,

Donaldo Palaroan, P.E.
Senior Civil Engineer

County of El Dorado
Community Development Services
Department of Transportation
924 B Emerald Bay Road
So. Lake Tahoe, CA 96150
(530) 573-7920 / FAX (530) 541-7049
donaldo.palaroan@edcgov.us

Enclosed: Figure 1 – Overview Map; Figure 2 – Detail Map



Legend

Project Area

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Location Map

N

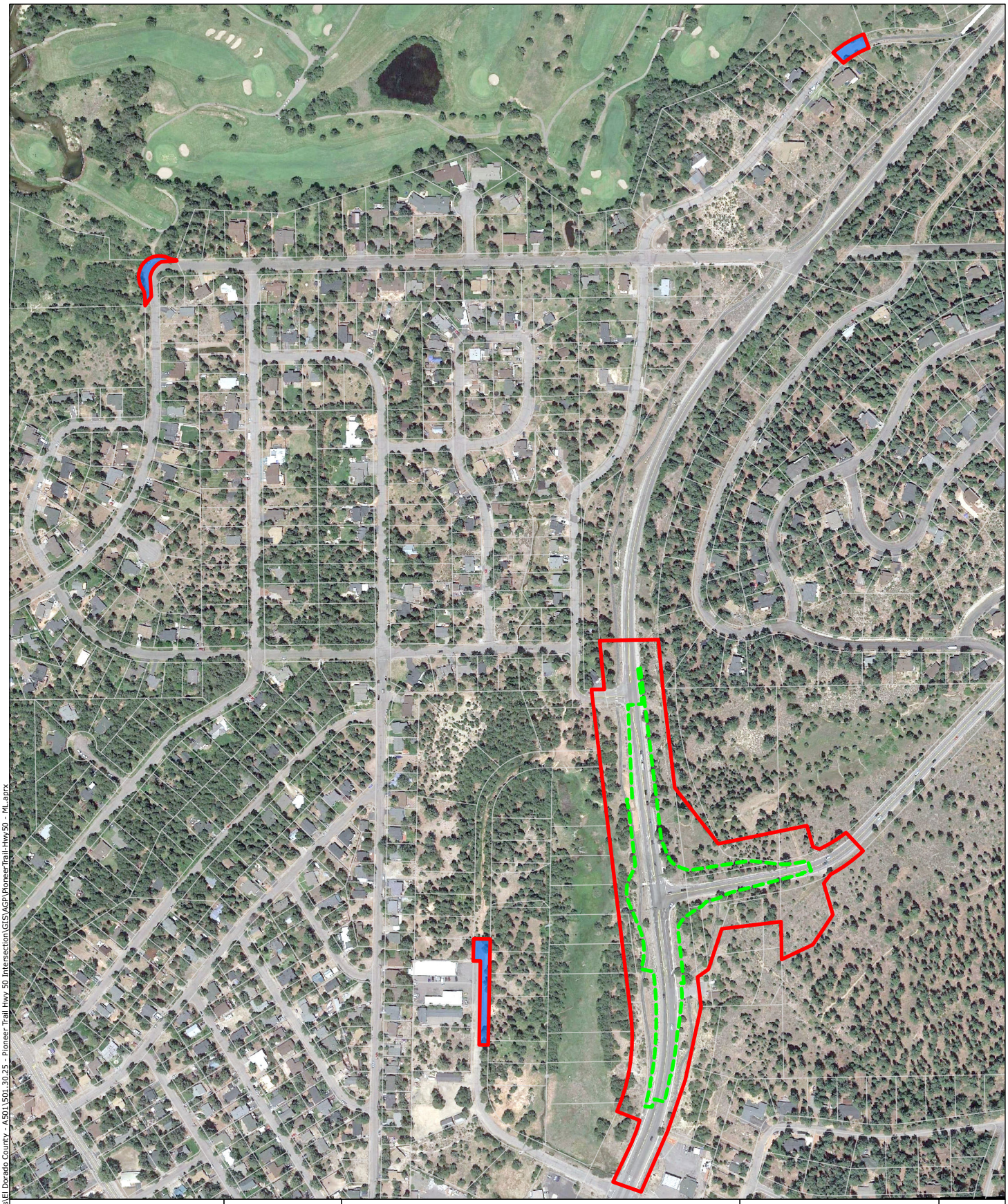
1:24,000

0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USGS Topo Maps	501.30.25	mlaitinen	6/27/2019	8/27/2019	drios/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx



Direct APE
Staging Area
Parcel Boundary
Proposed Extent of Improvements

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Detail Map

N

1 in. = 450 ft.

0 450 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Earth Imagery 2018, El Dorado County	501.30.25	mlaitinen	8/27/2019	-	ahueftle/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx

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Sent To: Darrel Cruz
Street, Apt. No.; or PO Box No.: 919 Highway 395 South
City, State, ZIP+4: Gardnerville, NV 89410

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Darrel Cruz
919 Highway 395 South
Gardnerville, NV 89410

9590 9402 5124 9092 6912 11

2. Article Number (Transfer from service label)

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x [signature] ☐ Agent ☐ Addressee

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D. Is delivery address different from item 1? ☐ Yes
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SD 1.30.25
Pioneer Trail

Feedback

Delivered

March 9, 2020 at 12:00 pm
Delivered, Left with Individual
GARDNERVILLE, NV 89410

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

March 9, 2020, 12:00 pm
Delivered, Left with Individual
GARDNERVILLE, NV 89410
Your item was delivered to an individual at the address at 12:00 pm on March 9, 2020 in GARDNERVILLE, NV 89410.

March 9, 2020, 9:05 am
Out for Delivery
GARDNERVILLE, NV 89410

March 9, 2020, 8:54 am
Arrived at Unit
GARDNERVILLE, NV 89410

March 8, 2020, 12:20 pm
Departed USPS Regional Origin Facility
RENO NV DISTRIBUTION CENTER

March 7, 2020
In Transit to Next Facility

March 6, 2020, 10:14 pm
Arrived at USPS Regional Origin Facility
RENO NV DISTRIBUTION CENTER

March 6, 2020, 5:03 pm
Departed Post Office
ZEPHYR COVE, NV 89448

March 6, 2020, 5:01 pm
USPS in possession of item
ZEPHYR COVE, NV 89448

Feedback

Product Information

See Less ^

From:	Donaldo Palaroan
To:	Molly Laitinen
Cc:	Dave Rios; Angela Hueftle
Subject:	Fwd: Pioneer Trail/ U.S. Highway in South Lake Tahoe
Date:	Tuesday, May 5, 2020 9:14:56 AM

Hi Molly,

I followed up with Darrel today and he returned the email below.

Please let me know if you have any questions. Thanks.

Donaldo Palaroan, P.E.
Senior Civil Engineer

County of El Dorado
Department of Transportation
924 B Emerald Bay Road
So. Lake Tahoe, CA 96150
(530) 573-7920 / FAX (530) 541-7049
donaldo.palaroan@edcgov.us

---------- Forwarded message ---------
From: **Darrel Cruz** <Darrel.Cruz@washoetribe.us>
Date: Tue, May 5, 2020 at 9:10 AM
Subject: RE: Pioneer Trail/ U.S. Highway in South Lake Tahoe
To: Donaldo Palaroan <donaldo.palaroan@edcgov.us>

Hello Donaldo,

Thank you for consulting with the Washoe Tribe of Nevada and California on the proposed project. We do not have immediate knowledge of cultural resources with the APE that may be affected by the project. However, in the event of unanticipated discoveries as a result of project activities we wish to be kept informed of the finding and continue consultation

Darrel

Darrel Cruz, Director

Tribal Historic Preservation Office/

Cultural Resources Office

919 Highway 395

Gardnerville, NV. 89410

P. (775) 265-8600

C. (775) 546-3421

darrel.cruz@washoetribe.us

From: Donaldo Palaroan [mailto:donaldo.palaroan@edcgov.us]
Sent: Monday, April 13, 2020 1:38 PM
To: Darrel Cruz <Darrel.Cruz@washoetribe.us>
Subject: Pioneer Trail/ U.S. Highway in South Lake Tahoe

Hi Darrel,

I hope you are staying safe and healthy.

I wanted to follow-up with you regarding El Dorado County's subject project. The County's consultant sent you a letter on March 6, 2020, attached for reference. Did you get a chance to review the letter? If so, do you have any questions for me? I would appreciate any feedback or input from you when you have an opportunity.

Your attention to the matter is appreciated. Thank you and have a wonderful rest of your day.

Donaldo Palaroan, P.E.
Senior Civil Engineer

County of El Dorado

Department of Transportation

924 B Emerald Bay Road

So. Lake Tahoe, CA 96150

(530) 573-7920 / FAX (530) 541-7049
donaldo.palaroan@edcgov.us

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Appendix E

Public Outreach

MEYERS CORRIDOR OPERATIONAL IMPROVEMENT

EL DORADO COUNTY | lake Tahoe

To all Meyers residents and interested individuals:

You are invited to attend a public meeting to discuss the three corridor options on roadway and path improvements that will provide attractive and safe transportation options for working, living, visiting and playing in Meyers. We want your feedback.

It's your community. Attend a community meeting.

There will be a visual presentation of the concepts provided by County staff and opportunities for questions and comments.

When: Thursday, July 21, 2016 from 6:00 P.M. – 8:00 P.M.

Where: California Conservation Corps Building at 1949 Apache Ave., Meyers

Please visit www.edcgov.us/DOT/Tahoe_Engineering.aspx

COMMUNITY DEVELOPMENT AGENCY

TRANSPORTATION DIVISION

http://www.edcgov.us/DOT/

PLACERVILLE OFFICES:
MAIN OFFICE:
2850 Fairlane Court, Placerville, CA 95667
(530) 621-5900 / (530) 626-0387 Fax

CONSTRUCTION & MAINTENANCE:
2441 Headington Road, Placerville, CA 95667
(530) 642-4909 / (530) 642-0508 Fax

LAKE TAHOE OFFICES:
ENGINEERING:
924 B Emerald Bay Road, South Lake Tahoe, CA 96150
(530) 573-7900 / (530) 541-7049 Fax

MAINTENANCE:
1121 Shakori Drive, South Lake Tahoe, CA 96150
(530) 573-3180 / (530) 577-8402 Fax

MEYERS CORRIDOR OPERATIONAL IMPROVEMENT PROJECT

Frequently Asked Questions

1. **Why is the County concerned with planning/building the Meyers corridor when fixing roads should be the priority?**

   The Meyers corridor is one of eight individual corridor plans identified in the *Regional Transportation Plan*. According to this plan, corridor planning "will address multi-modal transportation solutions, environmental improvement, safety for all roadway users, support for economic vitality, quality of life and accelerated delivery of projects and services." The project aims to redevelop the transportation system to achieve complete streets, improve circulation and provide opportunities to experience Meyers as a pedestrian or cyclist, while also improving safety and efficiency for motorists. Funding for this work will primarily come from Federal and State sources.

   The County's Transportation Operations and Maintenance unit manages repair, maintenance and replacement of existing County roadway and drainage infrastructure. This unit is responsible for the maintenance of 1,079 centerline miles of roadway, of which 160 centerline miles are the responsibility of the Tahoe Road Maintenance staff. Funding for this work comes from local fund sources.

2. **When is this project going to be constructed and what is the anticipated cost?**

   The project is very early in the planning stages so estimates are very preliminary at this point. The project is most likely to be implemented in phases due to the scale of the proposed improvements, the limited funding sources and the short Tahoe construction season. Implementation can begin as early as 2019.

3. **In what capacity is Caltrans involved in this project?**

   Nearly all phases of the project are on Caltrans property, so Caltrans is an important partner in this effort and continues to provide the necessary support to further this project. The County is in constant communication with Caltrans to ensure the project follows the appropriate processes and strict adherence to local, State and Federal guidelines.

4. **Didn't Caltrans just complete a construction project through Meyers in 2014?**

   Yes. The primary focus of the 2014 project was to construct water quality improvements. These improvements included rehabilitating existing drainage systems and installed new drainage systems, infiltration basins, vegetated swales and water conveyance systems; deployed water treatment Best Management Practices; provided rock slope protection; constructed rock energy dissipators; revegetate bare or erodible areas; and, installed traction sand traps.

5. **How is this project related to the proposed improvements at the State Route 89 and US Highway 50 intersection?**

   Caltrans is the lead agency to implement the improvements at this intersection. More information can be found at: http://www.dot.ca.gov/dist3/Projects/4F840-Meyers/prjindex.htm. The County is part of the project development team and continues to coordinate with the State as the project progresses.

6. **How is this project going to help alleviate the weekend or seasonal gridlock traffic out of Meyers?**

   This project is not intended to solve the peak demand issues experienced by motorists on US 50 on Sunday afternoons. Rather, the project seeks to improve efficiency for all users through the corridor at other times. The primary goals of the project are to improve:

   - The corridor operation and design by redeveloping the transportation system to provide intersection improvements to allow for safe cross-traffic movement and transit operation;
   - The corridor safety by proposing to decrease the width of the highway and reduce overall traffic speeds while also providing safe pedestrian access points and crossings;
   - The multi-modal transportation system to reduce the reliance on private automobile, improve circulation, and provide opportunities to experience the community as a pedestrian or cyclist and expand the local transit system by providing a park-and-ride facility along with a transit service facility; and,
   - The environment and to restore disturbed Stream Environment Zone (SEZ) areas and treat storm water runoff to improve water quality to the maximum extent practicable.

A project webpage has been set up to provide updated project related information at:

http://www.edcgov.us/MeyersCOIP.aspx

Appendix F

Historic Society Outreach

From:	Molly Laitinen
To:	Phillip L. Sublett
Cc:	PLSublett@LakeTahoeMuseum.org
Subject:	FW: Pioneer Trail/Highway 50 Intersection Safety Improvement Project Consultation
Date:	Monday, April 13, 2020 1:15:00 PM
Attachments:	2_Location Map.pdf 1_APE Map v03.pdf

Hi Phillip,

I hope that you are doing well. I am following up with the email I sent you below. Please let me know if you would like to discuss this project in more detail.

Thank you,

Molly

From: Molly Laitinen
Sent: Friday, March 13, 2020 3:28 PM
To: Phillip L. Sublett <phillip.l.sublett@gmail.com>
Cc: Dave Rios <DRios@ncenet.com>; Jeremy Hall <JHall@ncenet.com>; Angela Hueftle <AHueftle@ncenet.com>
Subject: Pioneer Trail/Highway 50 Intersection Safety Improvement Project Consultation

Hi Phillip,

El Dorado County is proposing to implement the Pioneer Trail/Highway 50 Intersection Safety Improvement Project and I would like to discuss any questions or concerns you and the Lake Tahoe Historical Society may have regarding cultural resources within the project area. NCE has been retained to conduct technical studies, including a cultural resources assessment, in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents. Attached are two maps of the project area for your review.

At this time, we have conducted in depth discussions with archaeologists and architectural historians at Caltrans, a pedestrian survey of the project area, and the County is in consultation with the Washoe Tribe. One eligible resource, a segment of the Old Placerville Road (aka Pioneer Trail, Old Emigrant Trail, Johnson's Cutoff, Bonanza Road) has been identified within the project area and will be fenced off for protection during any construction activities. Other resources previously recorded within the APE were either not relocated in the field or will be outside the area directly impacted by construction.

Please let me know if you would like more information regarding this project.

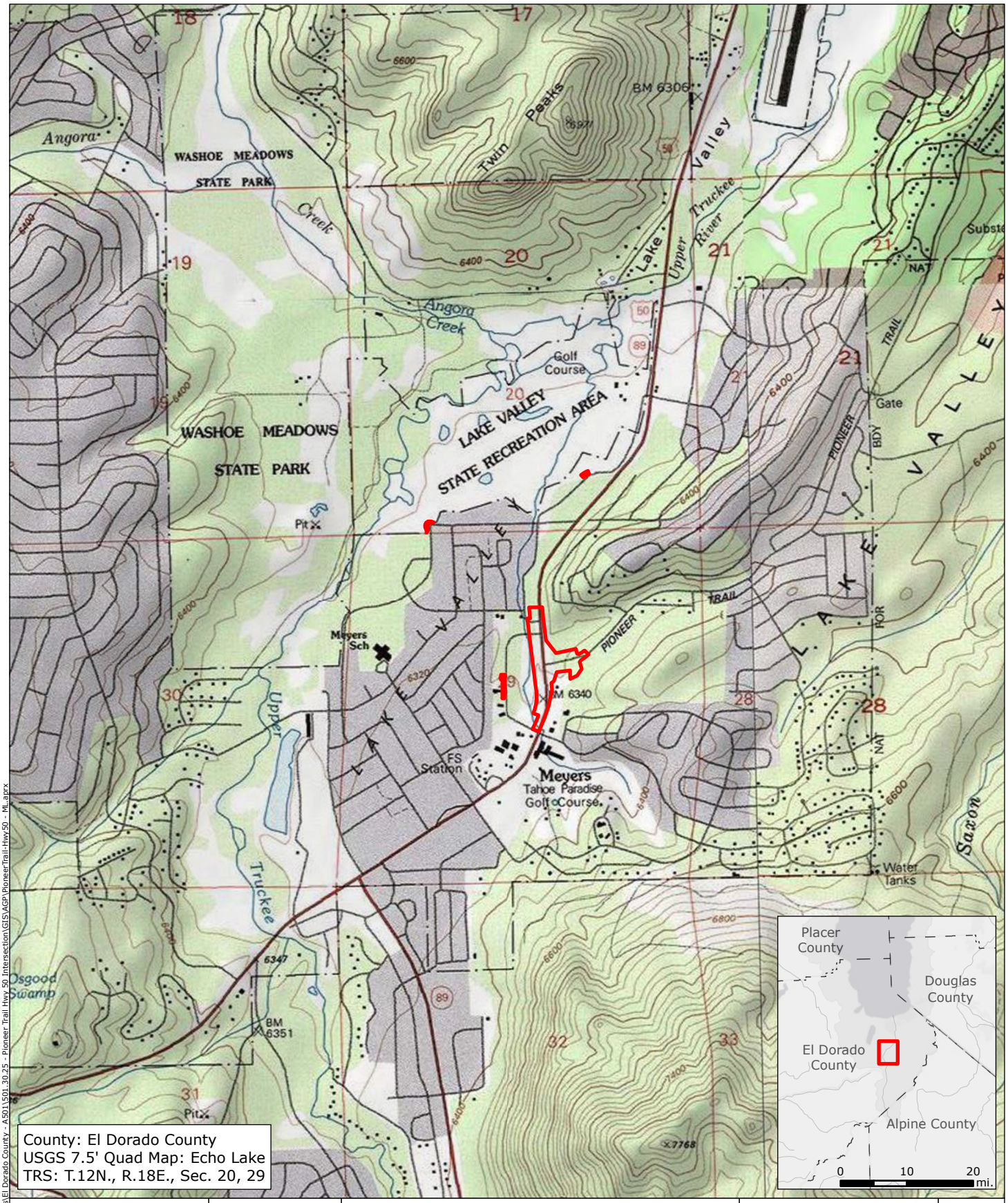
Thank you,

Molly Laitinen, RPA
Cultural Resources Specialist

p (775) 588-2505 **c** (408) 823-4570
f (775) 588-2607 **e** mlaitinen@ncenet.com

NCE
P.O. Box 1760, Zephyr Cove, NV 89448
www.ncenet.com

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Legend

Project Area

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Project Area Location Map

N

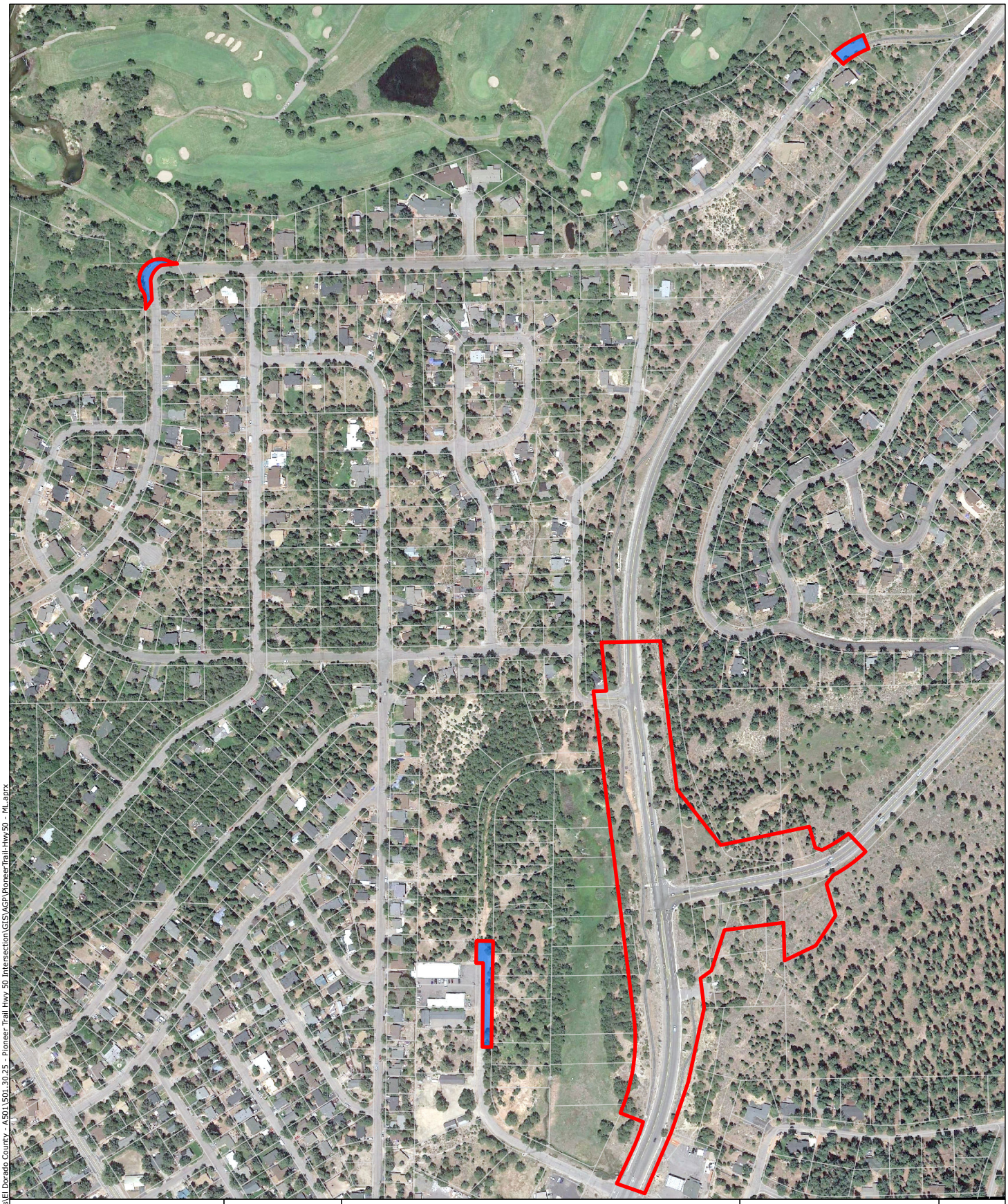
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0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USGS Topo Maps	501.30.25	mlaitinen	6/27/2019	8/27/2019	drios/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx



Legend
- Direct APE
- Staging Area
- Parcel Boundary

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

Area of Potential Effect (APE) Map

N

1 in. = 450 ft.

0 450 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Earth Imagery 2018, El Dorado County	501.30.25	mlaitinen	6/27/2019	8/5/2019	ahueftle/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx

Appendix G

Project Photos

CULTURAL RESOURCES PHOTOGRAPH RECORD

Project Name: Pioneer Trail/US 50 Intersection Safety Improvement Project
Project Number: 501.30.25

Date	Frame Number	Site/Iso Number	Feature Number	Description	View
10/18/2020	IMG_6964	-	-	Overview from northwest corner of APE looking along US 50 towards Pioneer Trail intersection	S
10/18/2020	IMG_6966	-	-	Overview of US 50/Pioneer Trail intersection	S
10/18/2020	IMG_6967	-	-	Westernmost edge of APE near Meyers Creek Meadow	NE
10/18/2020	IMG_6968	-	-	Overview of US 50/Pioneer Trail intersection	E
10/18/2020	IMG_6969	-	-	Overview of US 50/Pioneer Trail intersection	NE
10/18/2020	IMG_6970	-	-	Overview of US 50/Pioneer Trail intersection	E
10/18/2020	IMG_6972	-	-	Overview of US 50/Pioneer Trail intersection	SE
10/18/2020	IMG_6973	-	-	Tahoe Fur store to southeast of APE	E
10/18/2020	IMG_6974	-	-	Overview of US 50/Pioneer Trail intersection	NE
10/18/2020	IMG_6975	-	-	Landscaped shoulder between US 50 and bike trail on west side of APE	S
10/18/2020	IMG_6976	P-09-003898	F-01	Abandoned segment of Old Hwy 89	SW
10/18/2020	IMG_6977	P-09-003898	F-01	Abandoned segment of Old Hwy 89	N
10/18/2020	IMG_6978	P-09-003898	F-01	Abandoned segment of Old Hwy 89	S
10/18/2020	IMG_6979	P-09-003898	F-01	Abandoned segment of Old Hwy 89	NW
10/18/2020	IMG_6981	-	-	Overview from southwest corner of APE looking along US 50 towards Pioneer Trail intersection	N
10/18/2020	IMG_6982	-	-	Overview from southwest corner of APE looking along US 50 towards modern gas station	NE
10/18/2020	IMG_6984	-	-	Overview from southeast corner of APE looking along US 50 towards Pioneer Trail intersection	N
10/18/2020	IMG_6986	-	-	Overview between bike trail and US 50 on east side of APE	SW
10/18/2020	IMG_6987	-	-	Overview between bike trail and US 50 on east side of APE	N
10/18/2020	IMG_6998	-	-	Overview from northeast corner of APE looking along US 50 towards Pioneer Trail intersection	S
10/18/2020	IMG_6999	-	-	Overview of US 50/Pioneer Trail intersection	SW
10/18/2020	IMG_7001	-	-	Overview of modern erosion ditches at northeast side of US 50/Pioneer Trail intersection	N
10/18/2020	IMG_7002	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50	SW
10/18/2020	IMG_7003	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50	W
10/18/2020	IMG_7004	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50	E
10/18/2020	IMG_7005	-	-	Overview of APE from southeast corner of US 50/Pioneer Trail intersection	S
10/18/2020	IMG_7007	-	-	Overview from easternmost section of APE	S
10/18/2020	IMG_7008	-	-	Overview from easternmost section of APE	W
10/18/2020	IMG_7009	-	-	Overview from easternmost section of APE	SW
10/18/2020	IMG_7010	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50; near Old Placerville Road segment	W
10/18/2020	IMG_7011	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50	NE
10/18/2020	IMG_7012	-	-	Overview of APE along south side of Pioneer Trail towards intersection with US 50	W
10/18/2020	IMG_7013	-	-	Overview of APE along south side of Pioneer Trail	S
10/18/2020	IMG_7015	-	-	Staging Area on Santa Fe Road	N
10/18/2020	IMG_7016	-	-	Staging Area on Santa Fe Road	S
10/18/2020	IMG_7017	-	-	Staging area at corner of Bakersfield Street and Country Club Drive	W
10/18/2020	IMG_7018	-	-	Staging area at corner of Bakersfield Street and Country Club Drive	N

CULTURAL RESOURCES PHOTOGRAPH RECORD

Project Name: Pioneer Trail/US 50 Intersection Safety Improvement Project
Project Number: 501.30.25

Date	Frame Number	Site/Iso Number	Feature Number	Description	View
10/18/2020	IMG_7019	-	-	Staging area at end of Arapahoe Street	NE
10/18/2020	IMG_7020	-	-	Staging area at end of Arapahoe Street	SW
3/12/2020	IMG_9367	R05190000026	F-01	North end of Old Placerville Road segment at current alignment of Pioneer Trail	SW
3/12/2020	IMG_9368	R05190000026	F-01	North end of Old Placerville Road segment at current alignment of Pioneer Trail	NE
3/12/2020	IMG_9369	R05190000026	F-01	North end of Old Placerville Road segment at current alignment of Pioneer Trail	SW



IMG_6964



IMG_6966



IMG_6967



IMG_6968



IMG_6969



IMG_6970



IMG_6972



IMG_6973



IMG_6974



IMG_6975



IMG_6976



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IMG_6984



IMG_6986



IMG_6987



IMG_6998



IMG_6999



IMG_7001



IMG_7002



IMG_7003



IMG_7004



IMG_7005



IMG_7007



IMG_7008



IMG_7009



IMG_7010



IMG_7011



IMG_7012



IMG_7013



IMG_7015



IMG_7016



IMG_7017



IMG_7018



IMG_7019



IMG_7020



IMG_9367



IMG_9368



IMG_9369

Appendix H

DPR Site Forms

(sensitive material redacted for public distribution)

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APPENDIX F

ENVIRONMENTALLY SENSITIVE AREA ACTION PLAN

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Attachment 2

Environmentally Sensitive Area Action Plan

NCE Collaboration. Commitment. Confidence.℠

Environmentally Sensitive Area (ESA) Action Plan

For the

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California

03-ED-50, P.M. 71.48, EA 2H610, E-FIS 0317000163

USGS 7.5' Topographic Quadrangle: Echo Lake
T.12N., R.18E., Sec. 20 and 29
Project Acreage: 13.92 acres
Archaeological Site Number: 05190000026

Prepared for:
Erin Dwyer, Senior Environmental Planner
Caltrans District 3, Cultural Resources (South)

Prepared by:

Molly Laitinen, Staff Archaeologist
NCE
P.O. Box 1760
Zephyr Cove, NV 89448

Charles Zeier, Senior Archaeologist
NCE
P.O. Box 1760
Zephyr Cove, NV 89448

Approved by:

Erin Dwyer Digitally signed by Erin Dwyer
Date: 2020.09.02 15:03:18
-07'00'

Erin Dwyer, PQS: PI- Prehistoric and Historical Archaeology
Caltrans District 3, Cultural Resources (South)

Erick Wulf, PQS: PI-Prehistoric Archaeology
Caltrans District 3, Cultural Resources (South)

August 2020

SUMMARY OF ACTION PLAN

The County of El Dorado (County) as the project sponsor and implementing agency, in cooperation with the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration (FHWA), is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project (Project). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The Project has been designed to implement a 'complete streets' strategy by proposing to install lighting, signage, and landscaping, reduce reliance on the private automobile, provide multimodal transportation improvements like visible crosswalks for pedestrian and bicycle movements, provide for future growth for transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the Project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

County is the project proponent, GHD and NCE were retained to complete the proposed Project design, and NCE was retained to conduct technical studies, including a cultural resources assessment of the Project area, or Area of Potential Effect (APE), in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents.

Archaeological surveys conducted in October 2019 and March 2020 by NCE relocated one previously identified built environment resource within the Project's Area of Potential Effects (APE): a segment of the Old Placerville Road (aka Pioneer Trail, Old Emigrant Trail, Johnson's Cutoff, Bonanza Road) (05190000026). The Old Placerville Road segment is assumed eligible for listing in the NRHP for the purposes of this undertaking.

In consultation with Caltrans, NCE has applied the Criteria of Adverse Effects and proposes that a finding of No Adverse Effect with Standard Conditions is appropriate for the linear resource. However, due to the proximity of Project activities to the Old Placerville Road, it is recommended that the site be protected from any potential Project effects by establishment and enforcement of an Environmentally Sensitive Area (ESA). This ESA Action Plan will support a finding of **No Adverse Effect with Standard Conditions** for this resource. This ESA Action Plan was prepared in accordance with Stipulation X.B.1.a and Attachment 5 of 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* (FHWA 2014).

The ESA will be established as depicted on the Project plans as defined in the contract Standard Special Provisions (SSPs) 14-1.02 and by way of ESA barriers (high visibility fencing) erected prior to construction activities. No Project-related activities including but limited to paving, utility relocation, maintenance, staging, equipment parking, streetlight installation, replanting,

or other ground disturbance shall take place within the ESA. Responsible parties are defined in the following sections and listed in Table 2 (pages 10 through 12) of this document.

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1.0 PROJECT DESCRIPTION

The County of El Dorado (County) as the project sponsor and implementing agency, in cooperation with the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration (FHWA), is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 and Pioneer Trail intersection in Meyers, California, into a three-legged roundabout as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project (Project). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The Project has been designed to implement a 'complete streets' strategy by proposing to install lighting, signage, and landscaping, reduce reliance on the private automobile, provide multimodal transportation improvements like visible crosswalks for pedestrian and bicycle movements, provide for future growth for transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the Project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

1.1 REGULATORY COMPLIANCE

NCE was retained to conduct technical studies, including a cultural resources assessment of the Project area, or Area of Potential Effect (APE), in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents. This Archaeological Survey Report (ASR) describes an intensive archaeological survey conducted on behalf of the proposed Project.

Because the proposed Project is located along a Federal Highway, compliance with the NEPA will be required. Caltrans, acting on behalf of FHWA, will act as the federal lead agency for the purposes of NEPA. In addition, the proposed Project must comply with provisions of the National Historic Preservation Act (NHPA). The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the NHPA (36 CFR Part 800) and pursuant to 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* (Section 106 PA). The proposed Project will constitute the undertaking, as that term is commonly used in cultural resources management.

Compliance with state law will occur in accordance with Public Resource Code (PRC) Section 21083.2 and 21084.1 of the CEQA. The County will act as the CEQA lead agency. County is the project proponent, and GHD and NCE were retained to complete the proposed Project design.

The pedestrian archaeological survey was conducted by Molly Laitinen, NCE Staff Archaeologist. Fieldwork took place on October 18, 2019 and March 12, 2020. Ms. Laitinen meets the Professionally Qualified Staff (PQS) Standards in Section 106 PA Attachment 1 and as applicable PRC 5024 MOU Attachment 1 as a(n) Lead Archaeological Surveyor. She meets the Secretary of Interior's (SOI) Standards for Archaeology and Historic Preservation (36 CFR Part 61) and is a Registered Professional Archaeologist. She has four years of experience in historic

preservation, archaeological investigation, and cultural resource evaluation as part of State, Federal, and professional standards in compliance with Section 106 of the NHPA and PRC Section 21083.2 of the CEQA.

1.2 HIGHWAY PROJECT LOCATION

The Project is located in eastern El Dorado County, California, in the Tahoe Basin (**Appendix A, Figure 1**). Specifically, the Project is located in the community of Meyers in South Lake Tahoe in the central portion of Section 29 of Township 12 North and Range 18 East (Mt. Diablo Meridian) and is within the USGS Echo Lake 7.5-minute quadrangle map (**Appendix A, Figure 2**).

The APE covers a total of 13.9 acres bordered by the North Upper Truckee Road on the west, Washoe Meadows State Park to the north, US 50/State Route 89 on the south, and Apache Avenue to the east (**Appendix A, Figure 3**). This includes 1.3 miles of US 50/state route 89 highway system (at postmark 71.48). Three potential staging areas are being considered for this Project. The first potential 0.3-acre staging area would be located along the shoulder and at the north end of Santa Fe Road approximately 0.3 miles southwest of the intersection of US 50 and Pioneer Trail. The second 0.13-acre staging area would be located at the end of Arapahoe Street approximately 0.5 miles north of the intersection of US 50 and Pioneer Trail. The third 0.14-acre staging area would be at the pullout at the corner of Bakersfield Street and Country Club Drive approximately 0.5 miles northwest of the intersection of US 50 and Pioneer Trail.

1.3 LAND USE AND OWNERSHIP

Project activities would occur within County rights-of-way (ROW) associated with Pioneer Trail and federal highway US 50/Caltrans owned state route 89, and on adjacent publicly owned parcels belonging to the California Tahoe Conservancy, staging areas, and a portion of land of owned by private property owners. The Project is located within plan area statement (PAS) 123 -Meyers Forest. PAS are considered land use and zoning guidance documents for both the Tahoe Regional Planning Agency (TRPA) and the County. PAS 123 has a management strategy of mitigation, and a special designation as a scenic restoration area; the Project is located within Scenic Roadway Units 36 (US 50/State Route 89) and Unit 46 (Pioneer Trail).

Most of the PAS 123 area is undeveloped except for some minor structures at the US 50/Pioneer Trail intersection (TRPA 2002). The planning statement for this area is that it is to be retained as open space and managed appropriately for visual enhancement and maintenance of early successional stage vegetation.

1.4 HIGHWAY PROJECT DESCRIPTION

The US 50 corridor serves as the main entry point for Lake Tahoe visitors through the community of Meyers. At the east end of Meyers sits the Pioneer Trail/US 50 intersection, which is the primary connection point to the City of South Lake Tahoe, Stateline, and Lake Tahoe. The "T" intersection is currently controlled by a traffic signal. Based on the need and purpose of the Project, it is proposed the existing signalized intersection at the US 50 and Pioneer Trail intersection be converted into a three-legged roundabout including but not limited to lighting (pedestrian and/or streetlights), utilities, roadbed grading, sidewalks, bicycle paths, restriping, and other improvements (**Appendix B**). Refer to "Archaeological Survey Report for the Pioneer Trail/US 50 Intersection Safety Improvement Project, El Dorado County, California" (Laitinen et al. 2020) for a full discussion of the existing conditions and proposed Project elements.

1.5 AREA OF POTENTIAL EFFECT

In accordance with Section 106 PA Stipulation VIII.A, the APE for the Project was established in consultation with Erick Wulf, Caltrans PQS: PI-Prehistoric Archaeology, and Martin Clark, P.E., Program/Project Manager, in August 3, 2020 (see **Figure 3**).

The 13.9-acre APE was established to include all areas of potential impacts and includes the full extent of the horizontal and vertical limits from construction activities described above and the use of temporary staging areas as determined through discussion with Caltrans, the County, GHD, and NCE design and construction engineers. The APE includes all potential ground disturbance including but not limited to excavation of earth with heavy equipment, stockpiling of material, heavy equipment driving over the ground, vegetation removal, staging, and access routes along US 50 within Caltrans right of way of and Pioneer Trail. The APE also includes staging and storage areas on Arapahoe Street, Santa Fe Road, and Country Club Drive. The vertical APE limits include seven (7) feet maximum depth for lighting; nine (9) feet maximum depth for SD facilities; 13 feet maximum depth for utility pole removal; six (6) feet maximum depth for modifications to existing utilities; six (6) feet maximum depth for removal of the existing telephone pole; 2.5 feet maximum depth for electrical conduit for a luminaire; four (4) feet maximum depth for installing the new roadbed; 14.5 inches maximum depth for grinding the existing roadway; 3.5 feet maximum depth for installing the new multi-use concrete path; four (4) feet maximum depth for installing the islands; and three (3) feet maximum depth for installing new roadway signs.

1.6 HISTORIC PROPERTIES

One built-environment site, a segment of the Old Placerville Road (aka Pioneer Trail, Old Emigrant Trail, Johnson's Cutoff, Bonanza Road) (05190000026) will be protected in its entirety by the establishment of an ESA pursuant to VIII.C.3 of the Section 106 PA. The site is situated within the APE in proximity to proposed Project ground disturbing activities. This warrants the need for protective measures from nearby construction activities. Such activities include but are not limited to paving, utility relocation, maintenance, staging, equipment parking, and replanting. The resource location is depicted in **Appendix A, Figure 3**. Photos taken of the resource on March 12, 2020 are in in **Appendix C**.

1.6.1 Old Pioneer Trail (05190000026)

The Old Placerville Road segment located in the APE was described as a 1,300-foot-long abandoned portion of the original Pioneer Trail marked by a cleared swath of trees (Hall and Lindström 1996). Designated as Feature 1, it extended from the neighborhood on Vandorhoff Court and turned sharply south towards Meyers and US 50. The road was described as averaging 25 feet across and 40 feet across where turnouts may have been located. When compared to historic maps and aerials, it was inferred that this segment may have been in use at least as early as 1861 and as late as 1964 when Pioneer Trail was paved and the traffic signal was installed. It appears the Tahoe Furs store was built on top of the Old Pioneer Trail alignment which was still quite visible in the 1969 aerial imagery. Three major concentrations of 20th century domestic refuse features were recorded along the segment. Artifacts mainly included sanitary food and beverage cans, glass, ceramics, and metal scraps ranging from the 1880s to the 1970s.

Hall and Lindström (1996) described the Old Pioneer Trail grade and contour as lightly impacted but morphologically intact because the grade was easily discernable. Alterations to the grade included a 20-foot-wide graded area where logging vehicles and/or equipment had breached the road. Vegetation regrowth and localized areas of erosion from water runoff were also

observed. No other major impacts were observed, and the linear segment was considered to retain its integrity of location, materials (including roadside refuse features), and setting. The Old Placerville Road segment was recommended eligible for listing in the National Register by Hall and Lindström (1996), however SHPO concurrence is unknown.

Present intensive inventories of the Old Pioneer Trail identified approximately 270 feet of the road segment within the Project APE. Evidence of the road segment is not discernable past the shoulder of Pioneer Trail towards Vandorhoff Court to the east, or past the APE boundary towards the Tahoe Furs store to the south. The level road grade was narrower than previously recorded measuring approximately 15 to 18 feet across. The northwestern 160-foot portion of visible road was devoid of trees; however, vegetation was encroaching onto the sides of the road. The southern 110-foot portion of the road was completely covered by low shrubs and young trees. Colluvial erosion from the eastern upslope side of the road was covering sections of the segment throughout its length. Overall, the segment is well defined albeit lightly impacted by erosion and vegetation encroachment.

New rodent holes, a lack of tall vegetation, and colluvial erosion exposed what appeared to be a mix of historic and modern refuse. No singular concentrations of refuse were observed along the segment but instead a somewhat even scatter of broken glass, sanitary cans, metal scraps, and ceramic sherds were evident throughout the roadbed and colluvium. The mixed refuse in the area exhibits a range in dates that the artifacts were created and used.

The majority of glass observed was broken without evidence of seam types or intact bases. One potentially historic intact bottle was recorded containing a Hazel-Atlas Glass Co. makers mark on the base. The clear, screw top bottle could be dated between 1923 and 1982 (Lockhart et al. 2012). Other intact bottles were modern beer bottles. Observed glass fragments were of many colors including white milkglass, aqua, green, brown, clear, and cobalt blue. Aqua glass can be dated between the 1800s to 1920s (Horn 2005). The other observed glass colors exist within a wide range from the late 1800s to the present making it difficult to distinguish when the material was deposited. Observed crimped seam sanitary cans showed evidence of being opened with either church keys or can openers but contained no other diagnostic features. These cans could date anywhere from 1904 to the present (Mammot 2015:8). Ceramic sherds observed consisted of white improved earthenware with no visible makers marks. This type of ceramic has been produced from the 1800s to the present (Mammot 2015:10).

Project-related construction activities that will occur near the Old Pioneer Trail include road grading within the ROW, staging, construction of a new multi-use path alignment, and the placement of new streetlights adjacent to the path. Although it is outside the extent for grading, proposed activities in proximity to this segment of the Old Pioneer Trail have the potential to be affect the resource.

2.0 METHODS

One cultural resource (a segment of the Old Pioneer Trail, 05190000026) shall be designated as an environmentally sensitive area (ESA) for the purpose of this Project. Proposed construction activities (the roundabout, utilities, and vegetation clearing) occur near the Old Pioneer Trail but do not directly intersect the site's boundaries. The segment of this cultural resource located within the APE was found to be within the area where construction staging has the potential to affect historic properties; therefore, this resource will be designated as an ESA for the purposes of the current Project.

The ESA location will be depicted on the Project plans and physical ESA barriers will be placed at the ESA location (**Appendix A, Figure 4 and Appendix B**). Due to the location of the cultural resources and proposed Project construction, one type of ESA demarcation will be utilized:

- Temporary Fence (type ESA) will be installed just outside of known site boundaries to delineate the extent of the ESA at all locations. Laminated "Keep Out" signs will be posted along ESA fencing in 20-meter intervals to indicate area is off-limits.

An ESA will be established by way of ESA barriers erected prior to construction activities, through depiction on Project plans and in the contract Standard Special Provisions (SSPs) 14-1.02:

- The ESA boundaries shown on the plans are approximate. The County will mark the boundaries of the ESA on the ground, prior to the start of construction.
- Do not enter an ESA unless authorized.
- If an ESA is breached, immediately:
  1. Stop all work within 60 feet of the ESA boundary
  2. Secure the area
  3. Notify the Engineer
- If an ESA is damaged, the County in consultation with Caltrans and the Office of Historic Preservation, will determine the necessary remediation and the party to perform the work. The County will deduct the cost for this work from the contract.
- Temporary Fence (Type ESA) must comply with Section 80.

The ESA will protect the site from construction activities related to this Project. Temporary high visibility ESA barrier fencing will be placed along site boundaries within the APE to demarcate the ESA. The ESA will be established through depiction on Project plans. Prior to the Project construction start date, the Project Archaeologist(s) will meet with the Project Manager, Project Engineer, Owner's Construction Inspector, Contractor, and any responsible parties who will be working on the Project near the ESA to discuss the significance and necessity of protection and avoidance of the cultural resource in the APE. Personnel will be informed of the historic preservation laws protecting historic properties against any disturbance or removal of artifacts. No Project-related construction activities (ground disturbance, access, maintenance, equipment parking/storage, staging, etc.) shall take place within the ESA. On a weekly basis, either the Project Archaeologist(s) will inspect or the Owner's Construction Inspector will report to the Project Archaeologist(s) on the condition of the ESA fencing and provide dated photographic evidence that the ESA fencing and cultural resource has not been disturbed.

It is Caltrans' policy to avoid cultural resources whenever possible. If previously unidentified 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 archaeological survey will be needed if Project limits are extended beyond the present survey limits. Should human remains be encountered, work must cease in the immediate area and the contractor must immediately report the finding to Caltrans, the County Coroner, California OHP, the appropriate tribal entities, and other designated officials.

3.0 RESPONSIBLE PARTIES

The following section and tables identify the appropriate personnel who are responsible parties and aspects of the plan they are responsible for.

The Project Archaeologist(s) will be responsible for providing the Project Manager, Project Engineer, and Owner's Construction Inspector with the information and conditions outlined in the ESA Action Plan.

Either the Project Manager, Project Engineer, or Owner's Construction Inspector will be responsible for contacting the Project Archaeologist(s) and notifying them of pre-construction meeting times and dates so that the Project Archaeologist(s) can discuss the ESA and non-renewable nature of cultural resources with other responsible parties.

The Project Archaeologist(s), in consultation with the Project Manager and Project Engineer will be responsible for delineating the ESA location prior to the construction start date. A Temporary Fence (type ESA) will be erected by the Contractor under the direction of the Project Archaeologist(s) prior to any Project work in the vicinity of the ESA. The Project Archaeologist(s) shall be notified at least two weeks prior to any Project work in order to confirm schedule availability for ESA delineation and Temporary Fence installation or removal.

Table 1. ESA Action Plan: Tasks and Responsible Parties.

Stage	Task	Responsible Party	Task Completed (date and initial)
Prior to Construction	The ESA for site 05190000026 will be clearly described and depicted on design plans to guide construction of the Project (see **Appendix B**).	Project Archaeologist(s), Project Manager, and Project Engineer	
	A copy of the ESA Action Plan will be kept at the construction site with the Owner's Construction Inspector. The ESA will be discussed during the pre-construction meeting. The importance of the ESA will be discussed with construction personnel and it will be stressed that no construction activity (including storing or staging of equipment or materials) should occur within the ESA and that workers must remain outside of the ESA at all times. Construction personnel will be informed of historic preservation laws that protect archaeological sites against any disturbance or removal of artifacts.	Project Archaeologist(s)*, Construction Project Manager, Resident Engineer, Owner's Construction Inspector*, and Contractor	

Table 1. ESA Action Plan: Tasks and Responsible Parties.

Stage	Task	Responsible Party	Task Completed (date and initial)
	The Project Manager or Project Engineer will notify the Project Archaeologist(s) or Owner's Construction Inspector prior to the start of construction to ensure that they will be available to monitor ESA fence installation and allow for a field review of ESA location as the first order of work.	Construction Project Manager*, Resident Engineer, Project Archaeologist(s), and Owner's Construction Inspector	
	Temporary plastic fencing will be installed by the Contractor along the ESA in the vicinity of site 05190000026 at least one week prior to initiating any work in those areas (see **Appendix B**). The Project Archaeologist(s) will coordinate this activity with the Caltrans Cultural staff, the Owner's Construction Inspector, and Project Engineer and be present to supervise and monitor fence installation. Laminated "Keep Out" signs will be posted along ESA fencing to unmistakably indicate that the plastic fencing marks areas that are off-limits.	Resident Engineer, Project Archaeologist(s)*, Caltrans Cultural staff, and Owner's Construction Inspector	
During Construction	Project Archaeologist(s) or Owner's Construction Inspector will inspect the ESA weekly to verify no prohibited activities occurred within its boundaries. Dated photographs will be taken as evidence.	Project Archaeologist(s), and Owner's Construction Inspector	
	Project Archaeologist(s) will notify Caltrans (who will notify SHPO) within 48 hours of any ESA breach and consult immediately to determine how the breach will be addressed.	Project Archaeologist(s)	
After Construction	The Owner's Construction Inspector, Project Engineer, and/or Project Manager will inform the Project Archaeologist(s) when construction is finished.	Project Archaeologist(s) Resident Engineer, Construction Project Manager, and Owner's Construction Inspector	

Table 1. ESA Action Plan: Tasks and Responsible Parties.

Stage	Task	Responsible Party	Task Completed (date and initial)
	The Contractor, under supervision of the Owner's Construction Inspector and/or Project Archaeologist(s), will remove temporary fencing at the conclusion of construction. The Project Engineer and/or Project Manager will notify the Project Archaeologist(s) and the Caltrans Cultural staff at least three working days ahead of fencing removal. Fencing removal will only occur during daylight hours.	Construction Project Manager, Project Archaeologist(s), Caltrans Cultural staff, Owner's Construction Inspector, Resident Engineer, and Contractor	

*Main responsible party

Table 2. Responsible parties as of April 2020.

Title	Contact	Phone number
Project Manager	Angela Hueftle	(775) 772-1847
Project Archaeologist	Molly Laitinen	(408) 823-4570
Project Archaeologist	Jeremy Hall	(775) 354-9860
Project Engineer	Sean Teeter	(775) 329-4955
Construction Project Manager	to be named	
Resident Engineer	to be named	
Owner's Construction Inspector	to be named	

4.0 REFERENCES CITED

Community Development Agency
2017 Interoffice Memorandum. *Traffic Operations Analysis for US 50/Pioneer Trail*. December 28, 2017. On file with the County of El Dorado, South Lake Tahoe, CA.

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2005 *Historic Artifact Handbook*. Alpine Archaeologists Consultants, Inc., Montrose, Colorado.

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2020 Archaeological Survey Report for the Pioneer Trail/US 50 Intersection Safety Improvement Project, El Dorado County, California. Report prepared by NCE on behalf of El Dorado County. Submitted to Caltrans District 3.

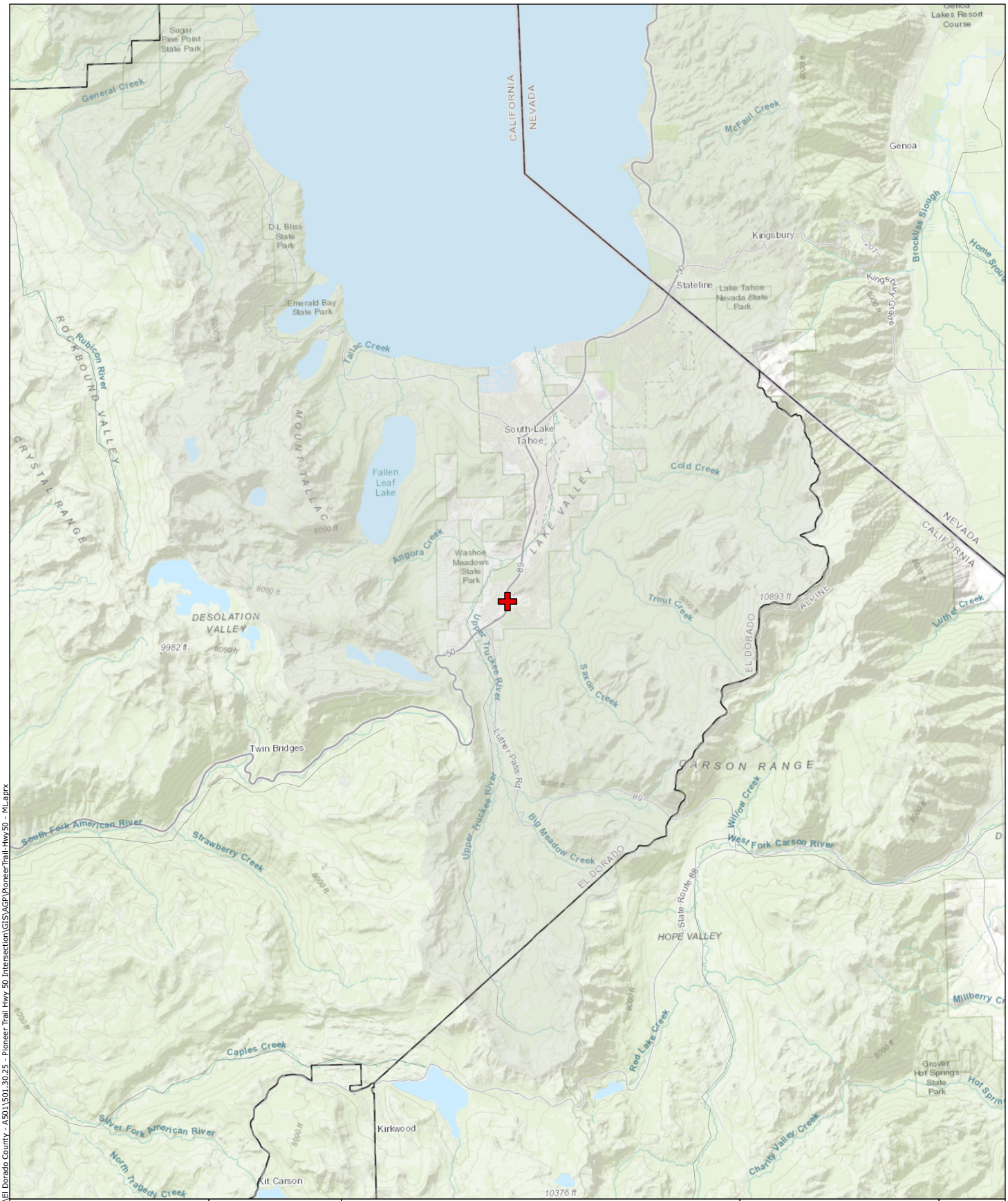
Lockhart, Bill, Bill Lindsey, Carol Serr, Pete Schulz, and Beau Schriever
2012 *Manufacturer's Marks and Other Logos on Glass Containers*. U.S. Department of Interior Bureau of Land Management Bottle Research Group, Klamath Falls, Oregon.

Mammott, Margo
2015 *What Can It Be, A Practical Workshop on Tin Can Identification and Analysis*. Paper Presented at the Nevada Archaeological Association 44th Annual meeting, Wendover, Nevada, March 27, 2015.

Tahoe Regional Planning Agency (TRPA)
2002. Plan Area Statements, 123 – Meyers Forest. Amended 5/22/2002. On file with the County of El Dorado, South Lake Tahoe, CA.
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Appendix A

FIGURES



Legend

- Project Location
- County Boundary

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California

03-ED-50, P.M. 71.48, EA 2H610, E-FIS 0317000163

Project Vicinity Map

N

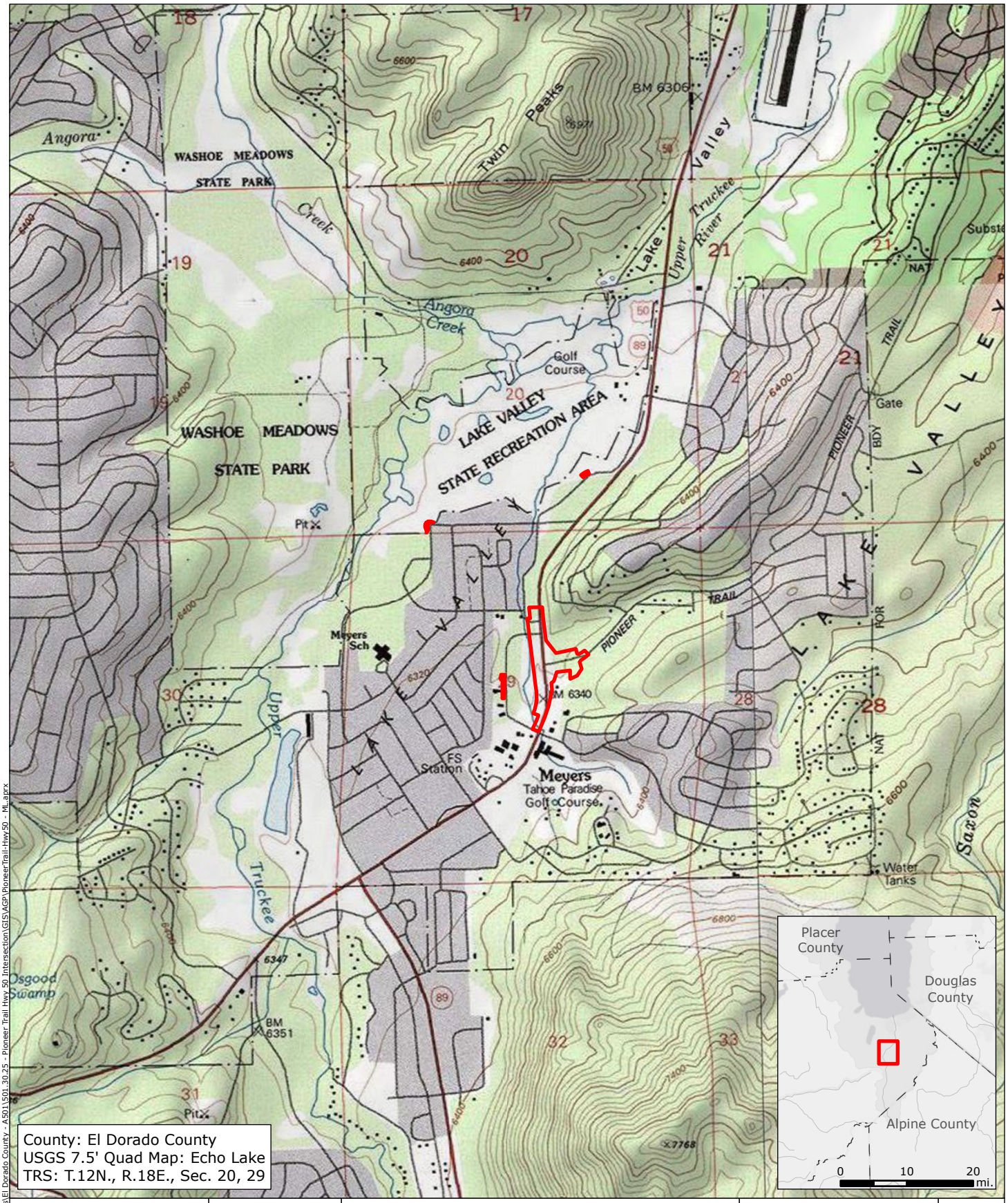
1 in. = 3 mi.

0 1 2 3 mi.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI World Topographic Basemap	501.30.25	mlaitinen	4/24/2020	-	ahueftle

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - MLaprx



Legend

Area of Potential Effect

NCE

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California

03-ED-50, P.M. 71.48, EA 2H610, E-FIS 0317000163

Project Location Map

N

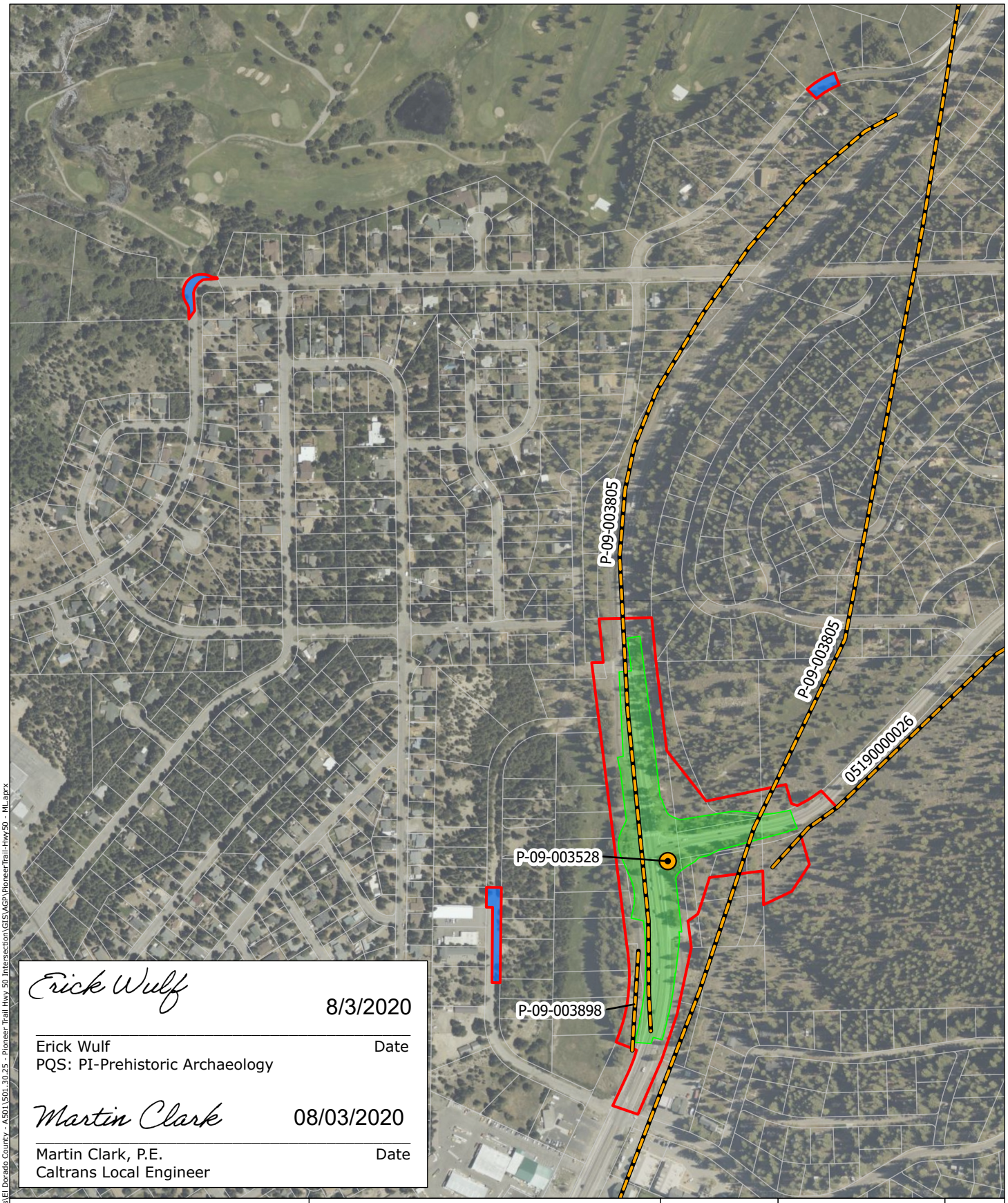
1:24,000

0 1,000 2,000 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USGS Topo Maps	501.30.25	mlaitinen	6/27/2019	6/3/2020	drios/jhall

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx



Erick Wulf 8/3/2020

Erick Wulf Date
PQS: PI-Prehistoric Archaeology

Martin Clark 08/03/2020

Martin Clark, P.E. Date
Caltrans Local Engineer

Legend

- APE
- Staging Area
- Grading Extent
- Parcel Boundary
- Historic Linear Feature
- Historic Point Feature

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California, 03-ED-50
P.M. 71.48, EA 2H610, E-FIS 0317000163
Area of Potential Effect (APE) Map

N

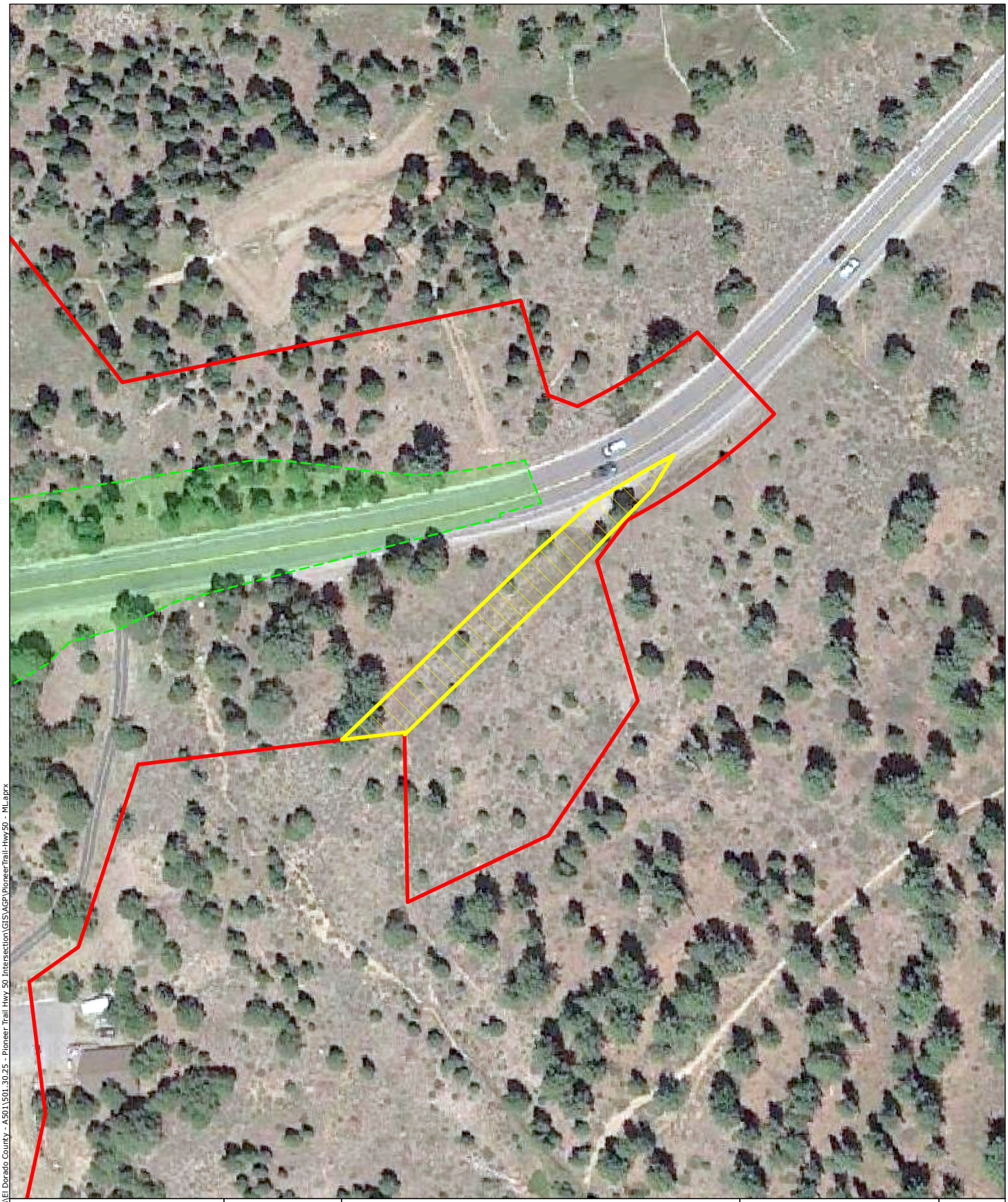
1 in. = 500 ft.

0 500 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Hybrid, NCIC, USFS	501.30.25	mlaitinen	6/27/2019	7/28/2020	ahueftle

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx



Legend

- APE
- Improvements Extent
- ESA Boundary

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California, 03-ED-50

P.M. 71.48, EA 2H610, E-FIS 0317000163

Environmentally Sensitive Area (ESA) Map

N

1 in. = 100 ft.

0 50 100 ft.

FIGURE 4

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Earth Imagery 2018, El Dorado County	501.30.25	mlaitinen	4/17/2020	6/3/2020	ahueftle

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - ML.aprx

Appendix B

Preliminary Design Plans

034-401-011
CALIFORNIA &
NIA TAHOE
RVANCY

034-401-022
CALIFORNIA TAHOE
CONSERVANCY

LCD 1B
(SEZ)

LCD 5

034-401-018
UNITED STATES OF
AMERICA & U S
FOREST SERVICE

034-401-024
LOGAN, JEFFREY
& NITA

034-401-020
UNITED STATES OF
AMERICA & U S
FOREST SERVICE

034-401-025
LOGAN, JEFFREY
& NITA

034-401-021
CALIFORNIA TAHOE
CONSERVANCY

034-592-009
CALIFORNIA TAHOE
CONSERVANCY

034-270-030
A & S
ARCHITECTURAL LLC

6315
6320
6325
6330
6310

D1
D2
D3
D4
D5

US 50

LCD 1B
(SEZ)
LCD 5

LCD 1B
(SEZ)
LCD 5
LCD 4

034-270-055
STATE OF CALIFORNIA &
CALIFORNIA TAHOE
CONSERVANCY

034-270-023
STATE OF CALIFORNIA &
CALIFORNIA TAHOE
CONSERVANCY

LCD 5
LCD 1B
(SEZ)

034-270-060
STATE OF CALIFORNIA

034-270-056
STATE OF CALIFORNIA
& CALIFORNIA TAHOE
CONSERVANCY

034-270-041
STATE OF CALIFORNIA &
CALIFORNIA TAHOE
CONSERVANCY

034-270-039
STATE OF CALIFORNIA &
CALIFORNIA TAHOE
CONSERVANCY

034-270-044
CALIFORNIA TAHOE
CONSERVANCY

034-270-046
HALL, STEVEN R

LCD 1B
(SEZ)
LCD 5

034-270-040
STATE OF CALIFORNIA &
CALIFORNIA TAHOE
CONSERVANCY

034-270-047
CALIFORNIA TAHOE
CONSERVANCY

034-270-046
HALL, STEVEN R

PIONEER TRAIL

N

80 0 80 160

SCALE IN FEET
1" = 80'-0"

LEGEND

- LCD BOUNDARY
- WOUS
- SEZ
- PARCELS TO AVOID
- PERMANENT EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- RIGHT OF WAY ACQUISITION
- TREE REMOVAL
- TREE REMOVAL (DIAMETER ≥ 30")

NCE
1885 S. Arlington Ave.,
Suite 111
Reno, NV 89509
(775) 329-4955

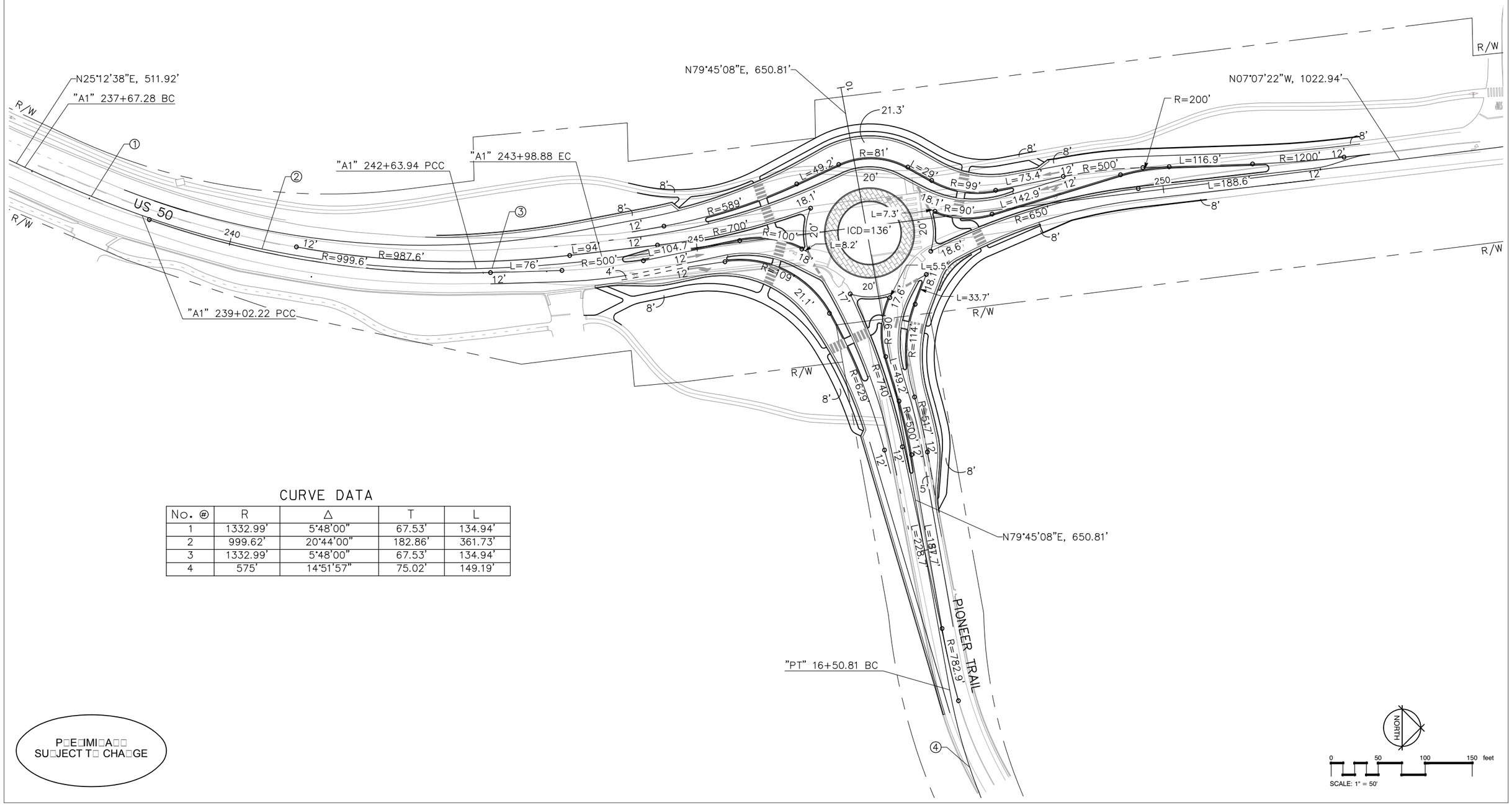
PIONEER TRAIL HIGHWAY
50 INTERSECTION
PRELIMINARY DESIGN

FIGURE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SPT	501.30.25		07-30-2020	

File: P:\Active Projects\El Dorado County - ASO\501.30.25 - Pioneer Trail Hwy 50 Intersection\CAD\Exhibits\10 Current Design\07242020 Preliminary Design.dwg | Layout: Layout1 | Printed: Jul 30, 2020 @ 11:32am | 0.07.22.0s (LMS Tech)

Geometric Approval Drawing



CURVE DATA

No. ⊛	R	Δ	T	L
1	1332.99'	5°48'00"	67.53'	134.94'
2	999.62'	20°44'00"	182.86'	361.73'
3	1332.99'	5°48'00"	67.53'	134.94'
4	575'	14°51'57"	75.02'	149.19'

P□E□IMI□A□□
SU□JECT T□ CHA□GE

NORTH

0 50 100 150 feet

SCALE: 1" = 50'

Pioneer Trail/US50 Intersection Safety Improvement Project

Meyers, California

GHD Inc.
943 Reserve Drive, □□i□ □□□
Roseville, CA 95678 USA
T 1 916 782 8688 W www.ghd.com

June 25, 2020 2610EX009.dwg

Appendix C

Site 05190000026 Photo Log
(sensitive material redacted for public distribution)

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APPENDIX G

GEOTECHNICAL REPORT

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Geotechnical Investigation

Pioneer Trail/US 50 Intersection Safety Improvement Project

El Dorado County, California

July 9, 2020

Prepared for
NCE

Prepared By
Corestone Engineering, Inc.
1345 Capital Blvd, Suite B
Reno, Nevada 89502-7140
(775) 636-5916

CORESTONE ENGINEERING, INC.
Geotechnical Services & Construction Materials Testing

Ms. Angie Hueftle, P.E.
NCE
1885 South Arlington Ave #111
Reno, NV 89509

July 9, 2020
Project No.: 5012-04-1

L

RE: Geotechnical Investigation
Pioneer Trail/US 50 Intersection Safety Improvement Project
El Dorado County, California

Dear Ms. Hueftle:

Corestone Engineering, Inc. is pleased to present the results of our geotechnical investigation for the above-referenced project. Our investigation consisted of research, field exploration, laboratory testing, and engineering analysis to allow formulation of geotechnical conclusions and recommendations for design and construction of the proposed safety improvement project.

The project will involve the design and construction of safety improvements at the intersection of Pioneer Trail and US Highway 50 via changing the current signalized intersection into a roundabout and adding other associated features. Drainage improvements will also be part of the project.

The subgrade and subsurface soils at the project site are exclusively granular silty sands underlain by decomposed granitic bedrock materials which will provide excellent support for the proposed roadway improvement project. A full depth asphalt concrete structural section is considered appropriate for the pavement rehabilitation/reconstruction associated with the project to support the traffic loading. We calculated 0.95 feet of a full depth asphalt concrete section for the roundabout and US 50 Highway legs.

We appreciate having the opportunity to work with you on this project. If you have any questions regarding the content of the attached report, please do not hesitate to contact us.

Sincerely,
Corestone Engineering, Inc.

DRAFT

Vimal P. Vimalaraj, P.E., G.E.
President

DRAFT

Jonathan Payne, P.G.
Project Geologist

Copies to: Addressee (PDF and 3 copies)

JP:PV:cjr

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1.0 Introduction

Presented herein are the results of Corestone Engineering, Inc.'s (CEI's) geotechnical investigation, laboratory testing, and associated geotechnical design recommendations for the safety improvement project to be located at and near the intersection of United States (US) Highway 50 and Pioneer Trail in in El Dorado County, California. These recommendations are based on surface and subsurface conditions encountered in our explorations and on details of the proposed project as described in this report. The objectives of this study were to:

1. Determine existing structural sections of the roadway and general soil and groundwater conditions pertaining to design and construction of the proposed safety improvement project.

2. Provide recommendations for design and construction of the project, including pavement structural section design, as related to these geotechnical conditions.

Our investigation included field exploration, laboratory testing, and engineering analysis to determine the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report and form the basis for all conclusions and recommendations.

The services described above were conducted in accordance with the Master Subconsultant Agreement No. SC211-17 between NCE and CEI dated March 1, 2017, and NCE's work authorization for the project dated July 10, 2019.

2.0 Project Description

2.1 Project Location and Existing Facilities

The proposed project alignment extends approximately 750 feet north and south of Pioneer Trail along US Highway 50 and from US Highway 50 approximately 750 feet northeast along Pioneer Trail. The site is entirely contained in Section 29, Township 12 North, Range 18 East, Mount Diablo Meridian in El Dorado County (the County), California. The site is located within forested land, with a residential area northwest of the project limits, a single retail building southeast of the intersection of US Highway 50 and Pioneer Trail, and a gas station/convenience store at the southern end of the project limits. The approximate latitude and longitude of the project site at the intersection is 38.8595 and -120.0121, respectively, from Google Earth™.

2.1 Proposed Project Details

The project will consist of safety improvements at and near the intersection of Pioneer Trail and US Highway 50 in the Meyers community area. The safety improvements will change the current signalized intersection into a roundabout. As part of this, various street modifications/widening as well as associated improvements including Portland cement concrete (PCC) sidewalks, curbs and gutters, storm drain features, lighting, and landscape areas are expected at the intersection and also extending about 500 to 750 feet along the alignment of US Highway 50 (both ways) and Pioneer Trail.

The intersection will include a dedicated westbound lane as well as a yield westbound lane which enters into the roundabout with the option to turn left onto Pioneer Trail southbound or to merge into US Highway 50 westbound. The intersection will also include right turn lanes from US Highway 50 eastbound onto Pioneer Trail southbound and also from Pioneer Trail northbound onto US Highway 50 eastbound. The roundabout itself will have a single lane. Beyond the limits of the roundabout, both US Highway 50 and Pioneer Trail will be 2-lane roadways but US Highway 50 will include a center lane which will transition to a center median near the roundabout.

The project design will be in accordance with the County's applicable standards, California Department of Transportation (Caltrans) design methods/standards, and Tahoe Regional Planning Agency (TRPA) ordinances. The improvements at the intersection and along US Highway 50 will be located within the Caltrans right-of-way; as such, Caltrans standards will be applicable, including the design of flexible pavements within the proposed roundabout and US Highway 50 legs of the roundabout. The Pioneer Trail leg of the roundabout is located within the County's jurisdiction, and County standards are applicable.

3.0 Site Conditions and Regional Settings

3.1 Site Conditions

3.1.1 General Site Conditions

The project site includes 2-lane asphalt concrete paved roadways and a signalized intersection. A signalized crosswalk crosses US Highway 50 east-west at the north side of the intersection. Pioneer Trail includes a left turn lane at the intersection with US Highway 50 and has PCC curbs and gutters along its entire length and a storm drain drop inlet at the southeast corner of the intersection with US Highway 50. US Highway 50 has a center turn lane from approximately Arapahoe Street to about 400 feet south of Pioneer Trail. The center lane serves southbound left turns to Pioneer Trail, northbound left turns to Arapahoe Street, and southbound left turns to a retail business. A right turn lane serves northbound US Highway 50 traffic to Pioneer Trail. Gravel shoulders are utilized along US Highway 50 north of Pioneer Trail. South of Pioneer Trail, US Highway 50 includes PCC curbs and gutters along the entire northbound lane and the southern portion of the southbound lane. Within the intersection, US Highway 50 southbound has gravel shoulders.

The topography across the alignment slopes west towards Lake Tahoe. Pioneer Trail slopes gently to moderately west, and US Highway 50 slopes gently along its centerline.

Underground utilities, including sanitary sewer, water and communications, are present within the streets and right-of-way. Sewer is present within the western half of the site, while communications and water are present throughout the site.

The overall site is located within a pine forest with mature pine trees.

3.1.2 Pavement Conditions

Pavements along US Highway 50 are in fair condition. Slurry seals are beyond their useful life, and the surface pavement exhibits high wear of coarse aggregates/significant raveling of the surface course. Moderate transverse cracking (20- to 40-foot spacing) is present and was about 30 to 40 percent filled during our pavement conditions assessment. Moderate, isolated failures (fatigue cracking) are more prominent within the southbound lanes. The northbound right turn lane to Pioneer Trail has been repaved, as have several small utility patches.

Pavements along Pioneer Trail are in poor condition adjacent to the intersection and are fair throughout the remaining alignment. Some slurry seal was still present, and the surface course exhibits moderate wear. Transverse cracking is present (20- to 60-foot spacing) and was about 50 to 60 percent filled during the assessment. Minor wheel path distress (cracks, rutting) is present within the eastern end of the alignment.

3.2 Regional Geology and Seismicity

The project is located in the Tahoe Basin of the Sierra Nevada mountains. The Tahoe Basin is within the Sierra Nevada Batholith consisting of mainly massive, Cretaceous age granitic rock subsequently overlain by Tertiary age volcanic and volcaniclastic rock. Within late Tertiary and Quaternary time, Basin and Range style extensional regional faulting has extended into the Sierra Nevada, and the Tahoe Basin is a fault-bounded basin at the western edge of Basin and Range faulting. The current landscape has been shaped by an extensive Pleistocene age glacial history and continues to be shaped by fluvial and lacustrine processes and active faulting. Because of its geological settings, the Tahoe Basin has a high potential for strong seismic shaking.

4.0 Exploration

4.1 Drilling

Prior to drilling exploration, CEI obtained a well/drilling permit from the El Dorado County Environmental Management Department and encroachment permits from Caltrans and the County. We also obtained utility clearance for public utilities within the streets via contacting Utility Service Alert, and we reviewed Caltrans as-built plans in selecting the exploration locations. Finally, CEI subcontracted a private utility locator to verify the exploration locations were not in conflict with any underground utilities. The explorations were completed in night shifts per our coordination with Caltrans, and explorations within US Highway 50 required significant coordination with Caltrans including attendance of a pre-job meeting as well as coordination with other Caltrans active construction projects in the area.

The Pioneer Trail/US 50 Intersection Safety Improvement Project site was explored on October 6, 7 and 8 of 2019 by drilling 10 test borings, B-01 through B-10, and 15 pavement core holes, C-01 through C-15. The locations of the borings are shown on Plate 1 (Location of Borings Map). Within pavements, asphalt concrete was initially cored and removed. The borings were drilled using 4-inch-outside-diameter (O.D.), solid-stem augers, and core holes were drilled using 6-inch O.D., solid-stem augers, with a truck-mounted CME 55 soils sampling drill rig. The maximum depth of exploration was 11.5 feet below the existing ground surface. Upon completion of the exploration, borings and pavement core holes were backfilled with cement grout per permit requirements.

The native soils were sampled in place every 1.5 to 2.5 feet by use of a standard, 2-inch-O.D., split-spoon sampler driven by a 140-pound safety drive hammer with a 30-inch stroke operated with a rope and cathead. The number of blows to drive the sampler the final 12 inches of an 18-inch penetration (Standard Penetration Test - American Society for Testing and Materials [ASTM] D 1586) into undisturbed soil is an indication of the density and consistency of the material.

Groundwater levels were measured where encountered in the borings at the time of exploration.

4.2 Volatile Organic Compound Screening

During drilling exploration, a Rae Systems® MiniRAE Lite photoionization detector was used to detect volatile organic compounds (VOC). The maximum concentrations of each sample from the borings and pavement core holes were recorded. Table 2 (Existing Structural Section and Subgrade Soils) includes the maximum detected VOC for each test boring and core hole. It should be noted that the values from the field detection techniques should be considered approximate when used for qualitative assessment by others. The collected data provide

information on any needed additional measures, including areas where additional sampling and testing may be performed if the detected values exceed action limits.

4.3 Borehole Permeability Testing

Borehole permeability testing was completed at borings B-01, B-07 and B-08. The testing was completed at 5 feet depth in borings advanced to 5 feet depth. The test procedure followed the borehole percolation testing provided in the Riverside County *Low Impact Development BMP Design Handbook*. The infiltration tests were then calculated using the equation provided in the design handbook. The permeability test results are summarized in Table 1 (Permeability Test Results Summary).

TABLE 1 - PERMEABILITY TEST RESULTS SUMMARY

Borehole (B) Number	Test Depth (feet)	Tested Soil Type	Depth to Groundwater (feet)	Measured Permeability/Infiltration (inches/hour)
B-01	5	Silty Sand	NE*	1.70
B-07	5	Silty Sand	NE*	3.37
B-08	5	Silty Sand	NE*	0.019^

* Not encountered through 11.5 feet in any boring.
^The subsurface samples are not significantly different from materials encountered in B-07 except for the presence of cobbles. This measured permeability value may not represent the actual potentially faster permeability rate of subsurface soils. The measured value may have been affected by becoming filled with fines during setup.

4.4 Material Classification

A geologist examined and identified all soils in the field in accordance with ASTM D 2488 and the Caltrans (2010) logging manual. During drilling exploration, representative bulk samples were placed in sealed plastic bags and returned to Reno, Nevada, for testing. Additional soil classification was subsequently performed in accordance with ASTM 2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing, as described in the Laboratory Testing section. A soil classification chart is included in Appendix A-1 (USCS Soil Classification Chart). Logs of the test borings and pavement core holes are presented as Appendix A-2 (Boring Logs)

At this time, we have not included the Caltrans logs of test borings (LOTBs) for the project in this draft report with pending project alignment files. The LOTBs for the project will be provided by CEI under a separate cover and, depending on the deliverable timeline, LOTBs can also be incorporated with the final geotechnical report.

5.0 Laboratory Testing

All soils testing was conducted in general accordance with the standards and methodologies described in Volume 4.08 of the ASTM Standards and the California Test Methods (CTM), as appropriate. Laboratory testing was performed by Black Eagle Consulting, Inc. of Reno, Nevada.

5.1 Index Tests

Samples of each significant soil type were analyzed to determine their in-situ moisture content (ASTM D 2216), grain size distribution (ASTM D 422), and plasticity index (ASTM D 4318). The results of these tests are shown on Appendix B-1 (Index Test Results). Test results were used to classify the soils according to ASTM D 2487 and to verify field logs, which were then updated as appropriate. Classification in this manner provides an indication of the soil's mechanical properties and can be correlated with standard penetration testing and published charts (Naval Facilities Engineering Command, 1986) for use in pavement design and development of other geotechnical recommendations.

5.2 R-Value Tests

Three resistance value (R-value) tests (CTM 301) were performed on representative samples of subgrade soil that will be present along the pathway. Resistance value testing is a measure of subgrade strength and expansion potential and is used in design of flexible pavements. Results of the R-value tests are shown on Appendix B-2 (R-Value Test Results).

5.3 Laboratory Moisture-Density Relation Tests

Three moisture-density relation tests (ASTM D 1557/CTM 216) were performed on representative samples of the subgrade soils. The maximum density shown by this test is compared with field densities to determine the percent of relative compaction. The moisture density curve is included as Appendix B-3 (Compaction Test Reports).

5.4 Chemical Tests

Chemical testing was performed on representative samples of site subgrade soils to evaluate the site materials' potential to corrode steel and PCC in contact with the ground. The samples were tested for pH, resistivity, redox potential, soluble sulfates, and sulfides. The results of the chemical tests are shown on Appendix B-4 (Chemical Test Results). Chemical testing was performed by Silver State Analytical Laboratories of Reno, Nevada.

6.0 Site Geology and Subsurface Conditions

6.1 Site Geology

Mapping by the California Geological Society (CGS) indicates the site is located within Pleistocene age *Tahoe glacial deposits - Till* (Saucedo, 2005). These materials are described by the CGS as *unconsolidated bouldery till with distinct yellow-brown weathered matrix; preserved as larger moraines with more rounded and broader crests. Locally may include outwash deposits.* The site soils are generally consistent with the geologic map; however, cobbles and boulders are rare in the surficial soils.

6.2 Subsurface Soil Conditions

The soils profile throughout the site typically consists of silty sand, silty, clayey sand, and poorly graded sand soils with low to moderate amounts of gravel through the maximum depth of exploration, 11.5 feet beneath the existing grades. The site soils are brown to light reddish brown, moist to very moist, loose to dense, and contain about 10 to 35 percent non-plastic to low plasticity fines and 0 to 15 percent subrounded to rounded gravel. A cobble was encountered in boring B-08 near the ground surface.

Groundwater was not encountered during site exploration. Seasonal snowmelt will saturate the subgrade soils and potentially result in perched water layers during spring.

6.2 Pavement Structural Section and Subgrade Soils

The measured structural section and specific subgrade soil conditions encountered at the advanced borings within the roadway alignment are summarized in Table 2. Table 2 also shows the results of the R-value testing performed on the subgrade soils and the recorded maximum concentrations of VOC.

TABLE 2 – EXISTING STRUCTURAL SECTION AND SUBGRADE SOILS

Boring (B)/ Pavement Core (C) Number	Asphalt Concrete Thickness (inches)	Aggregate Base Thickness (inches)	Subgrade Soil Type (USCS[1])	Maximum VOC[2] Detected (ppm[3])
B-01	9.5	6.0	SM	0.2
B-02	5.0	4.0+3.0 RAB[4]	SM	0.2
B-03	11.5	6.0	SM	224.3
B-04	12.75	5.0	SM	2.6
B-05	14.0	0.0	SM	25.3

B-06	13.0	0.0	SM	1.2
B-07	NA[5]	NA	SM	0.4
B-08	NA	NA	SM	NT[6]
B-09	8.5	5.0	SM	3.2
B-10	14.0	0.0	SM	11.4
C-01	13.5	5.0 (Sand)	SM	2.2
C-02	10.5	6.0	SM	0.6
C-03	10.38	5.5	SM	42.4
C-04	11.0	3.0 RAB	SM	0.6
C-05	10.5	5.0	SM	2.1
C-06	13.0	4.0	SM	139.0
C-07	14.5	0.0	SM	90.1
C-08	12.5	5.5	SM	1.1
C-09	12.25	4.0	SM	0.5
C-10	12.25	7.0	SM	1.7
C-11	9.5	5.0	SM	1.5
C-12	7.5	6.0	SM	0.1
C-13	7.75	6.0	SM	1.3
C-14	10.5	3.5 (Sand)	SM	0.4
C-15	10.5	5.0	SM	1.1

[1] ASTM D-2488.
[2] Volatile organic compound screening performed using a Rae Systems® MiniRAE Lite photoionization detector.
[3] Parts per million.
[4] Recycled aggregate base; contains asphalt concrete grindings.
[5] Not applicable; boring located outside of pavement.
[6] Not tested.

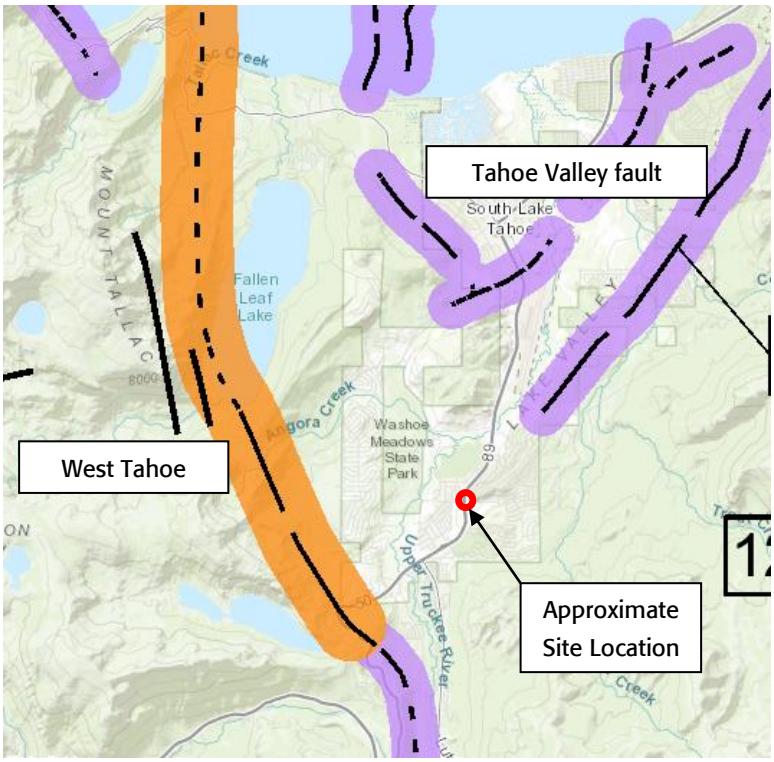
6.3 Groundwater

Groundwater was not encountered in the exploration which extended a maximum of 11.5 feet below the existing pavement grade. Boring B-10 encountered an isolated saturated soil layer about 5 feet beneath the existing pavement.

7.0 Geologic Hazards

7.1 Seismicity and Faults

The Lake Tahoe basin lies within an area with a high potential for earthquake shaking. It is generally accepted that a maximum credible earthquake in this area would be in the range of magnitude 7 to 7.5 along the Genoa fault system of the eastern Sierra Nevada. The most active segment of this fault system in the Tahoe area is located at the base of the eastern side of the mountains about 9 miles east of the project.



Fault Activity Map

No known faults are mapped through or in the immediate vicinity of the proposed roadway alignment (CGS, 2020a). The mapped faults in the general area of the project site are shown on the figure to the right. The nearest mapped fault is a Quaternary age (less than 1.6 million years old) fault segment associated with the Tahoe Valley fault zone and is mapped about 1.6 miles northeast of the project site. The nearest Holocene age fault is part of the West Tahoe – Dollar Point fault zone and is about 2 miles west of the site. This fault zone is also identified as an Alquist-Priolo Earthquake Fault Zone (EFZ) by the CGS (2020b). Because the site does not lie within an EFZ and no unmapped faults were suggested within the site during our investigation, no additional fault investigation or mitigation is considered necessary for the proposed project.

7.2 Ground Rupture

There are no known ground rupture locations within or in the general area of the project site. The absence of ground faults passing through or in the immediate vicinity of the site suggests the potential for ground rupture within the project site is negligible.

7.3 Ground Motion

The Caltrans *ARS Online* web-based tool was utilized in determining the design response spectrum for the site considering both deterministic and probabilistic acceleration spectra (Caltrans, 2020a). Based on the analysis, the peak ground acceleration for the site is 0.43 g.

7.4 Liquefaction

The site is overlain by dense soils underlain by bedrock at shallow depths, and groundwater is greater than 11.5 feet deep. Based on the subsurface materials characteristics, the potential for soil liquefaction at the project site is negligible.

7.5 Flood Plain

The Federal Emergency Management Agency (FEMA) has identified the site as lying in Zone AE, or within the limits of a 100-year flood plain with a base flood elevation of 6,301 to 6,304 feet above mean sea level within the vicinity of the Upper Truckee River crossing (FEMA, 2008).

7.6 Other Geologic Hazards

A moderate to high potential for dust generation is present if embankment construction is performed in dry weather.

The site is relatively flat; as such, no landslides should occur.

No other geologic hazards were identified.

8.0 Conclusions and Recommendations

The soils encountered in our exploration are exclusively sandy soils with adequate subgrade strength characteristics. These soils should cause minimal geotechnical-related concerns for the structural improvements of the proposed project. The following summarizes our conclusions:

- The site is overlain by granular sand soils which will provide adequate support for the proposed pavements and PCC flatwork.
- The soils beneath pavements in local areas at low elevations may be at over-optimum moisture content and difficult to compact; stabilization measures may be necessary in some limited areas.
- Based on our pavement design, we recommend full depth asphalt concrete structural sections consisting of 0.95 and 0.80 feet of hot-mix asphalt for pavements within US Highway 50 and Pioneer Trail, respectively.

Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this investigation. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and immediately reported to the client. No such substances were revealed during our exploration.

8.1 Flexible Pavement Design

The design of asphalt concrete (aka hot-mix asphalt [HMA]) pavement for the project was completed in accordance with the Caltrans *Highway Design Manual* ([*HDM*] Caltrans, 2020b). Pavement design is based on the volume of heavy truck traffic anticipated on the road as well as the axle loads of the trucks over the design life. All standard design methods require that this truck traffic be normalized to reflect the total number of equivalent 18-kip single-axle loads (ESALs) that will be applied to the pavement during its design life. The Caltrans *HDM* uses traffic index (TI) calculated based on ESAL.

8.1.1 Pavement Design Life

Per Section 612.2 of the Caltrans *HDM*, pavement design life for new construction and reconstruction projects shall be no less than 40 years (Caltrans, 2020b). However, because of the limited length of the roadways associated with the proposed safety improvement project, the project may be categorized as spot improvements that can be considered to be rehabilitation for the purpose of determining pavement design life. With this and based on our conversations with the design team and the County, we selected a pavement design life of 20 years for the flexible pavements on the project.

8.1.2 Subgrade Strength and Existing Structural Section

Laboratory subgrade strength testing was conducted on representative samples of the subgrade soil. The measured R-value varied from 48 to 78 for the silty subgrade soils encountered within the project limits. A conservative R-value of 48, which is the lowest measured R-value, was utilized in the design of flexible pavement.

The pavement design for the reconstruction/rehabilitation project should also consider the existing structural section along the roadways that are being improved. Table 2 provides the summary of the structural section (asphalt concrete and aggregate base) thicknesses encountered at each boring and coring location advanced within the roadways. The thickness of asphalt concrete or HMA along US Highway 50 varies between approximately 5 and 14.5 inches, and the average HMA thickness is about 11.5 inches (or 0.95 feet). The thickness of existing asphalt concrete or HMA along Pioneer Trail varies between approximately 7.5 to 14 inches, and the average existing HMA thickness is about 9.75 inches or (0.80 feet). The thickness of aggregate base is generally less than 6 inches within the roadways, and multiple exploration locations didn't reveal aggregate base. The significant variance in the HMA thicknesses within the roadways is due to multiple overlays associated with past rehabilitation projects. It is also noted that the existing HMA in these roadways at a majority of the exploration locations found the bottom 3 inches of the HMA section were severely disintegrated.

8.1.3 Traffic Data, ESAL and TI

In the project area, traffic counts from Caltrans are available for the US Highway 50 intersection with State Route 89 (US Highway 50 Milepost 70.621) west of the project location. No specific traffic data is available for the project location from Caltrans. The available Caltrans traffic data provide various information, including annual average daily traffic (AADT) counts of all traffic, truck AADT, and truck AADT based on axle numbers, for each leg of the intersection. Traffic data for the years 2013, 2015, 2016, 2017 and 2018 are provided.

In addition, a traffic operation analysis report prepared GHD of Roseville, California, was available for use in the flexible pavement design (GHD, 2019). The report includes design hourly volumes for the intersection that are based on modeling utilizing the 2017 traffic counts as well as other existing data. Friday summer peak hour volumes and Sunday summer peak hour volumes are provided in the report.

We utilized the Caltrans traffic data for the US Highway 50 section between State Route 89 and Pioneer Trail as well as traffic distribution at the US Highway 50 and Pioneer Trail intersection from the traffic operation analysis report to determine the design ESAL and then TI for the proposed roundabout and each leg of the roundabout. Caltrans data provide a maximum AADT of 14,700 for US Highway 50 in year 2018, and this AADT was used as the basis in the design. The results of the traffic loading calculations are summarized in Table 3 (Design Traffic Loading Summary), and detailed analysis calculations, including Caltrans traffic data, are presented in Appendix C.1 (Traffic Loading Calculations).

TABLE 3 – DESIGN TRAFFIC LOADING SUMMARY			
Street/Section	**Applicable AADT**	**Design ESAL[1]**	**Design TI[1]**
US 50/Pioneer Trail Roundabout	19,000[2]	5.42×10^6	11.0
US 50 Legs of the Roundabout	12,500[3]	3.56×10^6	10.5
Pioneer Trail Legs of the Roundabout	4,900[3]	1.40×10^6	9.5

[1] For 20-year design life. The ESALs are calculated based on truck traffic distribution and E20-year ESAL constants from Table 613.3A of the Caltrans *HDM* (Caltrans, 2020b)
[2] Cumulative value at the intersection.
[3] At the conservative design direction (one-way AADT).

8.1.4 Structural Section Design and Recommendations

We performed the pavement structural section design utilizing the TI for each section of roadway from Table 3 and the empirical design method of the Caltrans *HDM* (Caltrans, 2020b). Our analysis and recommendations also consider the existing HMA thicknesses within the roadways. The recommended structural sections for the project are summarized in Table 4 (Structural Section Recommendations), and the analysis calculations are contained in Appendix C.2 (Pavement Design Calculations). A full-depth HMA section is selected as the appropriate design alternate in order to approximately equal the existing average HMA thicknesses.

TABLE 4 – STRUCTURAL SECTION RECOMMENDATIONS		
Street/Section	**HMA[1] Thickness (feet)**	**Aggregate Base Thickness (feet)**
US 50/Pioneer Trail Roundabout	0.95	0 (Full Depth HMA)
US 50 Legs of the Roundabout	0.95[2]	0 (Full Depth HMA)
Pioneer Trail Leg of the Roundabout	0.80	0 (Full Depth HMA)

[1] Dense graded utilizing PG 64-28 binder.
[2] Calculated value is 0.9 feet for the TI, but thickness is slightly increased to meet the existing HMA thickness within US Highway 50.

8.1.5 Pavement Maintenance

Asphalt concrete pavements have been designed for the design life noted above. Due to the local climate and available construction aggregates, achieving the design life requires diligent maintenance. To achieve maximum

design life, maintenance must include regular crack sealing, seal coats, and patching as needed. Failure to provide thorough maintenance will significantly reduce pavement design life and performance.

8.2 Site/Subgrade Preparation and Stabilization

Site and subgrade preparation as well as any needed subgrade stabilization shall follow the applicable sections of the Caltrans *Standard Specifications* (Caltrans, 2018a) where not explicitly addressed in the following sections.

Site/Subgrade Preparation

All vegetation and debris (traction sand) shall be stripped and grubbed from structural areas and removed from the site. Trees and associated roots greater than ½ inch in diameter shall be removed, where necessary, to a minimum depth of 12 inches below finished grade. Large roots (greater than 6 inches in diameter) shall be removed to the maximum depth possible. Resulting excavations shall be backfilled with embankment fills compacted to 90 percent relative compaction per CTM 216.

Existing HMA within the project limits can be removed by either pulverizing or simply removal by heavy equipment. All other existing improvements within the project limits, including PCC sidewalks, curbs and gutters, should also be removed as necessary to accommodate the improvements associated with the project. At the edges of the existing improvements that are to remain in place, all pavements and PCC flatwork shall be saw-cut.

All exposed subgrade areas to receive additional roadway fills to accommodate any grade changes or structural loading shall be densified to at least 95 percent relative compaction per CTM 216. Scarification of exposed soils and moisture conditioning through 12 inches may be necessary for proper densification.

Stabilization

Beneath existing pavement and during wet weather construction, unstable, over-optimum soils may locally be encountered and these soils will be difficult to compact to the specifications. The subgrade soils encountered in our exploration are granular sandy soils; as such, in most cases moisture conditioning of these soils should be possible by scarifying the top 12 inches of subgrade and allowing it to air-dry to near optimum moisture prior to compaction. Where this procedure is ineffective or where construction schedules preclude delays, mechanical stabilization will be necessary. Mechanical stabilization can generally be achieved by removal of unstable soils through 12 to 18 inches depth and backfilling the over-excavation with recycled asphalt concrete base or Class 2 aggregate base (Caltrans, 2018a). The stabilizing fills shall be placed in maximum 12-inch-thick lifts that are densified to at least 95 percent relative compaction per CTM 216.

8.3 Materials and Compaction Requirements

Where not explicitly indicated in the following sections, the materials and compaction on the project shall follow the applicable sections of the Caltrans *Standard Specifications* (Caltrans, 2018a).

Subsurface soils within the project site are granular sandy soils and will be suitable to reuse as structural fill, base or embankment fill. Existing asphalt concrete may be pulverized to generate a 4 inch minus size recycled asphalt concrete product for use as structural fill or stabilizing fill. Existing aggregate base is also suitable to reuse as structural fill, subbase, or stabilizing fill. All structural fill, subbase, and stabilizing fill on the project shall be placed in maximum 8-inch-thick loose lifts, moisture-conditioned, and compacted to at least 95 percent relative compaction as determined per CTM 216.

Imported aggregate base shall consist of Class 2 aggregate base (Caltrans, 2018a) and should be compacted to at least 95 percent relative compaction per CTM 216.

The asphalt concrete should be dense graded utilizing PG 64-28 binder and should also meet Caltrans mix design specifications (Caltrans, 2018a).

8.4 Erosion Control

The project does not require any major new slopes. Based on our investigation, new embankment fill side slopes constructed at 2H:1V (horizontal to vertical) or flatter will be globally stable at the site up to the expected maximum height of 10 feet. Erosion protection via rip-rap or other methods should be considered for slopes steeper than 3H:1V.

8.5 Grading

The project will include minor grading to establish design grades for the improvements. Site grading and earthwork shall follow the Caltrans *Standard Specifications* (Caltrans, 2018a). Grading plans were not available for review at the time of this report, and CEI will provide any needed additional geotechnical recommendations in the final geotechnical report once grading plans become available for our review.

8.6 Trenching, Excavation and Utility Backfill

No significant cuts are expected on the project. Temporary trenches with near-vertical sidewalls should be stable to a depth of approximately 4 feet below the adjacent ground surface. Temporary trenches are defined as those that will be open for less than 24 hours. Excavations to greater depths should be sloped or shored in accordance with the State of California, Division of Occupational Safety and Health (Cal/OSHA) requirements. All site soils are Type

C and shall be sloped at 1.5H:1V or flatter in temporary excavations. All trenching should be performed and stabilized in accordance with local, state and Cal/OSHA standards.

The maximum particle size in trench backfill should be 3 inches. Bedding and initial backfill 12 inches over the pipe will require import and should conform to the requirements of the utility having jurisdiction. Bedding and initial backfill should be densified to at least 90 percent relative compaction per CTM 216. Native soils will provide adequate final backfill and should be placed in maximum 8-inch-thick loose lifts that are compacted to a minimum of 90 percent relative compaction in all structural improvements associated with the project.

8.6 Concrete Flatwork

All PCC flatwork on the project shall be per the Caltrans *Standard Plans* (Caltrans, 2018b) and should be directly underlain by Class 2 aggregate base densified to at least 95 percent relative compaction (CTM 216).

All placement and curing of concrete shall be performed in accordance with procedures outlined by the American Concrete Institute (2011). Special considerations should be given to concrete placed and cured during hot or cold weather conditions. Proper control joints and reinforcement should be provided to minimize any damage resulting from shrinkage.

Concrete shall not be placed on frozen in-place soils.

8.7 Corrosion Evaluation

Corrosion testing was completed on a representative sample obtained from test borings at the site. Corrosion test results are summarized in Table 5 (Corrosion Test Results Summary), and detailed results are contained in Appendix B-4.

TABLE 5 – CORROSION TEST RESULTS SUMMARY

Sample Identification	Depth (feet)	pH	Minimum Resistivity (ohm-cm)	Sulfate Content (ppm)	Sulfide Content (ppm)
B-03 Bulk	1.0 -10	5.91	2,700	49	Negative
B-06 Bulk	1.5 - 10	6.51	5,300	65	Negative

Based on the test results and Caltrans Corrosion Guidelines, the soils are non-corrosive to structural steel and concrete foundation elements in contact with soils. It is noted that the test results are only an indicator of soil

corrosivity, and a corrosion engineer may need to be consulted if the values in Table 5 or Appendix B-4 signify such a need.

9.0 Construction Considerations

It is recommended that the geotechnical investigation report and subsequent addenda be included with project documents during the bidding process for reference purposes.

- Depending on the season of construction, soft, wet surface soils may make it difficult for construction equipment to travel and operate.
- Existing underground utilities are present within the project site. The project construction will require coordination with these utilities.
- All excavations required on this project should be achievable using typical construction equipment. On-site soils shall be sloped at 1.5H:1V or flatter in temporary excavations (for Type C soils). The contractor will be responsible for design and construction of excavation sloping and, if necessary, shoring in accordance with Cal/OSHA requirements, including the protection of existing structures, utilities and other facilities during construction.

10.0 Quality Control

All plans and specifications should be reviewed by the geotechnical engineer for conformance with this geotechnical report.

The recommendations presented in this report are based on the assumption that sufficient field testing and construction review will be provided during all phases of construction. We should review the final plans and specifications to check for conformance with the intent of our recommendations. Prior to construction, a pre-job conference should be scheduled to include, but not be limited to, the owner, architect, civil engineer, general contractor, earthwork and materials subcontractors, building official, and engineer. The conference will allow parties to review the project plans, specifications, and recommendations presented in this report and discuss applicable material quality and mix design requirements. All quality control reports should be submitted to and reviewed by the engineer.

During construction, we should have the opportunity to provide sufficient on-site observation of preparation and grading, over-excavation, fill placement, foundation installation, and paving. These observations would allow us to verify that the geotechnical conditions are as anticipated and that the contractor's work is in conformance with the approved plans and specifications.

11.0 Standard Limitations Clause

This report has been prepared in accordance with generally accepted geotechnical practices. The analyses and recommendations submitted are based on field exploration performed at the locations shown on Plate 1. This report does not reflect soils variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary. We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to ensure compliance with our recommendations.

Equilibrium water level readings were made on the date shown on the boring logs included as Appendix A-2. Fluctuations in the water table may occur due to rainfall, temperature, seasonal runoff and adjacent irrigation practices. Construction planning should be based on assumptions of possible variations in the water table.

This report has been produced to provide information allowing the architect or engineer to design the project. The client is responsible for distributing this report to all designers and contractors whose work is affected by geotechnical aspects. In the event there are changes in the design, location, or ownership of the project from the time this report is issued, recommendations should be reviewed and possibly modified by the engineer. If the engineer is not granted the opportunity to make this recommended review, he or she can assume no responsibility for misinterpretation or misapplication of his or her recommendations or their validity in the event changes have been made in the original design concept without his or her prior review. The engineer makes no other warranties, either express or implied, as to the professional advice provided under the terms of this agreement and included in this report.

12.0 References

American Concrete Institute, 2011, *ACI Manual of Concrete Practice: Parts 1 through 5.*

American Society for Testing and Materials (ASTM), 2018, *Soil and Rock (I and II),* Volumes 4.08 and 4.09.

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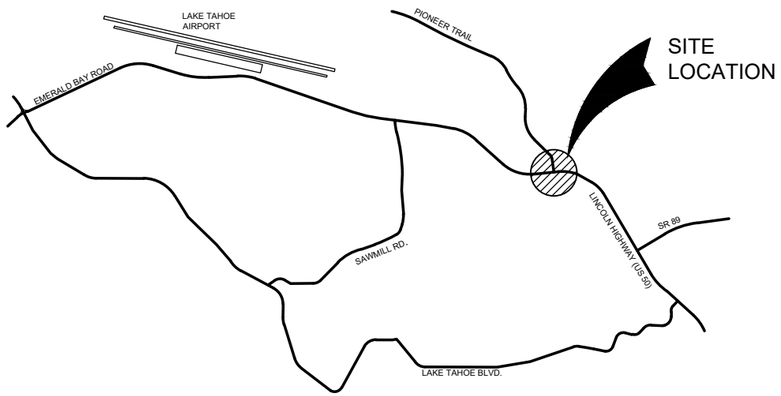
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PLATES



VICINITY MAP

N.T.S.

LEGEND

B-01 APPROXIMATE BORING LOCATION

C-01 APPROXIMATE PAVEMENT CORE HOLE LOCATION

NOTES

1. BASE MAP PROVIDED BY GOOGLE EARTH AND NCE

SCALE: 1"=100'

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NICHOLS CONSULTING ENGINEERS

PLOT PLAN

PIONEER TRAIL / US 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

EL DORADO COUNTY, CALIFORNIA

Project No.
5012-04-1

Plate 1

APPENDIX A

A-1 USGS SOIL CLASSIFICATION CHART

A-2 BORING LOGS

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTS

C	Consolidation (ASTM D 2435-04)
CL	Collapse Potential (ASTM D 5333-03)
CP	Compaction Curve (CTM 216 - 06)
CR	Corrosion, Sulfates, Chlorides (CTM 643 - 99; CTM 417 - 06; CTM 422 - 06)
CU	Consolidated Undrained Triaxial (ASTM D 4767-02)
DS	Direct Shear (ASTM D 3080-04)
EI	Expansion Index (ASTM D 4829-03)
M	Moisture Content (ASTM D 2216-05)
OC	Organic Content (ASTM D 2974-07)
P	Permeability (CTM 220 - 05)
PA	Particle Size Analysis (ASTM D 422-63 [2002])
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89-02, AASHTO T 90-00)
PL	Point Load Index (ASTM D 5731-05)
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value (CTM 301 - 00)
SE	Sand Equivalent (CTM 217 - 99)
SG	Specific Gravity (AASHTO T 100-06)
SL	Shrinkage Limit (ASTM D 427-04)
SW	Swell Potential (ASTM D 4546-03)
TV	Pocket Torvane
UC	Unconfined Compression - Soil (ASTM D 2166-06) Unconfined Compression - Rock (ASTM D 2938-95)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850-03)
UW	Unit Weight (ASTM D 4767-04)
VS	Vane Shear (AASHTO T 223-96 [2004])

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler
- Modified California Sampler
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

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REPORT TITLE: **BORING RECORD LEGEND**

DIST.	COUNTY	ROUTE	POSTMILE	EA
03	El Dorado	US 50	H	03-5012-04-1

PROJECT OR BRIDGE NAME: **Pioneer Trail/US 50 Intersection Safety Improvement Project**

BRIDGE NUMBER	PREPARED BY	DATE	SHEET
NA			1 of 2

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	Pocket Penetrometer (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	0.50 - 1.0	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	1.0 - 2.0	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N_{60} - Value (blows / foot)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Descriptor	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor		Size
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

NOTE: This legend sheet provides descriptors and associated criteria for required soil description components only. Refer to Caltrans Soil and Rock Logging, Classification, and Presentation Manual (July 2007), Section 2, for tables of additional soil description and identification.

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REPORT TITLE: **BORING RECORD LEGEND**

DIST.	COUNTY	ROUTE	POSTMILE	EA
03	El Dorado	US 50	H	03-5012-04-1

PROJECT OR BRIDGE NAME: **Pioneer Trail/US 50 Intersection Safety Improvement Project**

BRIDGE NUMBER	PREPARED BY	DATE	SHEET
NA			2 of 2

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-6-19**	**10-6-19**	**4305572.0 ft / 759235.0 ft WGS84**	**B-01**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**6.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 75% coarse to fine SAND; about 25% nonplastic fines.		A	7 6 6	12	56		10					M
	3				B	3 4 3	7	100							
	4														
	5				C	7 8 8	16	100							
	6														
	7		Bottom of borehole at 6.5 ft bgs												
	8		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	9														
	10														
	11														
	12														
	13														
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				**B-01**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-7-19	10-7-19	4305501.0 ft / 759252.0 ft WGS84	B-02
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
			AGGREGATE BASE and RECYCLED AGGREGATE BASE.												
	1		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 65 to 75% coarse to fine SAND; about 25 to 35% nonplastic fines.		A	7 8 5	13	89							
	2														
	3				B	4 6 9	15	89							
	4														
	5				C	3 2 4	6	89							
	6														
	7														
	8				D	4 4 6	10	89							
	9														
	10				E	4 5 6	11	89							
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-02
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-6-19	10-6-19	4305428.0 ft / 759253.0 ft WGS84	B-03
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.		A	9 9 9	18	89							M, PA, PI, R
	2		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 65% coarse to fine SAND; about 30% nonplastic fines.												
	3				B	8 10 8	18	89							
	4														
	5		SILTY SAND (SM/SM); loose; brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 75% medium to fine SAND; about 20% nonplastic fines.		C	5 2 4	6	89							
	6														
	7														
	8				D	2 3 3	6	56							
	9														
	10		SILTY SAND with GRAVEL (SM/SM); dense; light yellowish brown; moist; about 25% coarse to fine, subangular to subrounded GRAVEL; about 65% medium to fine SAND; about 10% nonplastic fines.		E	10 20 14	34	83							
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-03
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-7-19	10-7-19	4305356.0 ft / 759270.0 ft WGS84	B-04
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.		A										
	2		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 65% coarse to fine SAND; about 35% nonplastic fines.												
	3				B										
	4														
	5				C										
	6														
	7														
	8		SILTY SAND with GRAVEL (SM/SM); dense; light brown; moist; about 15% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse SAND; about 15% nonplastic fines.		D										
	9														
	10				E										
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-04
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-6-19**	**10-6-19**	**4305279.0 ft / 759270.0 ft WGS84**	**B-05**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**11.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 80% coarse to fine SAND; about 20% nonplastic fines.		A	9 10 10	20	100		8					CP, M
	2														
	3				B	7 10 10	20	100							
	4														
	5		SILTY SAND (SM/SM); medium dense; light gray to light brown; moist; about 50% medium to fine SAND; about 50% nonplastic fines.		C	6 12 13	25	100							
	6														
	7														
	8				D	9 13 14	27	100							
	9														
	10		Poorly graded SAND with SILT and GRAVEL (SP-SM/SP-SM); very dense; light yellowish brown; moist; about 25% coarse to fine, subangular to subrounded GRAVEL; about 65% medium to fine SAND; about 10% nonplastic fines.		E	24 40	64	100							
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				**B-05**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-7-19	10-7-19	4305221.0 ft / 759267.0 ft WGS84	B-06
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 2% coarse to fine, subangular to subrounded GRAVEL; about 63% coarse to fine SAND; about 35% nonplastic fines.		A	10 15 12	27	83							M, PA, PI, R
	2														
	3				B	8 5 6	11	100							
	4														
	5				C	10 11 15	26	100							
	6														
	7														
	8		SILTY SAND with GRAVEL (SM/SM); dense; light reddish brown; moist; about 25% coarse to fine, subangular to subrounded GRAVEL; about 60% coarse SAND; about 15% nonplastic fines.		D	13 16 17	33	100							
	9														
	10				E	14 19 16	35	100							
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-06
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305452.0 ft / 759276.0 ft WGS84**	**B-07**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**6.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); very loose to loose; light reddish brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.												
	1														
	2														
	3				A	3 2 1	3	89							
	4														
	5				B	2 2 3	5	100							
	6														
	7		Bottom of borehole at 6.5 ft bgs												
	8		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	9														
	10														
	11														
	12														
	13														
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				**B-07**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305431.0 ft / 759302.0 ft WGS84**	**B-08**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**6.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 3% coarse to fine, subangular to subrounded GRAVEL; about 77% coarse to fine SAND; about 20% nonplastic fines; Possible-cobble at 1 foot depth..												
	1														
	2														
	3				A	6 6 5	11	78							
	4														
	5				B	3 4 6	10	78							M, PA, PI
	6		Bottom of borehole at 6.5 ft bgs												
	7														
	8		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	9														
	10														
	11														
	12														
	13														
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				**B-08**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-8-19	10-8-19	WGS84	B-09
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY, CLAYEY SAND (SC-SM/SC-SM); medium dense to dense; light reddish brown; moist; about 3% coarse to fine, subangular to subrounded GRAVEL; about 76% coarse to fine SAND; about 22% low plasticity fines.		A	5 8 7	15	56							M, PA, PI, R
	3				B	8 6 6	12	89							
	4														
	5				C	5 5 6	11	89							
	6														
	7				D	6 8 10	18	89							
	8														
	9				E	13 17 19	36	89							
	10														
	11		Bottom of borehole at 11.5 ft bgs												
	12														
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-09
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-8-19	10-8-19	WGS84	B-10
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	11.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 0 to 10% coarse to fine, subangular to subrounded GRAVEL; about 70 to 80% coarse to fine SAND; about 15 to 25% nonplastic fines.		A	12 7 5	12	83		11					M
	2														
	3		Very loose.		B	3 1 1	2	100							
	4														
	5		Loose.		C	2 1 6	7	83							
	6														
	7														
	8		Medium dense to dense.		D	8 8 10	18	83							
	9														
	10				E	10 15 18	33	83							
	11														
	12		Bottom of borehole at 11.5 ft bgs												
	13		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	14														
	15														

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REPORT TITLE				HOLE ID
BORING RECORD				B-10
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-8-19**	**10-8-19**	**WGS84**	**C-01**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		LEVELING SAND.												
	2		SILTY SAND (SM/SM); medium dense; brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
	8														

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REPORT TITLE				HOLE ID
BORING RECORD				**C-01**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-8-19**	**10-8-19**	**WGS84**	**C-02**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); medium dense; brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-02**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-6-19**	**10-6-19**	**4305515.0 ft / 759246.0 ft WGS84**	**C-03**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		RECYCLED AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 10% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 20% nonplastic fines.		A			100		11					CP, M
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-03**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305464.0 ft / 759254.0 ft WGS84**	**C-04**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 80% coarse to fine SAND; about 20% nonplastic fines.		A			100		6					M
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-04**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305392.0 ft / 759265.0 ft WGS84**	**C-05**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		RECYCLED AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 10% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 20% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-05**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-6-19**	**10-7-19**	**4305375.0 ft / 759264.0 ft WGS84**	**C-06**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		RECYCLED AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 10% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 20% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-06**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305330.0 ft / 759269.0 ft WGS84**	**C-07**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 10% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 20% nonplastic fines.		A			100							
	2														
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				**C-07**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-7-19	10-7-19	4305300.0 ft / 759275.0 ft WGS84	C-08
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.												
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
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REPORT TITLE				HOLE ID
BORING RECORD				C-08
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305258.0 ft / 759273.0 ft WGS84**	**C-09**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); loose to medium dense; light reddish brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.												
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
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REPORT TITLE				HOLE ID
BORING RECORD				**C-09**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-7-19**	**10-7-19**	**4305240.0 ft / 759268.0 ft WGS84**	**C-10**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 20% coarse to fine, subangular to subrounded GRAVEL; about 60% coarse to fine SAND; about 20% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4														
	5														
	6														
	7														
	8														

This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.

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REPORT TITLE				HOLE ID
BORING RECORD				**C-10**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-9-19	10-9-19	WGS84	C-11
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND with GRAVEL (SM/SM); medium dense; brown; moist; about 15% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 15% nonplastic fines.		A			100		6					M
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
	8														

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REPORT TITLE				HOLE ID
BORING RECORD				C-11
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-8-19**	**10-8-19**	**WGS84**	**C-12**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
			AGGREGATE BASE.												
	1		Poorly graded SAND with SILT and GRAVEL (SP-SM/SP-SM); medium dense; brown; moist; about 30% coarse to fine, subangular to subrounded GRAVEL; about 60% coarse to fine SAND; about 10% nonplastic fines.		A			100							
	2														
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
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	8														

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1345 Capital Blvd., Suite B
Reno, NV 89502
ph. 775-636-5916

REPORT TITLE				HOLE ID
BORING RECORD				**C-12**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-8-19**	**10-8-19**	**WGS84**	**C-13**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
			SILTY SAND with GRAVEL (SM/SM); medium dense; light reddish brown; moist; about 25% coarse to fine, subangular to subrounded GRAVEL; about 60% coarse to fine SAND; about 15% nonplastic fines.		A			100		4					CP, M
	2														
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
	8														

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REPORT TITLE				HOLE ID
BORING RECORD				**C-13**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	**10-8-19**	**10-8-19**	**WGS84**	**C-14**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			**~0.00' Rt Sta ~NANA**	**NA NAVD88**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			**Automatic Hammer**	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			**NE**	**3.0 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
			AGGREGATE BASE.												
	1		SILTY SAND (SM/SM); medium dense; light reddish brown; moist; about 10% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 20% nonplastic fines.		A			100							
	2														
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
	8														

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REPORT TITLE				HOLE ID
BORING RECORD				**C-14**
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	**ED**	**US 50**	**H**	**03-5012-04-1**
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	**JP/PV**		**6-8-20**	**1 of 1**

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
JP	10-8-19	10-8-19	WGS84	C-15
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Taber			~0.00' Rt Sta ~NANA	NA NAVD88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	4 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT			Automatic Hammer	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER DURING DRILLING READINGS / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Backfilled			NE	3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT.												
	1		AGGREGATE BASE.												
	2		SILTY SAND (SM/SM); medium dense; brown; moist; about 5% coarse to fine, subangular to subrounded GRAVEL; about 70% coarse to fine SAND; about 25% nonplastic fines.		A			100							
	3		Bottom of borehole at 3.0 ft bgs												
	4		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010 Edition) except as noted on the Soil or Rock Legend or below.												
	5														
	6														
	7														
	8														

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ph. 775-636-5916

REPORT TITLE				HOLE ID
BORING RECORD				C-15
DIST.	COUNTY	ROUTE	POSTMILE	EA
03	ED	US 50	H	03-5012-04-1
PROJECT OR BRIDGE NAME				
Pioneer Trail/US 50 Intersection Safety Improvement Project				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
NA	JP/PV		6-8-20	1 of 1

CORESTONE - 5 BR 5012041A.GPJ CALTRANS LIBRARY DEC09-UNLOCK.GLB 7/9/20

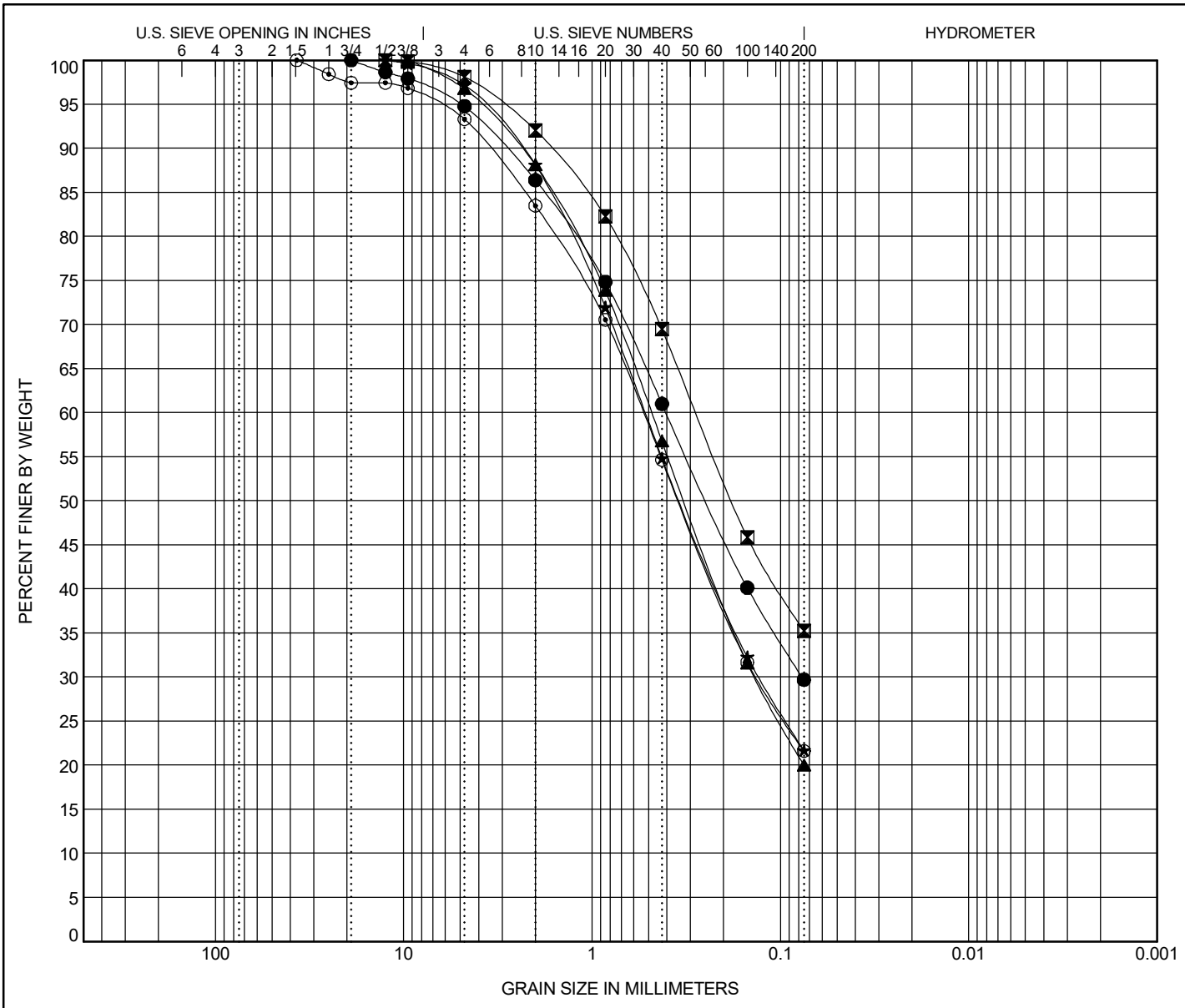
APPENDIX B

B-1 INDEX TEST RESULTS

B-2 R-VALUE TEST RESULTS

B-3 COMPACTION TEST REPORTS

B-4 CHEMICAL TEST RESULTS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-03**	**1.5**	**SILTY SAND(SM)**	**NP**	**NP**	**NP**		
⊠	**B-06**	**1.5**	**SILTY SAND(SM)**	**NP**	**NP**	**NP**		
▲	**B-08**	**5.0**	**SILTY SAND(SM)**	**NP**	**NP**	**NP**		
★	**B-09**	**1.5**	**SILTY, CLAYEY SAND(SC-SM)**	**22**	**16**	**6**		
⊙	**C-03**	**1.5**	**SILTY SAND(SM)**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-03**	**1.5**	**19**	**0.404**	**0.077**		**5.2**	**65.1**	**29.7**	
⊠	**B-06**	**1.5**	**12.5**	**0.28**			**1.9**	**62.8**	**35.3**	
▲	**B-08**	**5.0**	**9.5**	**0.485**	**0.137**		**3.2**	**76.8**	**20.0**	
★	**B-09**	**1.5**	**12.5**	**0.523**	**0.129**		**2.8**	**75.5**	**21.7**	
⊙	**C-03**	**1.5**	**37**	**0.537**	**0.134**		**6.7**	**71.7**	**21.6**	

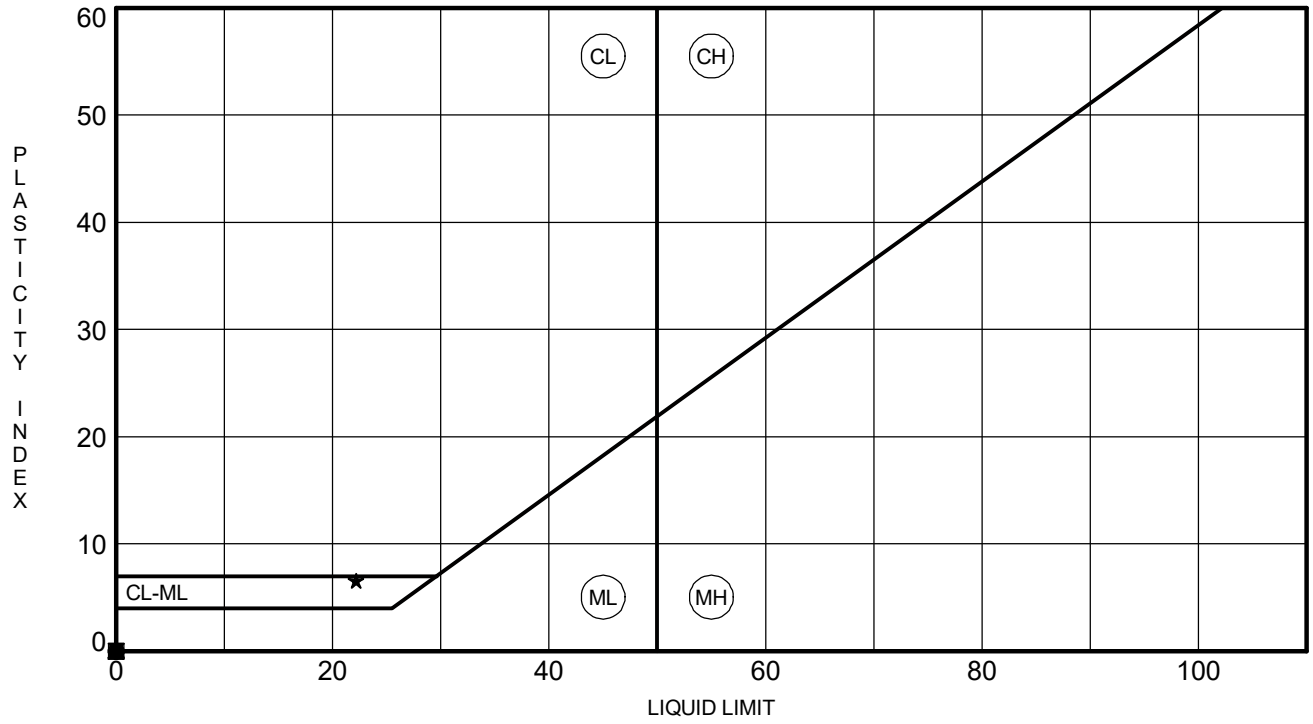
Black Eagle Consulting, Inc.
1345 Capital Blvd., Suite A
Reno, Nevada 89502-7140
Telephone: (775) 359-6600

GRAIN SIZE DISTRIBUTION

Project: Pioneer Trail/ Hwy. 50 Safety Improvement Project
Loction: South Lake Tahoe, CA
Project Number: 5012-04-1

PLATE: B-1.1

GRAIN SIZE_CORESTONE 1702011_5012041.GPJ GINT STD US LAB.GDT 7/9/20



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-03**	**1.5**	**NP**	**NP**	**NP**	**30**	**SILTY SAND(SM)**
⊠	**B-06**	**1.5**	**NP**	**NP**	**NP**	**35**	**SILTY SAND(SM)**
▲	**B-08**	**5.0**	**NP**	**NP**	**NP**	**20**	**SILTY SAND(SM)**
★	**B-09**	**1.5**	**22**	**16**	**6**	**22**	**SILTY, CLAYEY SAND(SC-SM)**
⊙	**C-03**	**1.5**	**NP**	**NP**	**NP**	**22**	**SILTY SAND(SM)**

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1345 Capital Blvd., Suite A
Reno, Nevada 89502-7140
Telephone: (775) 359-6600

ATTERBERG LIMITS RESULTS

Project: Pioneer Trail/ Hwy. 50 Safety Improvement Project
Loction: South Lake Tahoe, CA
Project Number: 5012-04-1

PLATE: B-1.2

ATTERBERG LIMITS 1702011_5012041.GPJ GINT STD US LAB.GDT 7/9/20

SUMMARY OF LABORATORY RESULTS

Black Eagle Consulting, Inc.

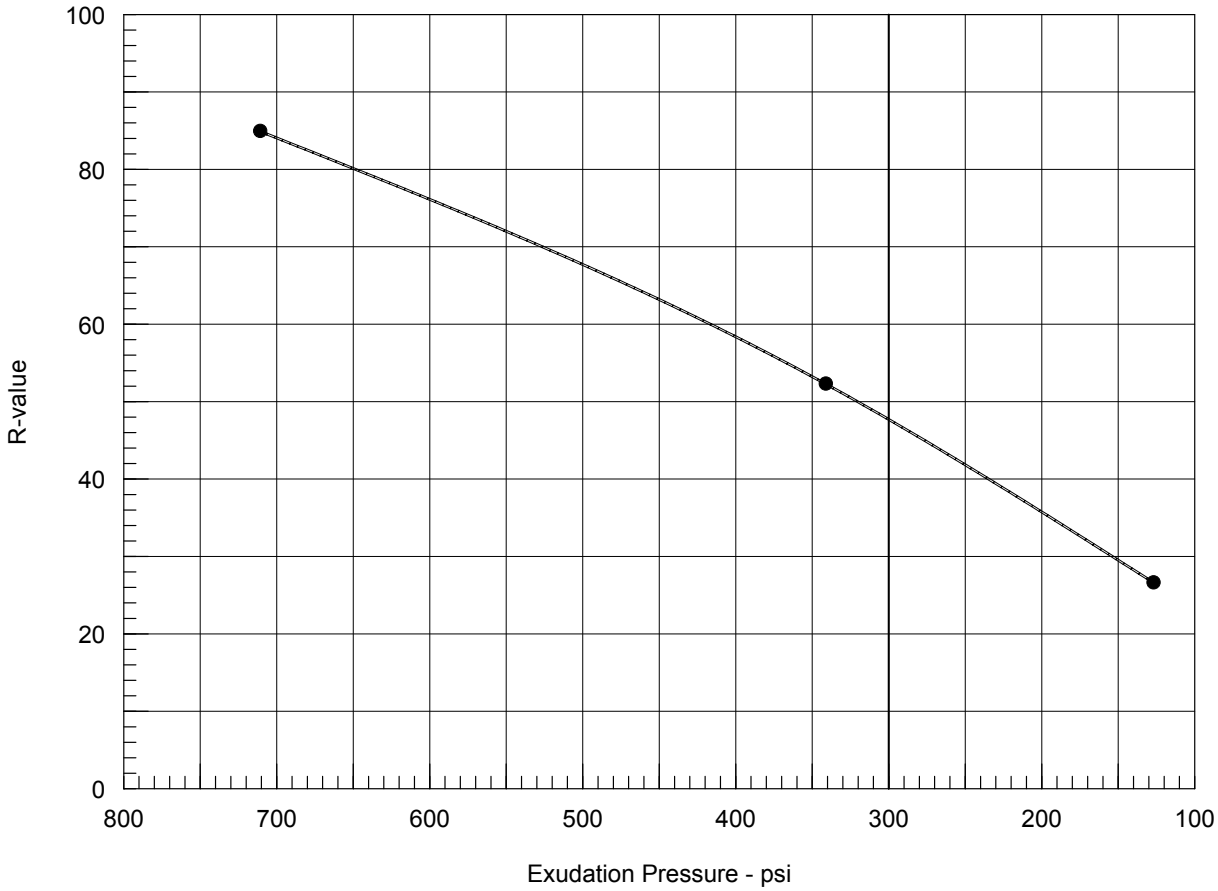
CLIENT Nichols Consulting Engineers **PROJECT NAME** Pioneer Trail/ Hwy. 50 Safety Improvement Project

PROJECT NUMBER 5012-04-1 **PROJECT LOCATION** South Lake Tahoe, CA

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Class-ification	Water Content (%)	Dry Density (pcf)	Satur-ation (%)	Void Ratio
B-01	1.0							9.6			
B-03	1.5	NP	NP	NP	19	30	SM	10.1			
B-06	1.5	NP	NP	NP	12.5	35	SM	11.3			
B-08	5.0	NP	NP	NP	9.5	20	SM	9.1			
B-09	1.5	22	16	6	12.5	22	SC-SM	8.2			
B-10	1.0							11.0			
C-03	1.5	NP	NP	NP	37	22	SM	11.2			
C-04	1.5							5.8			
C-11	1.5							5.5			
C-13	1.5							4.3			

PLATE: B-1.3

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	250	127.1	10.1	0.24	62	2.60	341	50	52
2	250	126.2	11.0	0.18	100	2.48	126	27	27
3	250	126.2	9.2	0.30	18	2.55	710	85	85

Test Results	Material Description
R-value at 300 psi exudation pressure = 48	Silty Sand

Project No.: 1702-01-1

Project: Pioneer Trail/Highway 50 Safety Improvements

Source of Sample: B-03 **Depth:** 1.5

Sample Number: Bulk

Date: 6/7/2020

Tested by: GLO

Checked by: LO

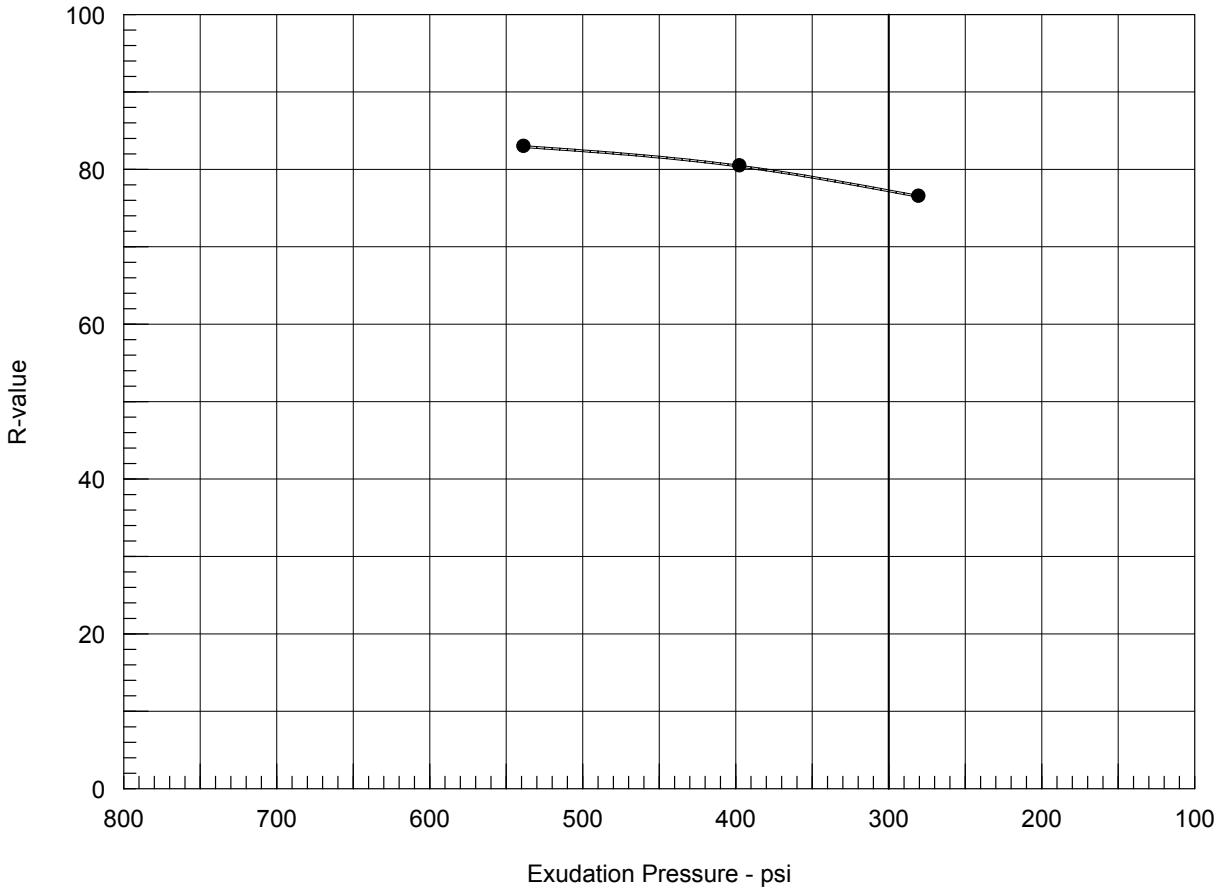
Remarks:
Laboratory Log 7754

R-VALUE TEST REPORT

BLACK EAGLE CONSULTING, INC.

Figure B-2.1

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	250	122.9	10.3	0.00	29	2.53	280	76	76
2	280	123.4	9.6	0.06	23	2.50	397	80	80
3	300	124.3	9.9	0.06	20	2.47	538	83	83

Test Results	Material Description
R-value at 300 psi exudation pressure = 77	Silty Sand

Project No.: 1702-01-1

Project: Pioneer Trail/Highway 50 Safety Improvements

Source of Sample: B-06 **Depth:** 1.5

Sample Number: Bulk

Date: 6/8/2020

Tested by: GLO

Checked by: LO

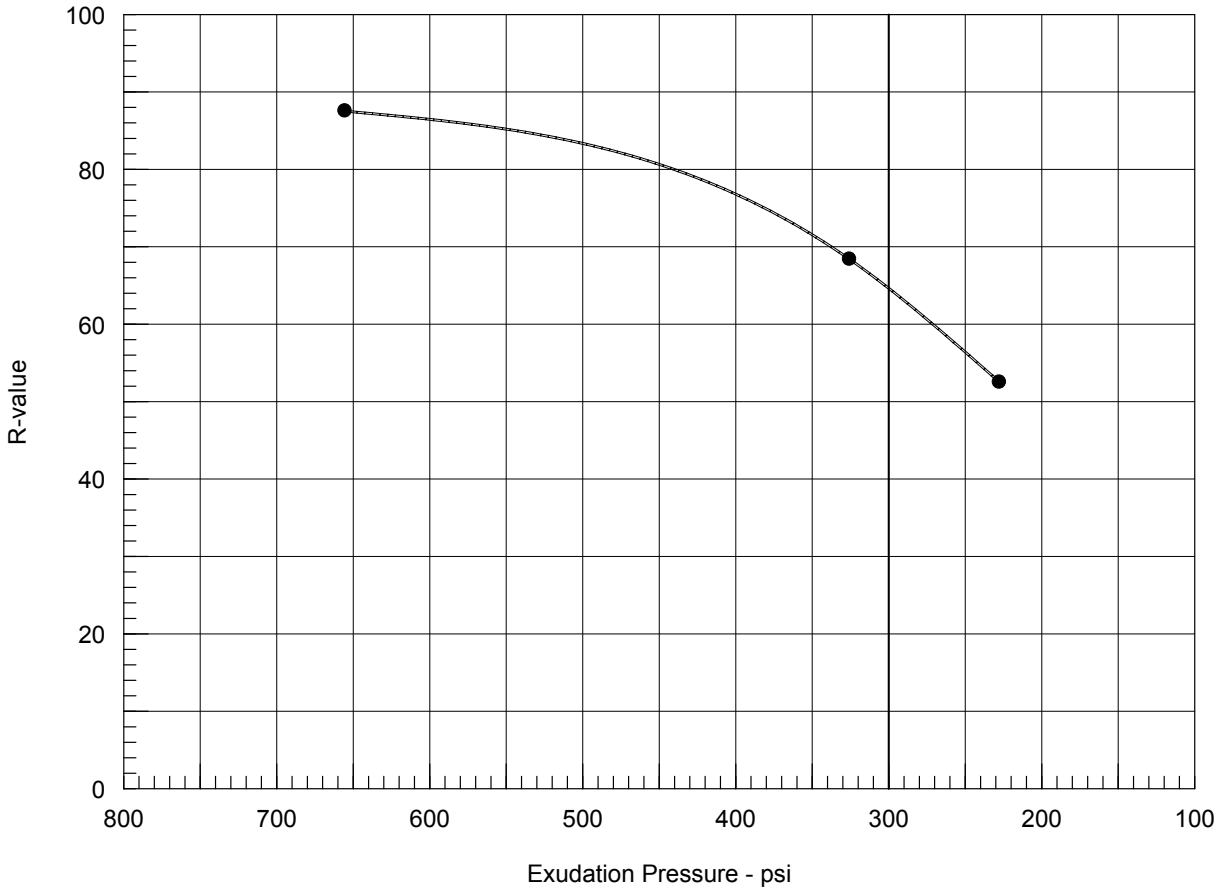
Remarks:
Laboratory Log 7754

R-VALUE TEST REPORT

BLACK EAGLE CONSULTING, INC.

Figure B-2.2

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	126.2	9.8	0.15	17	2.51	655	88	88
2	200	124.3	11.0	0.30	52	2.50	227	52	52
3	300	125.1	10.5	0.18	40	2.51	325	68	68

Test Results	Material Description
R-value at 300 psi exudation pressure = 65	Silty, Clayey Sand

Project No.: 1702-01-1
Project: Pioneer Trail/Highway 50 Safety Improvements
Source of Sample: B-09 **Depth:** 1.5
Sample Number: Bulk
Date: 6/8/2020

Tested by: GLO
Checked by: LO

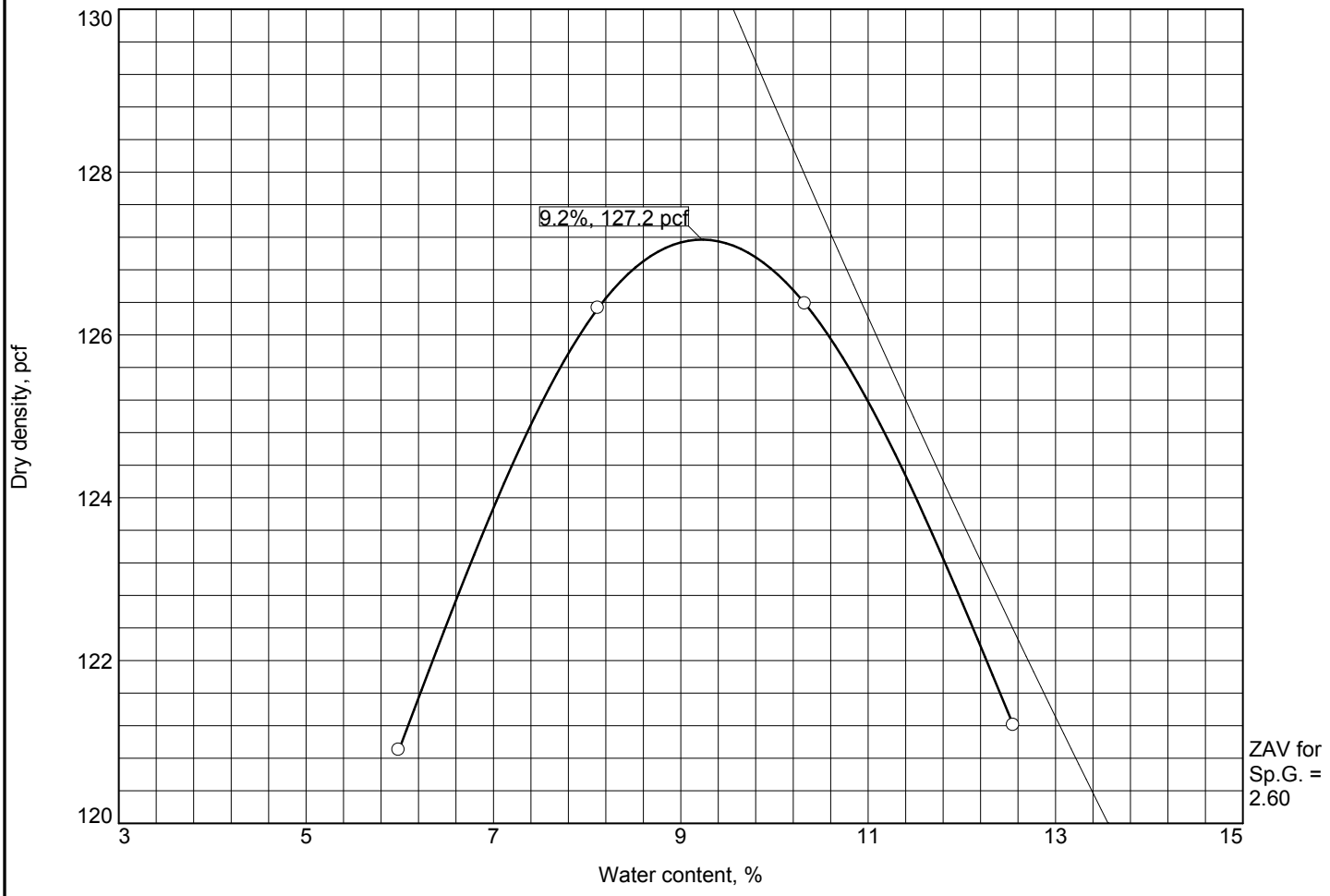
Remarks:
Laboratory Log 7754

R-VALUE TEST REPORT

BLACK EAGLE CONSULTING, INC.

Figure B-2.3

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
1.5			8.1				0	

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 127.2 pcf Optimum moisture = 9.2 %	

Project No. 1702-01-1 **Client:** Corestone Engineering, Inc.
Project: Pioneer Trail/Highway 50 Safety Improvements

○ **Source of Sample:** B-05 **Sample Number:** Bulk

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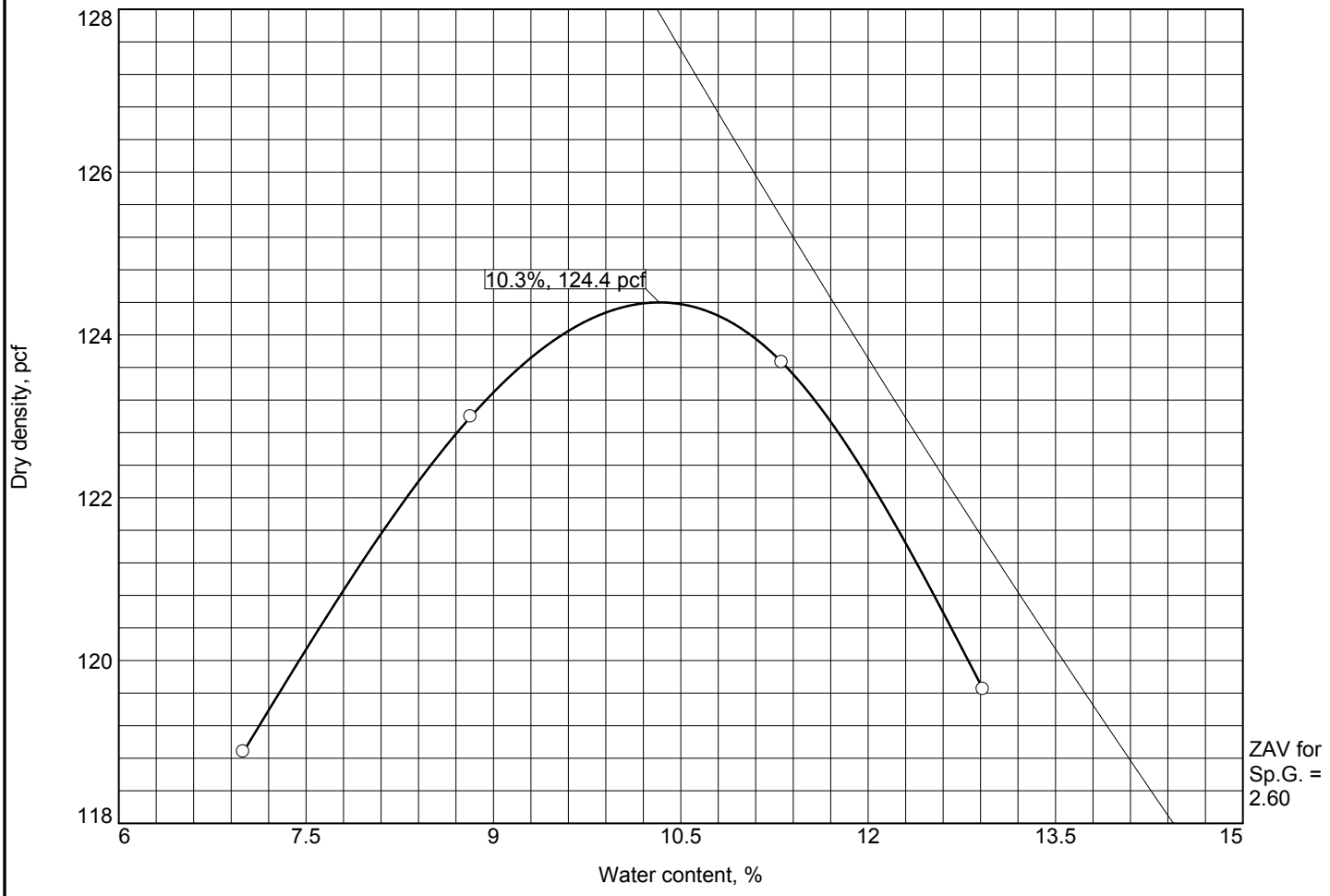
Reno, Nevada

Remarks:
Laboratory Log 7754
Mechanical Hammer Used

Figure B-3.1

Tested By: BH **Checked By:** LO

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
1.5	SM		11.3		0	NP	2.6	21.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 124.4 pcf Optimum moisture = 10.3 %	Silty Sand

Project No. 1702-01-1 **Client:** Corestone Engineering, Inc.
Project: Pioneer Trail/Highway 50 Safety Improvements

○ **Source of Sample:** C-03 **Sample Number:** Bulk

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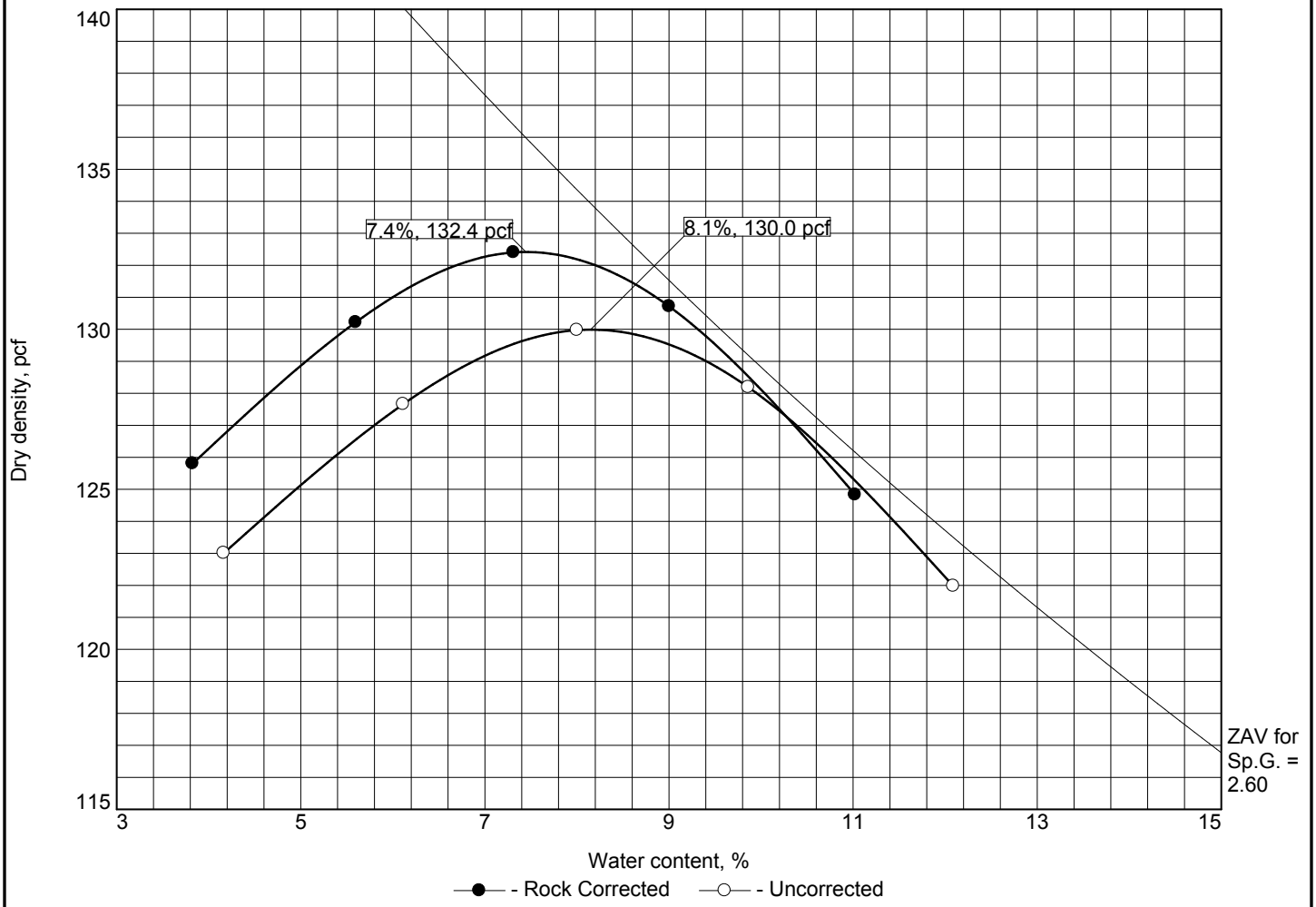
Reno, Nevada

Remarks:
Laboratory Log 7754
Mechanical Sector Face Hammer Used

Figure B-3.2

Tested By: BH **Checked By:** LO

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
1.5			4.2				9.2	

ROCK CORRECTED TEST RESULTS

Maximum dry density = 132.4 pcf

Optimum moisture = 7.4 %

MATERIAL DESCRIPTION

Project No. 1702-01-1 **Client:** Corestone Engineering, Inc.

Project: Pioneer Trail/Highway 50 Safety Improvements

○ **Source of Sample:** C-13 **Sample Number:** Bulk

Remarks:

Laboratory Log 7754
Mechanical Sector Face Hammer Used

BLACK EAGLE CONSULTING, INC.

Reno, Nevada

Figure B-3.3

Tested By: BH **Checked By:** LO

Silver State Labs-Reno
1135 Financial Blvd
Reno, NV 89502
(775) 857-2400 FAX: (888) 398-7002
www.ssalabs.com

Analytical Report

Workorder#: **19110301**
Date Reported: **11/15/2019**

Client: Corestone Engineering, Inc.
Sampled By: Jonathan Payne
Project Name: 5012-04-1 B-03 1-10'
PO #:

Laboratory Accreditation Number: NV015/CA2990

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
19110301-01	5012-04-1 B-03 1-10'	10/06/2019 23:00	11/6/2019

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
Hydrogen Ion (pH)	CTM 643 3C	5.91	mg/Kg		MA	11/07/2019 15:16	
Oxidation-Reduction Potential	SM 2580B	479	mV		MA	11/13/2019 12:54	
pH Temperature	CTM 643 3C	23.0	°C		MA	11/07/2019 15:16	
Resistivity	CTM 643 4F	2700	mg/Kg		MA	11/07/2019 13:03	
Sulfate	CTM 417	49	mg/Kg	6	MA	11/08/2019 5:49	
Sulfide	AWWA C105	Negative	POS/NEG		MA	11/12/2019 10:54	

Laboratory Accreditation Number: NV015/CA2990

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
19110301-02	5012-04-1 B-06 1.5-10'	10/07/2019 20:00	11/6/2019

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
Hydrogen Ion (pH)	CTM 643 3C	6.51	mg/Kg		MA	11/07/2019 15:16	
Oxidation-Reduction Potential	SM 2580B	466	mV		MA	11/13/2019 12:54	
pH Temperature	CTM 643 3C	23.0	°C		MA	11/07/2019 15:16	
Resistivity	CTM 643 4F	5300	mg/Kg		MA	11/07/2019 13:03	
Sulfate	CTM 417	65	mg/Kg	6	MA	11/08/2019 7:42	
Sulfide	AWWA C105	Negative	POS/NEG		MA	11/12/2019 10:54	

APPENDIX C

C-1 TRAFFIC LOADING CALCULATIONS

C-2 PAVEMENT DESIGN CALCULATIONS

Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50/Pioneer Trail Roundabout, US 50 legs, & Pioneer Trail Leg	Check:	pv

ESAL & TI Determination (Caltrans Method)

Reference:

1. Caltrans Highway Design Manual, Sixth Edition, Revision through March 20, 2020.
2. Caltrans GIS traffic data. Only available Caltrans data for the location on US 50 at Highway 89 intersection (roundabout)
3. Traffic Operations Analysis Report for US 50/Pioneer Trail Intersection (August 2019)

Note: US 50 runs north-south at intersection - EB represents NB traffic and NB traffic represents WB traffic.

Two-way AADT = 14700 Highest Value for the Most Recent Data (2018) EB & WB Total for US 50 Reference (2)

From Traffic Operations Analysis Report (includes peak hour volume value based on 2017 counts from 89 to Pioneer Trail on US 50 plus intersection splits)
Peak hour volumes are for summer peak season as such typical factor of 10 to calculate AADT is conservative - use the Caltrans AADT (14700) to calculate the factor for Sunday Summer Peak Volumes on US (EB + WB)

Total Sunday Summer Peak Volume (2-way on US) = 785+35+730+390 = 1940

Peak Volume to AADT factor = **7.58**

2017 Traffic count and traffic operation analysis report do to present vehicle classification counts, truck factor, growth factor etc. since the purpose was to analyze level of services at the intersection.
So the available data from Caltrans traffic data at US 50/Highway 89 intersection is used to determine appropriate inputs.

1. Use vehicle count for axle counts from 2018 data corresponding to AADT 14700.
2. Use 2013 to 2018 increase in truck counts to estimate the mid-way design year counts.

Pavement Design Life = 20 years (per Caltrans HDM 612.2, 40 years design lif for new construction and reconstruction spot improvements may consider 20-year design life)

For Roundabout Add all the values at the intersection - conservative with the dedicated turn right turn lanes from Pioneer Trail to US 50 and US 50 to Pioneer Trail.

Roundabout Peak Volume (Sunday Summer) = 785+35+730+390+525+40 = 2505

AADT = 19000 Peak volume time the factor above - roundup to 100s

US 50/ Highway 89 Traffic Data

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTIO	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK By Axle 2	TRUCK By Axle 3	TRUCK By Axle 4	TRUCK By Axle 5+	% TRUCK By Axle 2	% TRUCK By Axle 3	AADT By Axle 4	AADT By Axle 5+	EAL 2-WAY (1000)	YEAR VER/ EST	Data Year
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	12200	409	3.35	158	109	27	115	38.63	26.65	6.60	28.12	59	12E	2013
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	14700	492	3.35	190	131	32	138	38.63	26.65	6.60	28.12	66	12E	2018

Factor the value to the AADT above	AADT	Truck Counts 2-axle	3-axle	4-axle	5+ axle		
	19000	246	169	41	178		2018
Considering 20-year design life and calculate midway values (2020 initial year so 2030 midway deign point)		365	251	60	264		
20-year ESAL Constants (Caltrans Table 613.3A)		1380	3680	5880	13780		
		503,628	924,927	351,289	3,637,695	Design ESAL (20-Year) for the roundabout	5,417,539

Lane Distribution Factor (LDF) = 1.0

Traffic Index (TI) = $9.0 \times (ESAL*LDF/10^6)^{0.119}$ TI = 11.00 TI for 20-year design life

TI = **11.00** Roundup to 0.5

Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50/Pioneer Trail Roundabout, US 50 legs, & Pioneer Trail Leg	Check:	pv

For US 50 Legs Consider EB or WB (add the values from Pioneer Trail also and consider the largest value - EB has controlling traffic volume)

US 50 Peak Volume (Sunday Summer) = 730+390+525 = 1645

AADT = 12500 Peak volume time the factor above - roundup to 100s

US 50/ Highway 89 Traffic Data

RTE	DIST	CNTY	POST MILE	L E G	DESCRIPTIO	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK By Axle 2	TRUCK By Axle 3	AADT By Axle 4	AADT By Axle 5+	% TRUCK By Axle 2	% TRUCK By Axle 3	AADT By Axle 4	AADT By Axle 5+	EAL 2-WAY (1000)	YEAR VER/ EST	Data Year
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	12200	409	3.35	158	109	27	115	38.63	26.65	6.60	28.12	59	12E	2013
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	14700	492	3.35	190	131	32	138	38.63	26.65	6.60	28.12	66	12E	2018

Factor the value to the AADT above	AADT	Truck Counts 2-axle	3-axle	4-axle	5+ axle	
	12500	162	111	27	117	2018
Considering 20-year design life and calculate midway values (2020 initial year so 2030 midway deign point)		240	165	39	174	
20-year ESAL Constants (Caltrans Table 613.3A)		1380	3680	5880	13780	

				Design ESAL (20-Year)
331,334	608,505	231,111	2,393,220	3,564,170

Lane Distribution Factor (LDF) = 1.0

Traffic Index (TI) = 9.0 x (ESAL*LDF/10^6)$^{0.119}$ TI = 10.47 TI for 20-year design life

TI = **10.50** Roundup to 0.5

Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50/Pioneer Trail Roundabout, US 50 legs, & Pioneer Trail Leg	Check:	pv

For Pioneer Trail Leg Consider 1 way traffic (US 50 to Pioneer Trail has more volume)

Pioneer Trail Peak Volume (Sunday Summer) = 570+70 = 640

AADT = 4900 Peak volume time the factor above - roundup to 100s

US 50/ Highway 89 Traffic Data

RTE	DIST	CNTY	POST MILE	L E G	DESCRIPTIO	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK By Axle 2	TRUCK By Axle 3	AADT By Axle 4	AADT By Axle 5+	TOTAL % TRUCK 2	TRUCK % TRUCK By Axle 3	AADT By Axle 4	AADT By Axle 5+	EAL 2-WAY (1000)	YEAR VER/ EST	Data Year
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	12200	409	3.35	158	109	27	115	38.63	26.65	6.60	28.12	59	12E	2013
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	14700	492	3.35	190	131	32	138	38.63	26.65	6.60	28.12	66	12E	2018

Factor the value to the AADT above	AADT	Truck Counts 2-axle	3-axle	4-axle	5+ axle	
	4900	63	44	11	46	2018
Considering 20-year design life and calculate midway values (2020 initial year so 2030 midway deign point)		94	65	15	68	
20-year ESAL Constants (Caltrans Table 613.3A)		1380	3680	5880	13780	

				Design ESAL (20-Year)
129,883	238,534	90,596	938,142	1,397,155

Lane Distribution Factor (LDF) = 1.0

Traffic Index (TI) = 9.0 x (ESAL*LDF/10^6)$^{0.119}$ TI = 9.37 TI for 20-year design life

TI = **9.50** Roundup to 0.5

Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50 legs at round-a-bout	Check:	pv

Caltrans Traffic Data

Reference:

1. Caltrans Highway Design Manual, Sixth Edition, Revision through March 20, 2020.
2. Caltrans GIS traffic data

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTIOI	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK By 2	TRUCK By 3	AADT Axle 4	TOTAL 5+	% TRUCK By 2	% TRUCK By 3	AADT Axle 4	% TRUCK 5+	EAL 2-WAY (1000)	YEAR VER/ EST	
050	03	ED	70.621	B	JCT. RTE. 89 SOUTH	10100	638	6.32	321	134	60	123	50.31	21.00	9.40	19.28	75	12E	2013
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	12200	409	3.35	158	109	27	115	38.63	26.65	6.60	28.12	59	12E	
50	3	ED	70.621	B	JCT. RTE. 89 SOUTH	10,500	663	6.32	334	139	62	128	50.31	21.00	9.40	19.28	78	12E	2015
50	3	ED	70.621	A	JCT. RTE. 89 SOUTH	12,600	422	3.35	163	112	28	119	38.63	26.65	6.60	28.12	61	12E	
50	03	ED	70.621	B	JCT. RTE. 89 SOUTH	11600	733	6.32	369	154	69	141	50.31	21	9	19	86	12E	2016
50	03	ED	70.621	A	JCT. RTE. 89 SOUTH	13600	456	3.35	176	122	30	128	38.63	27	7	28	66	12E	
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	13600	456	3.35	176	122	30	128	38.63	26.65	6.60	28.12	66	12E	2017
050	03	ED	70.621	B	JCT. RTE. 89 SOUTH	11600	733	6.32	369	154	69	141	50.31	21.00	9.40	19.28	86	12E	
050	03	ED	70.621	B	JCT. RTE. 89 SOUTH	11900	752	6.32	378	158	71	145	50.31	21.00	9.40	19.28	86	12E	2018
050	03	ED	70.621	A	JCT. RTE. 89 SOUTH	14700	492	3.35	190	131	32	138	38.63	26.65	6.60	28.12	66	12E	

Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50/Pioneer Trail Roundabout - 20 years Design Life	Check:	pv

AC Pavement Design (Caltrans Method)

Reference: Caltrans Highway Design Manual, Sixth Edition, Revision through March 20, 2020

Traffic Index =	11	See separate calcs for TI
Aggregate Base California R-value =	78	
Subbase (if used) R-value =	40	
Subgrade R-value =	48	Measured R-values 48, 65, & 77
		Max 50 per Caltrans HDM

GE - Gravel Equivalent (ft) for entire pavement section or layers

GE = 0.0032 (TI) (100-R) R = California R-Value of material below layer or layers for which GE is being calculated

Layer (s) Thickness t = GE/Gf

GE for AC =	0.77	ft	
GE or HMA with Safety Factor =	0.97	ft	

Pick AC thickness from Table 633.1 (for the GE & TI)

AC Thickness =	0.60	ft	7.2	inch

roundup to 0.05 ft

Use 0.80 ft

9.60 inches

Note: should be no less than 0.15' or 1.8"

Note: Existing AC is generally > 9.5 inches

Gf for the used HMA = 1.96 ft for AC > 0.5 ft thickness

NO SUBBASE USED (NATIVE SOILS ARE GOOD SUBGRADE MATERIALS)

GE for AC plus AB (no subbase)	2.03 ft	Includes 0.2 ft safety factor
GE for used AC from Table =	1.57 ft	Table 633.1 (OR Calculate based on Gf for HMA above)
GE needed from AB =	0.46 ft	

Determine the Needed AB thickness from Table 633.1 (for the GE) OR Use Gf = 1.1 for AB

Needed AB Thickness =	0.42	ft	5.1	inch

roundup to 0.05 ft

Use 0.5 ft

6 inches

Note: should be no less than 0.35' or 4.2"

Full Depth AC Alternate

GE from HMA = 0.0032 (IT) (100- R_{SG}) =	1.83	ft		
GE from HMA with 0.1 ft FOS =	1.93	ft		
Needed HMA Thickness from Table 633.1 =	0.95	ft	11.4	inches

Use 0.95 ft

11.4 inches

Gf for the used HMA =	2.07 ft	for AC > 0.5 ft thickness
GE provided =	1.97 ft	

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Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	US 50 Legs - 20 years Design Life	Check:	pv

AC Pavement Design (Caltrans Method)

Reference: Caltrans Highway Design Manual, Sixth Edition, Revision through March 20, 2020

Traffic Index =	10.5	See separate calcs for TI
Aggregate Base California R-value =	78	
Subbase (if used) R-value =	40	
Subgrade R-value =	48	Measured R-values 48, 65, & 77
		Max 50 per Caltrans HDM

GE - Gravel Equivalent (ft) for entire pavement section or layers

GE = 0.0032 (TI) (100-R) R = California R-Value of material below layer or layers for which GE is being calculated

Layer (s) Thickness t = GE/Gf

GE for AC =	0.74	ft	
GE or HMA with Safety Factor =	0.94	ft	

Pick AC thickness from Table 633.1 (for the GE & TI)

AC Thickness =	0.55	ft	6.6	inch
			roundup to 0.05 ft	
			Use **0.75**	**ft**
			9.00	inches

Note: should be no less than 0.15' or 1.8"

Note: Existing AC is generally > 9.5 inches

Gf for the used HMA =	1.96	ft	for AC > 0.5 ft thickness

NO SUBBASE USED (NATIVE SOILS ARE GOOD SUBGRADE MATERIALS)

GE for AC plus AB (no subbase)	1.95	ft	Includes 0.2 ft safety factor
GE for used AC from Table =	1.47	ft	Table 633.1 (OR Calculate based on Gf for HMA above)
GE needed from AB =	0.48	ft	

Determine the Needed AB thickness from Table 633.1 (for the GE) OR Use Gf = 1.1 for AB

Needed AB Thickness =	0.43	ft	5.2	inch
			roundup to 0.05 ft	
			Use **0.5**	**ft**
			6	inches

Note: should be no less than 0.35' or 4.2"

Full Depth AC Alternate

GE from HMA = 0.0032 (IT) (100- R_{SG}) =	1.75	ft		
GE from HMA with 0.1 ft FOS =	1.85	ft		
Needed HMA Thickness from Table 633.1 =	0.90	ft	10.8	inches
			Use **0.90**	**ft**
			10.8	inches
Gf for the used HMA =	2.09	ft	for AC > 0.5 ft thickness	
GE provided =	1.88	ft		

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Project Name:	Pioneer Trail/US 50 Intersection	Calc. By:	PV
Project No:	5012-04-1	Date	6/14/2020
Road/Section:	Pioneer Trail Leg - 20 years Design Life	Check:	pv

AC Pavement Design (Caltrans Method)

Reference: Caltrans Highway Design Manual, Sixth Edition, Revision through March 20, 2020

Traffic Index =	9.5	See separate calcs for TI
Aggregate Base California R-value =	78	
Subbase (if used) R-value =	40	
Subgrade R-value =	48	Measured R-values 48, 65, & 77
		Max 50 per Caltrans HDM

GE - Gravel Equivalent (ft) for entire pavement section or layers

GE = 0.0032 (TI) (100-R) R = California R-Value of material below layer or layers for which GE is being calculated

Layer (s) Thickness t = GE/Gf

GE for AC =	0.67	ft	
GE or HMA with Safety Factor =	0.87	ft	

Pick AC thickness from Table 633.1 (for the GE & TI)

AC Thickness =	0.50	ft	6	inch

roundup to 0.05 ft

Use 0.65 ft

7.80 inches

Note: should be no less than 0.15' or 1.8"

Note: Existing AC is generally > 9.5 inches

Gf for the used HMA = 1.97 ft for AC > 0.5 ft thickness

NO SUBBASE USED (NATIVE SOILS ARE GOOD SUBGRADE MATERIALS)

GE for AC plus AB (no subbase)	1.78 ft	Includes 0.2 ft safety factor
GE for used AC from Table =	1.28 ft	Table 633.1 (OR Calculate based on Gf for HMA above)
GE needed from AB =	0.50 ft	

Determine the Needed AB thickness from Table 633.1 (for the GE) OR Use Gf = 1.1 for AB

Needed AB Thickness =	0.46	ft	5.5	inch

roundup to 0.05 ft

Use 0.50 ft

6 inches

Note: should be no less than 0.35' or 4.2"

Full Depth AC Alternate

GE from HMA = 0.0032 (IT) (100- R_{SG}) =	1.58	ft		
GE from HMA with 0.1 ft FOS =	1.68	ft		
Needed HMA Thickness from Table 633.1 =	0.80	ft	9.6	inches

Use 0.80 ft

9.6 inches

Gf for the used HMA =	2.11 ft	for AC > 0.5 ft thickness
GE provided =	1.69 ft	

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APPENDIX H

PHASE I INITIAL SITE ASSESSMENT AND PRELIMINARY SITE INVESTIGATION FOR AERIALLY DEPOSITED LEAD

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Phase I Initial Site Assessment and Preliminary Site Investigation for Aerially Deposited Lead

Pioneer Trail and U.S. Highway 50 Project

August 21, 2020

NCE

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Prepared for:

County of El Dorado

Department of Transportation

924 B Emerald Bay Road
So. Lake Tahoe, CA 96150

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501.30.25

Phase I Initial Site Assessment and Preliminary Site Investigation for Aerially Deposited Lead
Pioneer Trail and U.S. Highway 50 Project
South Lake Tahoe, California

Prepared on Behalf Of
County of El Dorado
924 B Emerald Bay Road
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D. Certified Sanborn Map Report
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I. Pre-Survey Questionnaire
J. Caltrans Encroachment Permit
K. Laboratory Report

EXECUTIVE SUMMARY

NCE conducted a Phase I Initial Site Assessment (ISA) and Preliminary Site Investigation (PSI) for Aerially Deposited Lead (ADL) in support of the Pioneer Trail and U.S. Highway 50 (US-50) Project located in South Lake Tahoe, El Dorado County (County), California (Plates 1-2). The County, as the project sponsor and implementing agency, in cooperation with the California Department of Transportation (Caltrans), is proposing to convert an existing signalized intersection at the US-50/State Route 89 (SR-89) and Pioneer Trail intersection in unincorporated South Lake Tahoe, California, into a three-legged roundabout as part of the Pioneer Trail/US-50 Intersection Safety Improvement Project (Project). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

Project activities would occur within County right-of-way (ROW) Pioneer Trail, federal highway US-50/Caltrans-owned SR-89 and ROW, on adjacent publicly owned parcels belonging to the California Tahoe Conservancy, and a portion of land owned by private property owners (Site; see Plate 2). There are also several proposed property easements and ROW acquisitions, as shown on Plate 2.

The purpose of the Phase I ISA was to look for potential contamination that would impact construction or ROW acquisition, and to address worker safety and soil management options (Plate 2). The purpose of the PSI for ADL was to assess areas within the Caltrans and County ROW for potential lead impacts and to assess the need for mitigation measures in bid documents to address worker safety and soils management. The roundabout alignment is and has historically been part of US-50/SR-89 and the potential for historical soil impacts from ADL exists. ADL in soil results from emissions from vehicles using leaded gasoline. The shallow soil in unpaved areas near highways often contains lead in concentrations above thresholds deemed hazardous under California regulations. If hazardous soil will be excavated or disturbed by construction activities, regulations require the soil to be disposed of at an appropriate facility or placed under roadways using the June 30, 2016 agreement between the Department of Toxic Substances Control (DTSC) and Caltrans, titled Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement). Alternatively, recommendations have been made if the Agreement is not used to manage the soil.

This Phase I ISA is also intended to satisfy the level of effort often referred to as “All Appropriate Inquiry” (AAI) in the Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA), 42 United State Code § 9601, with the objective of allowing a potential real estate transaction involving the Site to qualify for the landowner liability protections afforded by CERCLA. Consistent with the AAI guidance the goal is to identify to the extent feasible:

- Recognized Environmental Conditions (RECs) resulting from the improper use, manufacture, storage, and/or disposal of hazardous or toxic substances at or in the vicinity of the Site that may be encountered during construction.

- Historical RECs (HRECs), past releases of any hazardous substances or petroleum products that have occurred in connection with the property and have been addressed to the satisfaction of the applicable regulatory authority or meet unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

- Controlled RECs (CRECs), past releases of hazardous substances or petroleum products that have been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

Identification of these conditions at or in the vicinity of the proposed ground disturbance activities within the Site are an indication that hazardous or toxic materials have the potential to be encountered during construction, be present on property slated for ROW acquisition, or pose a concern to construction workers.

The qualifications of the Environmental Professional completing this ESA and responsible for preparation of this report meet the standards included in the AAI Final Rule.

Findings and Conclusions

Phase I ISA

There were no RECs identified during review of the pre-survey questionnaire, historical topographic maps, historical aerials, or other historical record reports related to the Site. Impacts to soil and groundwater from total petroleum hydrocarbons (TPHs) in the vicinity of several HRECs near the southern perimeter of the Site (Plate 2) were identified. Some of the nearer facilities with documented releases include the Roadrunner located at 2933 US-50 and adjacent to the southeastern boundary of the Site along US-50, Meyers Shell Station/Jerry's Shell Station located at 1866 Santa Fe Road and adjacent to the southwest boundary of the Site, Tahoe Mini Storage located on US-50 south and less than 0.125 miles south of the Site, and Paradise Chevron located at 2986 US-50, less than 0.125 miles south of the Site.

Based on the nature of the releases at these facilities and their proximity and upgradient locations relative to the Site, the potential for environmental concerns from these facilities to have impacted the Site appears low. Additionally, while at the time of writing of this report design of the project has not been finalized, based on the current design there are no excavations planned within 500-feet of the nearest facility.

ADL

Per the April 27, 2020 Work Plan Memorandum approved by Caltrans via email on April 28, 2020, ADL samples were collected at 31 locations from three depth intervals: 0 to 0.5-feet below ground surface [bgs], 1.5 to 2-feet bgs, and 2.5 to 3-feet bgs, except where refusal was encountered. A total of 88 samples were collected, 31 samples from 0 to 0.5-feet bgs, 29 samples from 1.5 to 2-feet bgs, and 28 samples from 2.5 to 3-feet bgs. Reported

concentrations of lead ranged from 3 to 190 milligrams per kilogram (mg/kg), with reported concentrations ranging from 6 to 190 mg/kg in samples collected from 0 to 0.5-feet bgs, 3.5 to 96 mg/kg in samples collected from 1.5 to 2-feet bgs, and from 3 to 78 mg/kg in samples collected from 2.5 to 3-feet bgs. There were three reported concentrations that exceeded the unrestricted use screening criteria[1] (80 mg/kg), two surface and one sample collected from 1.5-feet bgs. No analytical results exceeded the commercial/industrial screening criteria[2] (320 mg/kg).

All sample locations appeared to demonstrate that elevated lead concentrations near the surface attenuated with depth with the exception of one sample location (PT14) near the northeast corner of the US-50 and Pioneer Trail intersection. This location was in the vicinity of several improvements including a traffic light, utility boxes, and road signs which suggest that construction of these improvements likely resulted in disturbed soils and prior to the disturbance the lead distribution was likely similar to the that observed at the other sample locations (higher concentrations in the shallow samples that attenuate by the 2.5 to 3-feet bgs sample). Based on this, it is not expected that lead concentrations would continue to increase with depth at PT14. In addition, all samples down to 3-feet bgs at PT14 were below the screening value for unrestricted use and proposed excavations to remove the improvements in the vicinity of PT14 are anticipated to be less than 3-feet bgs. The final grade at PT14 will also include 3-4 feet of fill.

EPA ProUCL 5.1 software was used to calculate the sample mean (average) and 95% upper confidence limit (UCL) of the mean concentration to obtain an exposure point concentration (EPC) of both the complete data set and the data set for each depth profile.

The calculated EPCs for the ADL data collected for the entire Site (38.1 mg/kg) and for each depth profile (0-0.5-feet bgs: 74.9 mg/kg, 1.5-2-feet bgs: 28.8 mg/kg, and 2.5-3-feet bgs: 20.5 mg/kg) were below applicable screening criteria for unrestricted use (80 mg/kg). All but one sample location generally showed lead concentrations attenuated with depth. The sample location with reported lead concentrations that increased with depth is likely an anomaly due to recent disturbance and all reported lead concentrations at that location were below unrestricted use criteria. In addition, anticipated excavation at that location does not exceed the depth of sampling. Based on these, it appears that the Site meets the “no coverage requirement” criteria in Table 1 of the Agreement. Regardless, as discussed in Sections 1.1 and 4.4, portions of the Site are anticipated to be covered by pavement and clean imported fill.

If the Project or portions of the Project are covered under the Agreement, Caltrans should be involved in soil management as applicable. Similarly, if the Project or portions of the Project are not covered by the Agreement, as the EPC for lead in soil for the Site (38.1 mg/kg) does not exceed the published health-based screening value for unrestricted use (80 mg/kg),

[1] June 2020 Department of Toxic Substances Control (DTSC)-modified Screening Level (SL) https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf
[2] June 2020 DTSC-modified SL

excavated soils would not be considered hazardous waste and would not have a cover requirement. Regardless, from a risk management perspective, appropriate measures should be taken by the contractor to protect worker health as it pertains to heavy metals in soil. For risk management purposes it is also recommended that excavated soils requiring off-haul be stockpiled and profiled prior to disposal at an appropriate waste disposal facility and should not be re-used for any purpose.

Phase I ISA Conclusions

Based on the findings discussed above, it is possible that excavation work performed within the Site, particularly near the southern perimeter, could encounter fuel-impacted soil and/or groundwater, particularly in the areas around the Shell Station and Roadrunner. However, no excavations are planned within 500-feet of these facilities and encountering impacts due to their operations appears unlikely.

Data Gaps

No interviews with state or federal agencies, or property owners were conducted as part of this Phase I ESA. It is unlikely that information provided by these individuals would have had an impact on the conclusions made by this Phase I ESA.

LIST OF ABBREVIATIONS

µg	microgram
AAI	All Appropriate Inquiry
ACM	Asbestos-containing materials
AMSD	Approximate Minimum Search Distance
APN	Assessor's Parcel Number
AST	Aboveground storage tank
ASTM	American Society for Testing and Materials
AUL	Activity and Use Limitations
bgs	below ground surface
BTEX	Benzene, toluene, ethylene and xylenes
CalEPA	California Environmental Protection Agency
CERS	California Environmental Reporting System
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CHMIRS	California Hazardous Material Incident Report System
County	El Dorado County
CREC	Controlled Recognized Environmental Condition
CUPA	Certified Unified Program Agency
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FID	Facility Inventory Database
FINDS	Facility Index System
HREC	Historical Recognized Environmental Condition
HW	Hazardous waste
ISA	Initial Site Assessment
kg	kilogram
L	liter
LQ	Low quantity
LUST	Leaking underground storage tank
mg	milligram
MTBE	Methyl tertiary-butyl ether
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated biphenyl
pCi/L	picocuries per liter
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROW	Public Right of Way
RWQCB	Regional Water Quality Control Board

Site	Area covered by this Phase I ESA
SQG	Small quantity generator
STPUD	South Tahoe Public Utility District
SWEEPS	Statewide Environmental Evaluation and Planning System
SWRCB	California State Water Resource Control Board
TPH	Total petroleum hydrocarbons
TPH-d	Total petroleum hydrocarbons (diesel range)
TPH-g	Total petroleum hydrocarbons (gasoline range)
TSCA	Toxic Substances Control Act
US-50	U.S. Highway 50
USC	United States Code
USGS	U.S. Geological Survey
UST	Underground storage tank
WDR	Waste Discharge Requirements

1.0 INTRODUCTION

1.1 General

NCE conducted a Phase I Initial Site Assessment (ISA) and a Preliminary Site Investigation (PSI) for Aerially Deposited Lead (ADL) in support of the Pioneer Trail and U.S. Highway 50 (US-50) Project located in unincorporated South Lake Tahoe, El Dorado County (County), California (Plates 1 and2). The County, as the project sponsor and implementing agency, in cooperation with the California Department of Transportation (Caltrans), is proposing to convert an existing signalized intersection at the US-50/State Route 89 (SR-89) and Pioneer Trail intersection into a three-legged roundabout as part of the Pioneer Trail/US-50 Intersection Safety Improvement Project (Project). The purpose of the Project is to address safety and traffic flow issues, reduce vehicle emissions associated with traffic delays, and improve non-motorized access to nearby bikeways and trails.

The Project has been designed to implement a 'complete streets' strategy by proposing to install lighting, signage, and landscaping, reduce resilience on the private automobile, provide multimodal transportation improvements like visible crosswalks for pedestrian and bicycle movements, provide for future growth for transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the Project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

Project activities would occur within County right-of-way (ROW) Pioneer Trail, federal highway US-50/Caltrans-owned SR-89 and ROW, on adjacent publicly owned parcels belonging to the California Tahoe Conservancy, and a portion of land owned by private property owners (Site; see Plate 2). There are also several proposed property easements and ROW acquisitions, as shown on Plate 2. There are three staging areas associated with the project, however since no construction is proposed in these areas, they were not incorporated into the Phase I ISA.

1.2 Purpose and Scope

1.2.1 Purpose

The purpose of the Phase I ISA was to look for potential contamination that would impact construction or ROW acquisition (Plate 2), and to address worker safety and soil management options. The purpose of the PSI for ADL was to assess areas within the Caltrans and County ROW for potential lead impacts and to assess the need for mitigation measures in bid documents to address worker safety and soils management.

The roundabout alignment is and has historically been part of US-50/SR-89 and the potential for historical soil impacts from ADL exists. ADL in soil results from emissions from vehicles using leaded gasoline. The shallow soil in unpaved areas near highways often contains lead in concentrations above thresholds deemed hazardous under California regulations. If hazardous soil will be excavated or disturbed by construction activities, regulations require the soil to be disposed of at an appropriate facility or placed under roadways using the June 30, 2016 agreement between the Department of Toxic Substances Control (DTSC) and

Caltrans, titled Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement). The Agreement is discussed further in Section 8.0.

This Phase I ISA is also intended to satisfy the level of effort often referred to as "All Appropriate Inquiry" (AAI) in the Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA), 42 United States Code (USC) § 9601, with the objective of allowing a potential real estate transaction involving the Site to qualify for the landowner liability protections afforded by CERCLA. Consistent with the AAI guidance the goal is to identify to the extent feasible:

1. Existing recognized environmental conditions (RECs) resulting from the improper use, manufacture, storage, and/or disposal of hazardous or toxic substances at the Site. The American Society for Testing and Materials (ASTM) Standard E1527-13 uses the term "RECs" to assess environmental risks associated with a property. The term is defined as "the presence or likely presence of any hazardous substances or petroleum products at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include *de minimis* conditions, a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

2. Historical RECs (HRECs), RECs resulting from a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

3. Controlled RECs (CRECs), RECs resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, AULs, institutional controls, or engineering controls).

The qualifications of the Environmental Professional completing this ISA and responsible for preparation of this report meet the standards included in the AAI Final Rule.

1.2.2 Scope

The specific scope of the Phase I ISA for the Site included the following:

- Review of readily available environmental databases maintained by federal, state, and local agencies within the ASTM E1527-13 approximate minimum search distances, as described in Section 5.0 of this report. A copy of the Environmental Radius Report, provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut, and the Environmental Lien Report, are attached as Appendices A and H, respectively.

- Review of readily available historical documents such as topographic maps, aerial photographs, Certified Sanborn Maps, Property Tax Map Report, Building Permit Report, City Directory and Environmental Lien and AUL Search to look at previous facilities and activities at the Site and in the vicinity. Copies of the historical aerial photographs, historical topographic maps, Sanborn Fire Insurance Maps, Property Tax Map Report, Building Permit Report, City Directory Report and Environmental Lien and AUL Search are included in Appendices B through H, respectively.

- Perform reconnaissance of the Site to visually observe on-site conditions for evidence of environmental impacts such as soil staining, stressed vegetation, ponded liquids, mounded soils, excavations, discarded drums, monitoring wells, etc.; and potential environmental concerns such as underground storage tanks (USTs), aboveground storage tanks (ASTs), polychlorinated biphenyl (PCB)-containing materials, or other hazardous materials or wastes present at the Site with respect to surrounding property uses and natural surface features.

- Interview persons familiar with the Site to obtain information on present and previous on-site activities potentially resulting in the environmental degradation of the Site or adjoining properties.

- Prepare this report to summarize the findings of the investigation.

2.0 SITE SALIENT ASSIGNMENT INFORMATION

NCE Project No.:	501.30.25
Project Name:	Pioneer Trail/US-50 Intersection Project
Assessor's Parcel Numbers (APNs):	Site is primarily within County and Caltrans ROW but includes portions of the following APNs as shown on Plate 2: 034-270-550 034-270-390 081-020-030 081-020-040 034-270-410 034-270-030 034-401-250 034-401-240
City, County, and State:	Meyers, El Dorado County, California
Primary Use:	Vehicular and pedestrian transportation
Site Area:	Approximately 13.9 acres
Reported Number of Tenants:	None
Number of Buildings:	None

3.0 SITE DESCRIPTION

3.1 Site Location

The Site totals approximately 13.9 acres including 1.3 miles along US-50. Project activities would occur within County ROW along Pioneer Trail, federal highway (US-50/Caltrans owned SR-89), and adjacent publicly owned parcels. Three staging areas will also be used during construction located within publicly owned land along Santa Fe Road, Country Club Drive, and Arapahoe Street (Plate 2). There are also several proposed easements and ROW acquisitions in the vicinity of the US-50/Pioneer Trail intersection, as shown on Plate 2.

The Site is irregular in shape and is located approximately 1,000 feet to the north and south of the intersection of Pioneer Trail and US-50, as well as approximately 500-feet east from the intersection along Pioneer Trail in El Dorado County, California (Plates 1 and 2). The approximate center of the US-50/Pioneer Trail intersection is located at latitude 38.859541 and longitude -120.012105.

The climate in South Lake Tahoe is characterized as warm in the summer with wet, snowy winters, with an average of 28 inches of rainfall and 143 inches of snow per year (U.S. Climate Data, 2016).

3.2 Utilities

Utility information related to the Site is summarized in the following table.

Utility	Provider
Water	South Tahoe Public Utility District (STPUD)
Sanitary Sewer / Storm Drain	STPUD and Caltrans
Electric	Liberty Utilities
Gas/Oil	N/A

3.4 Surrounding Land Use

The area surrounding the Site consists primarily of open space, residential and commercial properties. According to the El Dorado County online mapping tool, areas surrounding the Site are zoned as residential, commercial, transportation corridor, or light industrial (El Dorado County, 2019 and 2020).

Commercial establishments are located south and east of the US-50 and Pioneer Trail intersection, the Tahoe Paradise Golf Course is located to the southeast and there is open space and bike trails west along US-50 and southeast of the US-50/Pioneer Trail intersection. There are residences further to the north, east, west and southwest. Lake Tahoe Golf Course is approximately a mile north of the US-50/Pioneer Trail intersection on the west side of US-50.

3.5 Physical Site Setting

3.5.1 Shapes and Sizes of the Parcels

The majority of the Site is within the roadway and ROW, however some small portions of several publicly owned parcels are included as shown on Plate 2. The shapes of the parcels are irregular.

3.5.2 Topography

According to the U.S. Geological Survey (USGS) Echo Lake 2018 7.5-minute quadrangle map, Site topography is relatively flat with a slight slope to the west and an elevation of approximately 6,375 feet above mean sea level (USGS, 2018).

3.5.3 Surface Waters and Wetlands

Surface Waters

Primary sources of surface water to the Site are direct precipitation, stormwater runoff from US-50, snowmelt, and runoff from commercial developments in the vicinity (NCE, 2020).

Echo Lake and Fallen Leaf Lake are located approximately 2.4-miles southwest and 3.2-miles northwest of the Site, respectively.

Wetlands

There are no mapped National Wetland Inventory wetlands within the Site (NCE, 2020).

3.5.4 Soils, Geology, Groundwater and Seismicity

Geology

The Site lies within the Tahoe Basin. The Tahoe Basin is located at the boundary between the Sierra Nevada microplate and the Great Basin. The central portion and majority of the Tahoe Basin is covered by Lake Tahoe. Rocks and deposits in the Tahoe Basin include pre-Cretaceous metamorphic rock, Cretaceous granitic rock, Tertiary and Quaternary glacio-fluvial and lacustrine sedimentary deposits (USGS, 1997). Plutonic rocks from the Mesozoic age constitute the Sierra Nevada batholith, which lies in the northern half of the Sierra Nevada. On the west side of the batholith is the western metamorphic belt, a terrain made of weakly metamorphosed volcanic and sedimentary rocks that have been strongly deformed from the Paleozoic and Mesozoic ages (PARIKH Consultants, Inc. 2012).

Hydrogeology

The Site is located within the North Lahontan Hydrologic Region as defined by the Lahontan Regional Water Quality Control Board (RWQCB) and the California Department of Water Resources (Lahontan Regional Water Quality Control Board, 2017).

The California State Water Resources Control Board (SWRCB) GeoTracker site was reviewed to obtain nearby groundwater data. Reports reviewed suggest that the overall groundwater flow is variable and depth to water is approximately 10 to 12-feet below ground surface (bgs) (Lahontan Region California Regional Water Quality Control Board, 2002). Review of the Depart of Water Resources' Groundwater Information Center Interactive Map Application[3] indicates that groundwater flow direction is towards Lake Tahoe to the north. The STPUD Tahoe Valley South Subbasin (6-5.01) Annual Report for the 2018 Water Year also includes a groundwater contour map suggesting the groundwater flow is towards the north (STPUD, 2019).

Seismicity

The Site is located approximately two miles east of the West Tahoe Fault. The West Tahoe fault has a mapped length of approximately 28 miles. It is the range bounding, east dipping normal fault along the west margin of the basin. South of Emerald Bay the West Tahoe Fault extends onshore as two parallel strands. In Lake Tahoe, the fault has clearly defined scarps that offset submarine fans, lake-bottom sediments, and the McKinney Bay slide deposits. The slip rate on the West Tahoe Fault is estimated to be 0.6-1.0 mm year which is the highest slip rate of any fault in the Tahoe Basin (CGS, 2016). In addition, several unnamed Quaternary age faults are located approximately 1.5 to 2.5-miles north to northeast of the Site (USGS, 2020).

3.6 Current Site Use

The US-50 and Pioneer Trail roadways are currently active asphalt/concrete paved thoroughfares supporting vehicle transportation. US-50 is a two-way four-lane US highway and Pioneer Trail is a two-way two-lane road. West of US-50 is a bike trail and open space. There is also a bike trail east of US-50 south of Pioneer Trail. The Site boundary also includes portions of a fur store southeast of the US-50/Pioneer Trail intersection, and the driveway of a gas station in the southeast corner of the Site (Plate 2). There is a residential property just northwest of the Site, and northeast of the US-50/Pioneer Trail intersection is open space. The US-50/Pioneer Trail intersection has several traffic lights and traffic-related signs as well as several utility boxes. There are several road signs along both sides of US-50 and Pioneer Trail within the ROW. The three staging areas are located to the west, northwest and northeast of the Site (Plate 2) and are located within the ROW on Santa Fe Road, County Club Drive, and Arapahoe Street, respectively.

3.7 Environmental Permits

NCE did not receive information pertaining to any environmental permits or liens associated with the Site.

[3] https://gis.water.ca.gov/app/gicima/

4.0 HISTORICAL USE

The historical records review included researching and examining the following records:

- Historical topographic maps (Appendix B)
- Historical aerial photographs (Appendix C)
- Historical fire insurance maps (Sanborn Maps) (Appendix D)
- Property Tax Map Report (Appendix E)
- Building Permit Report (Appendix F)
- City Directories (Appendix G)
- Environmental Lien and AUL Search (Appendix H)

Provided below is a summary of NCE's review of this information.

4.1 Historical Topographic Maps

NCE reviewed historical topographic maps for the Site vicinity for the years 1889, 1891, 1893/1895, 1896, 1955, 1969, 1980, 1992, 1994, and 2012. These maps are presented in Appendix B. The following table summarizes this review.

Year	Site Area	Surrounding Properties
1889	The Site is in the vicinity of what appears to be roads that run to the south, north, west and east.	There is an unnamed river approximately half a mile north and a railroad approximately a quarter mile south of the Site that continues towards the northeast and terminates at a small building on the southern end of the railroad.
1891	Same.	Only the northeast portion of the railroad line is depicted, however the building the railroad terminated at is still present.
1893/ 1895	Same.	Same.
1896	Same.	Railroad line to the south is depicted again. Region to the east is unmapped.
1955	US-50 is visible bisecting the Site and El Dorado Forest is shown to the east including the eastern-most portion of the Site.	Lake Valley is labeled along with the Upper Truckee River to the north and El Dorado National Forest to the east. Twin Peaks and Angora Creek are also labeled to the north. More precise contour lines are also marked. There are several buildings along US-50 south of the Site, and a few to the southwest along an unnamed road that connects to US-50. Several other roads are shown south of US-50. There is a Checking Station labeled to the south along US-50. Saxon Creek is labeled to the southeast. Highway 89 is shown connecting to US-50 southwest of the Site.

1969	Pioneer Trail is labeled and within the eastern portion of the Site, connecting to US-50.	There has been significant development including roads and buildings in the surrounding region to the south, east, and west, as well as the Tahoe Paradise Golf Course to the south, and Lake Tahoe Golf Course to the north. Meyers is labeled and there is a Tahoe Paradise Junior College to the south. There is a lake visible to the west, near the Upper Truckee River.
1980	The Site is unmapped.	The western half of the map is unmapped.
1992	The Site is unmapped.	The north and western areas are unmapped. There are more roads to the east and additional roads and buildings to the southeast.
1994	Same.	There is a label, “BM 6340” near the southwest corner of the Site, presumably a survey benchmark with elevation 6,340 feet. There is an FS Station label to the southwest and Lake Valley State Recreation Area labeled to the north. Washoe Meadows State Park is labeled to the northwest.
2012	The Site is no longer shown within the El Dorado National Forest boundary, which has moved further south and east.	Surrounding streets are now labeled. Buildings are not depicted on this map.

Review of the historical topographical maps did not reveal potential RECs as a result of historical uses of the Site.

4.2 Historical Aerial Photographs

Aerial photographs frequently provide visual documentation of Site conditions at the time of the photographs. Activities such as dumping or industrial use can often be discerned through the review of aerial photographs. NCE reviewed historical aerial photographs and Google Earth photos for the years 1940, 1952, 1962, 1969, 1974, 1976, 1980, 1984, 1987, 1992, 1998, 2004, 2005, 2009, 2010, 2011, 2012 2013, 2016 and 2018 for the Site and surrounding areas. The historical aerial photographs were provided by EDR and are presented in Appendix C. A summary of the aerial photographs reviewed for the Site and surrounding property is presented in the following table.

Site Location			
Year	**Site Area**	**Adjoining Properties**	**Source(s)**
1940	Site is shown in the vicinity of a fork in an unpaved road (present day US-50). The Site is approximately 80% vegetated throughout.	There is a possible seasonal creek or drainage area adjacent to the Site to the west and further south and southeast. There are some buildings present to the south along both sides of the road and a few smaller roads to the southwest and southeast that connect to the main road (present day US-50). Surrounding areas similarly vegetated with approximately 80 to 85% coverage.	EDR and Google Earth
1952	Present day US-50 has been paved; a small unpaved road is also visible extending between US-50 and an unpaved Pioneer Trail.	There is some increase in development south along US-50 with additional roads stemming from the highway and additional buildings along both sides of US-50. There is what appears to be commercial building near the southeast corner of the Site along US-50, possibly a gas station, where the modern day 76 gas station is located.	EDR
1962	The small road visible in 1952 is still present; the original road connecting to US-50 visible in 1940 no longer connects to the highway. Present day Pioneer Trail has been constructed. Areas adjacent to US-50 have been graded and the Site now has only approximately 30% vegetative coverage. There is a road visible connecting to US-50 on the west near the southern perimeter of the Site and near the northern portion of the Site (present day Santa Fe Road). Several buildings have been constructed along that road. Another road to the west has also been constructed further north that connects to US-50 (present day Arapahoe St.).	Additional areas along US-50 to the south and north appear to have been graded. There are new roads to the west and southeast along with reduced vegetation and new buildings along those roads. What appear to be the early stages of residential developments are visible west of US-50. The area north of modern-day Tahoe Paradise Golf Course has been graded.	EDR

Site Location			
Year	**Site Area**	**Adjoining Properties**	**Source(s)**
1969	Same.	New roads have been constructed to the northeast and additional buildings to the south along US-50.	Google Earth
1974	Same.	Several large buildings have been constructed south of the Site on both sides of US-50. These are in the vicinity of the Meeks Lumber and Mini Storage facilities to the southwest, and north of the modern-day Tahoe Paradise Golf Course south of the Site.	EDR
1976	Same.	Same.	EDR
1980	Pioneer Trail appears paved.	All smaller roads appear paved. There are buildings visible along the roads and cars visible along US-50. What appear to be residences are visible west, northeast and southeast of the US-50/Pioneer Trail intersection.	EDR
1984	Same.	More vehicles are visible on US-50. There appear to be more buildings constructed to the west.	EDR
1987	Same.	Color aerial makes golf courses clearly visible to the southeast and northwest.	Google Earth
1992	Same.	Same.	Google Earth
1998	Same.	Same.	EDR and Google Earth
2004	Same.	Same.	Google Earth
2005	Same.	Same.	EDR and Google Earth
2007	Same.	Same.	Google Earth
2009	Same.	Same.	EDR and Google Earth
2010	Same.	Same.	Google Earth
2011	Same.	Same.	Google Earth
2012	Same.	New buildings have been constructed southeast of the Site at the southeast corner of the US-50/Santa Fe Road intersection in the Google Earth aerial.	EDR and Google Earth
2013	Same.	Same.	Google Earth

Site Location			
Year	**Site Area**	**Adjoining Properties**	**Source(s)**
2016	Same.	Same.	EDR and Google Earth.
2018	Same	Same.	Google Earth

4.3 Historical Fire Insurance Maps (Sanborn Maps)

Sanborn Maps constitute a source of prior site uses for many cities and towns in the United States. The maps were originally created to assist insurance underwriters in understanding the potential fire risk of structures requiring insurance; however, they are also useful in determining the previous uses of a site. Sanborn Maps often contain information relating to uses of individual structures, location of certain petroleum and chemical storage tanks, and the storage of other potentially toxic substances. Sanborn Maps begin their coverage in 1867 and continue through the 1990s.

NCE requested EDR to conduct a search for available Sanborn Maps. Searching an information source such as Sanborn Maps constitutes part of the due-diligence necessary for an ESA. Sanborn Maps covering the Site were not available; the report from EDR is available in Appendix D.

4.4 Property Tax Map

NCE requested Property Tax Map search performed on the Site (Appendix E). The search did not find a property tax map associated with the Site.

4.5 Building Permits

NCE requested building permit search performed on the Site (Appendix F). The search did not identify any building permits associated with the Site or adjoining properties.

4.6 City Directories

The EDR City Directories listings for the Site from 1992 to 2014 reveal a history of tenants and businesses in the vicinity of the Site. There are no listings for properties within the Site. City Directories may be found in Appendix G.

4.7 Environmental Lien and AUL Search

NCE requested an Environmental Lien and AUL search performed on the Site (Appendix H). The search did not find any environmental liens or AULs.

4.7.1 Chain-of-Ownership

Information obtained from deed information in the EDR Environmental Lien and AUL Search Report is presented in Appendix H. No deed information was identified for the Site.

5.0 DATABASE REVIEW

As part of this Phase I ESA, NCE conducted a records search using electronic database services provided by EDR. The Radius Report is a listing of facilities identified on select federal and state standard source environmental databases within the approximate minimum search distance (AMSD) specified by ASTM E1527-13 and AAI.

NCE reviewed each environmental database in the Radius Report. Shown in the table below is a list of the databases searched by EDR.

Databases Reviewed	Approx. Minimum Search Distance (AMSD; miles)	Number of Facilities Within AMSD
Federal Databases		
NPL	1.000	0
Proposed NPL	1.000	0
NPL LIENS	1.000	0
Delisted NPL	1.000	0
FEDERAL FACILTITY	0.500	0
SEMS	0.500	0
SEMS-ARCHIVE	0.500	0
CORRACTS	1.000	0
RCRA-TSDF	0.500	0
RCRA – LQG	0.250	0
RCRA – SQG	0.250	0
RCRA – VSQG	0.250	0
LUCIS	0.500	0
US ENG CONTROLS	0.500	0
US INST CONTROL	0.500	0
ERNS	0.125	0
State and Tribal Databases		
RESPONSE	1.000	0
ENVIROSTOR	1.000	0
SWF/LF	0.500	0
LUST	0.500	4
INDIAN LUST	0.500	0
CPS-SLIC	0.500	0
FEMA UST	0.250	0
UST	0.250	2
AST	0.250	0
INDIAN UST	0.250	0
VCP	0.500	0
INDIAN VCP	0.500	0
BROWNFIELDS	0.500	0
US BROWNFIELDS	0.500	0
WMUDS/SWAT	0.500	0

Databases Reviewed	Approx. Minimum Search Distance (AMSD; miles)	Number of Facilities Within AMSD
SWRCY	0.500	0
HAULERS	0.125	0
INDIAN ODI	0.500	0
ODI	0.500	0
DEBRIS REGION 9	0.500	0
IHS OPEN DUMPS	0.500	0
US HIST CDL	0.125	0
HIST Cal-Sites	1.000	0
SCH	0.250	0
CDL	0.125	0
CERS HAZ WASTE	0.250	4
US CDL	0.125	0
PFAS	0.500	0
Local Registered Storage Tanks		
SWEEPS UST	0.250	1
HIST UST	0.250	0
CERS TANKS	0.250	2
CA FID UST	0.250	1
Local Land Records		
LIENS	0.125	0
LIENS 2	0.125	0
DEED	0.500	0
Records of Emergency Release Reports		
HMIRS	0.125	0
CHMIRS	0.125	1
LDS	0.125	0
MCS	0.125	0
SPILLS 90	0.125	0
Other Ascertainable Records		
RCRA NonGen/ NLR	0.250	0
FUDS	1.000	0
DOD	1.000	0
SCRD DRYCLEANERS	0.500	0
US FIN ASSUR	0.125	0
EPA WATCH LIST	0.125	0
2020 COR ACTION	0.250	0
TSCA	0.125	0
TRIS	0.125	0
SSTS	0.125	0
ROD	1.000	0
RMP	0.125	0
RAATS	0.125	0
PRP	0.125	0
PADS	0.125	0

Databases Reviewed	Approx. Minimum Search Distance (AMSD; miles)	Number of Facilities Within AMSD
ICIS	0.125	0
FTTS	0.125	0
MLTS	0.125	0
COAL ASH DOE	0.125	0
COAL ASH EPA	0.500	0
PCB TRANSFORMER	0.125	0
RADINFO	0.125	0
HIST FTTS	0.125	0
DOT OPS	0.125	0
CONSENT	1.000	0
INDIAN RESERV	1.000	0
FUSRAP	1.000	0
UMTRA	0.500	0
LEAD SMELTERS	0.125	0
US AIRS	0.125	0
US MINES	0.250	0
ABANDONED MINES	0.250	0
FINDS	0.125	0
ECHO	0.125	0
UXO	1.000	0
DOCKET HWC	0.125	0
FUELS PROGRAM	0.250	0
CA BOND EXP. PLAN	1.000	0
CORTESE	0.500	0
CUPA Listings	0.250	6
DRYCLEANERS	0.250	0
EMI	0.125	0
ENF	0.125	0
FINANCIAL ASSURANCE	0.125	0
HAZNET	0.125	0
ICE	0.125	0
HIST CORTESE	0.500	2
HWP	1.000	0
HWT	0.250	0
MINES	0.250	0
MWMP	0.250	0
NPDES	0.125	0
PEST LIC	0.125	0
PROC	0.500	0
NOTIFY 65	1.000	0
UIC	0.125	0
UIC GEO	0.125	0
WASTEWATER PITS	0.500	0
WDS	0.125	0

Databases Reviewed	Approx. Minimum Search Distance (AMSD; miles)	Number of Facilities Within AMSD
WIP	0.250	0
MILITARY PRIVATE SITES	0.125	0
PROJECT	0.125	0
WDR	0.125	0
CIWQS	0.125	0
CERS	0.125	1
NON-CASE INFO	0.125	0
OTHER OIL GAS	0.125	0
PROD WATER PONDS	0.125	0
SAMPLING POINT	0.125	0
WELL STIM PROJ	0.125	0
HWTS	Site	0
MINES MRDS	0.125	0
EDR Exclusive Records		
EDR MGP	1.000	0
EDR HIST AUTO	0.125	1
EDR HIST CLEANER	0.125	0
Exclusive Recovered Government Archives		
RGA LF	0.125	0
RGA LUST	0.125	0
	TOTAL	25

Notes:
Sites may be listed in more than one database.

Review of the databases provided by EDR (Appendix A) shows that there are 25 records on facilities within up to a 1-mile radius of the Site (depending on search radius). It is noted here that facilities may be listed in multiple databases, resulting in multiple records for the same facility. The following sections detail the records on facilities located within 0.25 miles of the target property (Site). Details of the facilities located outside of the 0.25-mile radius can be found in the Radius Report (Appendix A).

5.1 LUST

Leaking Underground Storage Tank (LUST) facilities included in GeoTracker. GeoTracker is the SWRCB's data management system for facilities that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Analysis/Comment:

A review of the LUST list, as provided by EDR, indicates that there are four LUST facilities within approximately 0.5 miles of the Site.

1. Roadrunner, located at 2933 US Highway 50, adjacent to the southeastern boundary of the Site along US-50 has had two reported releases (Global IDs T0601704370 and

T0601750819). According to GeoTracker and the Radius Report, this facility reportedly had a gasoline release to soil case opened in 2002, a site assessment performed in 2003 and closure received in 2009 (El Dorado County Environmental Management Department, 2009) following excavation in 2004. A release of diesel to soil was discovered and stopped in 2012. Excavation was performed in 2012 and the case was closed in 2013 (El Dorado County Environmental Management Department, 2013).

Based on the nature of the release at this facility and proximity to the Site, the potential for environmental concerns from this facility to have impacted the Site appears low. However, there are no planned exactions at the Site within 500-feet of the Roadrunner facility and both releases were reportedly to soil and did not reach groundwater, so encountering impacts due to the releases at Roadrunner appears unlikely.

2. Meyers Shell Station, located at 1866 Santa Fe Road, adjacent to the southwest boundary of the Site reportedly had a release of gasoline that reached groundwater (Global ID T0601700147). According to information available on GeoTracker, pumping and treatment of groundwater was performed from 1999 to 2006. The most recent groundwater sampling event (fourth quarter 2009) reported methyl-tert butyl ether concentrations in several monitoring wells at concentrations ranging from 0.40 to 11 micrograms per liter (µg/L) at depths of 40 to 105-feet bgs.

Based on the nature of the release at this facility, limited lateral distribution, proximity and cross-gradient location relative to the Site, the potential for environmental concerns from this facility to have impacted the Site appears low. Additionally, there are no planned excavations at the Site within 700-feet of the Shell Station and encountering impacts due to the release at the Shell Station appears unlikely. It should be noted that this facility is also in the vicinity of the staging area located on Santa Fe Road.

3. Tahoe Mini Storage, located on US-50 south and less than 0.125 miles of the Site, had a gasoline release that reached groundwater was discovered in 1991 (Global ID T0601700107). During the 1960s and up to 1972 a gas station operated on the property between US-50 and the current Meeks Lumber store. The facility closed in the early 1970s, but the USTs were left in place. In 1989 up to 2,100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons as diesel (TPH-d) and up to 1,000 TPH-g (as gasoline) in soil was found surrounding the USTs. Investigations performed in 1995 and 1997 confirmed TPH impacts to soil down to approximately 11-feet bgs, and groundwater TPH-d concentrations of up to 120 µg/L with MTBE detections in a monitoring well adjacent to the property of up to 17 µg/L. The MTBE was attributed to a nearby Shell gas station. The case was closed in 2002 following removal of four USTs and excavation of surrounding soils in 1997. The facility is now a storm water treatment basin. Follow-up groundwater sampling in 2002 did not detect MTBE, TPH-g or TPH-d (Lahontan Region California Regional Water Quality Control Board, 2002).

Based on the nature of the release at this facility, proximity and upgradient location relative to the Site, the potential for environmental concerns from this facility to have impacted the Site appears low.

4. Paradise Chevron, located at 2986 US-50, less than 0.125 miles south of the Site, had a diesel release to groundwater discovered and stopped in 1990 (Global ID T0601700144). The case was closed in 2000. Information available on GeoTracker indicates the release was of waste oil/gasoline from a 550-gallon UST and that initial

sampling of soil had reported TPH-d concentrations of 40 mg/kg and oil and grease concentrations of 1,700 mg/kg. Groundwater had a reported TPH-g concentration of 0.26 µg/L, reported concentrations of 1.6 µg/L, 1.7 µg/L and 2.3 µg/L of toluene, ethylbenzene, and xylenes, respectively (benzene was non-detect), and a reported MTBE concentration of 410 µg/L. Approximately 40-50 cubic yards of soil were over-excavated, and four monitoring wells were installed in May 1999. At the time of closure, groundwater was non-detect for TPH-g and BTEX compounds, and MTBE had a reported concentration of 0.64 µg/L (California Regional Water Quality Control Board Lahontan Region, 2000).

Based on the nature of the release at this facility, proximity and upgradient location relative to the Site, the potential for environmental concerns from this facility to have impacted the Site appears low.

5.2 UST

UST: The database includes registered USTs regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). Data comes from the SWRCB Hazardous Substance Storage Container Database.

Analysis/Comment:

A review of the UST list, as provided by EDR, indicates that there are two UST facilities within approximately 0.25 miles of the Site:

1. Roadrunner Gas; see also number 1 in Section 5.1.

2. Tahoe Paradise Chevron; see also number 4 in Section 5.1.

5.3 CERS HAZ WASTE

CERS HAZ WASTE: List of facilities in the California Environmental Protection Agency (CalEPA) Regulated Sites Portal which fall under the Hazardous, Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA Low Quantity (LQ) Hazardous Waste (HW) Generator programs.

Analysis/Comment:

A review of the CERS HAZ WASTE list, as provided by EDR and dated 10/21/2019, indicates that there are four CERS HAZ WASTE facilities within approximately 0.25 mile of the Site.

1. Roadrunner Gas; see also number 1 in Section 5.1 and number 1 in Section 5.2.

2. Steve's Transmission, 2950 US-50, located near the Meyer's Shell Station and southwest of the Site. There are no documented violations in the database.

Based on the data available, the potential for environmental concerns from this facility to have impacted the Site appears low.

3. Meek's Lumber and Hardware, 2970 US-50, located less than 0.125-miles southwest of the Site and adjacent to the Tahoe Mini Storage. There is one violation documented from 2019 including failure to post information.

Based on the data available, the potential for environmental concerns from this facility to have impacted the Site appears low.

4. Tahoe Paradise Chevron; see also number 4 in Section 5.1 and number 2 in Section 5.2. There are several violations documented for this facility from 2015 through 2017 including failure of fill sensors and failure to remove contents of a spill bucket following a leak.

5.4 SWEEPS UST

The Statewide Environmental Evaluation and Planning System (SWEEPS) UST database includes UST listings updated and maintained by a company contracted by the SWRCB in the early 1990s. The listing is no longer updated or maintained.

Analysis/Comment:

A review of the SWEEPS UST list, as provided by EDR and dated 06/01/1994, indicates that there is one SWEEPS UST facilities within approximately 0.25 miles of the Site:

1. Tahoe Paradise Chevron; see also number 4 in Section 5.1, number 2 in Section 5.2 and number 4 in Section 5.3.

5.5 CERS TANKS

The CERS TANKS database is a list of facilities in the CalEPA Regulated Site Portal which fall under the Aboveground Petroleum Storage and UST regulatory programs.

Analysis/Comment:

A review of the CERS TANKS list, as provided by EDR and dated 10/21/2019, indicates that there are two CERS TANKS facilities within approximately 0.25 miles of the Site.

1. Roadrunner Gas; see also number 1 in Section 5.1, number 1 in Section 5.2, and number 1 in Section 5.3.

2. Tahoe Paradise Chevron; see also number 4 in Section 5.1, number 2 in Section 5.2, number 4 in Section 5.3, and number 1 in Section 5.4.

5.6 CA FID UST

The Facility Inventory Database (FID) contains active and inactive UST locations.

Analysis/Comment:

A review of the CA FID list, as provided by EDR and dated 10/31/1994, indicates that there is one CA FID facility within approximately 0.25 miles of the Site.

1. Tahoe Paradise Chevron; see also number 4 in Section 5.1, number 2 in Section 5.2, number 4 in Section 5.3, number 1 in Section 5.4, and number 2 in Section 5.5.

5.7 CHMIRS

The California Hazardous Material Incident Report System (CHMIRS) contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source of the data is the California Office of Emergency Services (OES).

Analysis/Comment

A review of the CHMIRS list, as provided by EDR and dated 05/15/2019, indicates that there is one CHMIRS facility within approximately 0.25 miles of the Site.

1. Not reported OES incident Number 10-5673, US-50 and Pioneer Trail, located within the Site. The record within the database is from 2010 and was reportedly a 100-gallon sewage release into the roadway caused by a grease blockage within the main line. The release was contained within the storm drain and cleaned up by the reporting party.

Based on the data available, the potential for environmental concerns from this facility to have impacted the Site appears low.

5.8 CUPA

California's Secretary for Environmental Protection established the Certified Unified Program Agency (CUPA) database to unify the hazardous materials and hazardous waste regulatory programs as required by Chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections and enforcement activities.

Analysis/Comment

A review of the CUPA list, as provided by EDR, indicates that there are six CUPA facilities within approximately 0.25 miles of the Site.

1. Roadrunner Gas; see also number 1 in Section 5.1, number 1 in Section 5.2, number 1 in Section 5.3, and number 1 in Section 5.5.

2. Steve's Transmission; see also number 2 in Section 5.3.

3. Bob's Heating, 1802 Santa Fe Ave. #4, is a HW generator located less than 0.125-miles west of the Site and reportedly has less than 55-gallons stored.

Based on the data available, the potential for environmental concerns from this facility to have impacted the Site appears low.

4. STPUD North Apache B, 1922 Apache Ave. is located approximately 0.125 miles-east of the Site.

Based on the data available, the potential for environmental concerns from this facility to have impacted the Site appears low.

5. Meek's Lumber and Hardware; see also number 3 in Section 5.3.

6. Tahoe Paradise Chevron; see also number 4 in Section 5.1, number 2 in Section 5.2, number 4 in Section 5.3, number 1 in Section 5.4, number 2 in Section 5.5 and number 1 in Section 5.6.

5.9 HIST CORTESE

This database includes facilities designated by the SWRCB, the Integrated Waste Board, and the Department of Toxic Substances Control (DTSC). It is no longer updated by the state agency.

Analysis/Comment:

A review of the HIST CORTESE list, as provided by EDR and dated 04/01/2001, indicates that there are two HIST CORTESE facilities within approximately 0.25 miles of the Site.

1. Meyers Shell Station; see also number 2 in Section 5.1.

2. Paradise Chevron; see also number 4 in Section 5.1, number 2 in Section 5.2, number 4 in Section 5.3, number 1 in Section 5.4, number 2 in Section 5.5, number 1 in Section 5.6 and number 6 in Section 5.8.

5.10 CERS

The CalEPA Regulated Site (CERS) Portal database combines data about environmentally regulated facilities in California into a single database. It combines data from a variety of state and federal databases and provides and overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials.

Analysis/Comment:

A review of the CERS list, as provided by EDR and dated 10.21.2019, indicates that there is one CERS facility within approximately 0.125 miles of the Site.

1. Roadrunner Gas; see also number 1 in Section 5.1, number 1 in Section 5.2, number 1 in Section 5.3, number 1 in Section 5.5, and number 1 in Section 5.8.

5.11 EDR Hist Auto

EDR searches selected national collections of business directories and has collected listings of potential gas station/filling station/service station facilities to create the EDR Hist Auto database.

Analysis/Comment:

A review of the EDR Hist Auto list, as provided by EDR, indicates that there is one EDR Hist Auto facility within approximately 0.125 miles of the Site.

1. Jerrys Shell Service, US-50 and Santa Fe Ave., this facility is located in the same area as the Meyers Shell Station and Steve's Transmission. It is documented as Jerrys Shell Service from 1969 to 1971, and Meyers Shell from 1987 to 1993.

6.0 INTERVIEWS

The following table presents a summary of the individuals contacted or to whom requests for documentation were made as part of this assessment:

Name	Affiliation	Telephone No.	Relationship to the Site
Donaldo Palaroan	Senior Civil Engineer – El Dorado County	(530) 573-7920	Project Manager

Interviews were not conducted with the current owners of the Site. A Pre-Survey Questionnaire was provided to the County via electronic mail on April 15, 2020. The survey was returned via electronic mail on Thursday April 30, 2020 by County representative, Mr. Donaldo Palaroan. The survey is included as Appendix I and responses provided do not indicate any known or potential sources of contamination within or in the vicinity of the Site.

7.0 SITE RECONNAISSANCE

As noted in Section 1.2.2 Scope, a reconnaissance of the Site and surrounding vicinity was conducted by NCE on May 15, 2020.

The weather conditions at the time of the Site visit were clear skies, with no weather-induced limitations to NCE's visit. Photographs taken as part of the site visit are provided in the attached Photo Log.

7.1 Chemical Storage and Usage

No chemical storage tanks were observed on the Site. A propane tank was observed at the 76 gas station south of the Site.

7.2 Bulk Storage Tanks

No bulk storage tanks were observed within the Site boundary; however a propane tank was observed at the 76 Station at the northeast corner of US-50 and Apache Avenue.

7.3 Site Waste and Wastewater

Solid Waste

NCE did not observe evidence of improper solid waste disposal at the Site.

Sanitary Sewage

NCE did not observe evidence of sanitary sewer systems associated with the Site.

Hazardous Waste

No indications of hazardous waste were observed at the Site.

7.4 Stained Soil, Stained Pavement, or Stressed Vegetation

No stained soils or stressed vegetation were observed.

7.5 Liquid Discharges

No indications of liquid discharges were observed at the Site.

7.6 Pools of Liquid

NCE did not observe any standing surface water or pools containing liquids likely to be hazardous substances or petroleum products during the Site visit.

7.7 Pits, Ponds, or Lagoons

NCE did not observe any natural depressions in the ground surface that were likely to hold liquid or sludge containing hazardous substances or petroleum products during the site visit.

7.8 Wells

No features indicative of the presence of groundwater wells were observed at the Site.

7.9 On-Site Fill

NCE did not identify any unexpected on-site fill.

7.10 Drums and Containers for Storing Waste

No drums or containers for storing waste were observed at the Site.

7.11 Floor Drains and Sumps

There are no buildings currently on the Site. NCE did not identify any floor drains or sumps within the boundaries of the Site.

7.12 Odors

NCE did not identify noxious or foul odors suspected to represent an environmental concern in connection with the Site.

7.13 Air Emissions

NCE did not observe processes or equipment emitting noticeable vapors or fumes from the Site.

7.14 Polychlorinated Biphenyls (PCBs)

PCBs can be present in coolants or lubricating oils used in older electrical transformers, hydraulic systems, and other similar equipment. TSCA extended regulatory control over the use of PCBs to the EPA. In November 1979, the EPA generally prohibited the domestic manufacture of PCBs in electromagnets, transformers, and heat-transfer and hydraulic equipment. If present, features such as transformers, are inspected for obvious leaks and physical evidence such as stains or cracks indicating possible current or past leaks. There were no transformers observed at the Site, however several utility boxes possibly housing transformers were observed near the US-50/Pioneer Trail intersection.

7.15 Asbestos-Containing Material (ACM)

Many building materials such as structural steel fireproofing, acoustic finishes, ceiling texture, ceiling tile, suspended ceiling panels, textured and elastomeric paints, window putty, flexible duct connectors, rubbery pipe insulation tape, building wiring insulation, pipe, boiler, and vessel insulation, interior plaster, and duct insulation commonly contained asbestos until the late 1970s. Other types of ACM were commonly used until the middle to late 1980s, such as drywall joint compound, exterior stucco, sheet vinyl flooring, vinyl flooring products, flooring and other mastics (adhesives), roof tiles and coatings, asbestos-cement products and flues.

Under the TSCA, EPA banned the use of asbestos in many products in 1993. However, several categories of building products were not subject to the ban. Thus, existing and even new

buildings may lawfully contain ACM. In addition, materials that contain greater than one percent asbestos fibers are considered regulated ACM and must be handled according to EPA and Occupational Safety and Health Administration (OSHA) regulations.

ACM were not identified by NCE during the site visit and there were no buildings observed at the Site. Moreover, ACM were not included in the Phase I ISA scope of work.

7.16 Lead-in-Drinking Water

The major source of lead in drinking water is leaching of lead from household plumbing materials or water service lines used to bring water from the main to the home or building. Lead can leach into drinking water through contact with the plumbing, solder, fixtures and faucets (brass) and fittings. There were no buildings observed at the Site.

7.17 Radon

Radon is a naturally occurring radioactive gas. It is released during the natural decay of uranium, radium and thorium in soil, rock and groundwater beneath homes and buildings. As uranium naturally breaks down, it releases radon gas, which is a colorless, odorless, radioactive gas. Radon enters homes through direct floors, cracks in concrete walls and floors, floor drains, and sumps. When radon becomes trapped in buildings and concentrations accumulate and increase indoors, exposure to radon can become a concern. Its occurrence in the state of California is influenced primarily by geology.

Based on statistical information maintained within the EPA dated 1993, radon concentrations in El Dorado County have a medium rating with an indoor radon average of 2-4 picocuries per liter (pCi/L). These concentrations are less than the 4.0 pCi/L action level established by EPA (EPA 1993). Based on this information, it is unlikely that radon represents an environmental concern to the Site.

7.18 Lead-Based Paint (LBP)

Painted structures at the Site include traffic lights and utility boxes near the US-50/Pioneer Trail intersection.

8.0 PSI FOR ADL

A PSI for ADL was performed within unpaved Caltrans and County ROW in areas currently proposed to be graded (Plate 3). The assessment was not conducted in any of the three laydown areas. The purpose of the ADL PSI was to evaluate the occurrence and distribution of ADL and to support an assessment of the need for mitigation measures in bid documents to address potential worker safety and management of soils during the proposed construction activities. To accomplish this a total of 31 borings were advanced, 88 samples were collected, and analytical data was compared to human health-based screening values and the Caltrans and California Department of Toxic Substances Control (DTSC) Agreement Criteria, as discussed in Section 8.1 below.

8.1 Screening Criteria

Human Health-Based Screening Values

The following currently available published regulatory screening values for lead and compounds in soil were used as a comparison to analytical data to assess potential impacts to workers and future Site users:

1. May 2020 EPA Regional Screening Values [RSLs][4] in a residential (400 mg/kg), industrial (800 mg/kg) and construction worker (no value listed) setting

2. June 2020 DTSC-modified Screening Levels [DTSC-modified SLs][5] in a residential (unrestricted use) (80 mg/kg) and commercial/industrial (320 mg/kg) setting

EPA ProUCL 5.1 software was used to calculate the sample mean (average) and 95% upper confidence limit (UCL) of the mean concentration to obtain an exposure point concentration (EPC) of the complete data set and the data set for each depth profile. The EPC is a conservative estimate of the average chemical concentration in an environmental medium.

Caltrans and DTSC Agreement

The Project or portions of the Project may qualify for the soil management criteria laid out in the June 30, 2016 Agreement between the DTSC and Caltrans. The Agreement provides guidance and screening criteria to address ADL on state highway projects (DTSC, 2016) and requires all ADL-contaminated soils with a lead concentration above unrestricted (residential) use (currently 80 mg/kg based on the most conservative screening value6) to be properly managed by Caltrans. The management activities to which this Agreement generally applies are the stockpiling, disposal, tracking, transportation, and final placement of ADL-contaminated soil. Local municipalities are able to work within the guidelines and criteria that are established in the Agreement where the work is being performed under Caltrans oversight.

[4] https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables
[5] https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf
[6] June 2020 DTSC-modified SL

The Soluble Threshold Limit Concentration (STLC) for lead is 5 mg/L. Per the Agreement, if a substance is 10 times the STLC value, a waste extraction test (WET) should be performed. The California (CA)-WET is a test method used to determine whether a waste is a toxic hazardous waste by simulating a landfill setting using simulated landfill leachates. As shown in Table 1 below, a DI-WET, which is performed using deionized water as the extractant, may also be needed to identify the minimum coverage requirement specified in the Agreement.

Table 1: Minimum Cover Requirements for ADL-contaminated Soil Based on Extractable and Total Lead Concentrations (95% UCL)

Extractable Lead Concentration		Total Lead Concentration	Minimum Cover Requirement
Less than 5 milligrams per Liter (mg/L) CA-WET	and	Less than 320 mg/kg	No cover requirement
Greater than 5 mg/L CA- WET and equal to or below 1.5 mg/l DI-WET	or	Greater than 320 mg/kg but equal to or below 1,600 mg/kg	One foot of clean soil**
Greater than 1.5 mg/L DI- WET but equal to or below 150 mg/l DI-WET	or	Greater than 1,600 mg/kg but equal to or below 3,200 mg/kg	Pavement structure
Greater than 150 mg/L DI- WET	or	Greater than 3,200 mg/kg	Subject to full regulation as hazardous waste

8.2 Field Work

Prior to conducting field work, an encroachment permit was obtained from Caltrans which is included in Appendix J. Prior to subsurface investigation activities the Site was marked, and Underground Service Alert was notified in accordance with state law. A private utility locator was also obtained to identify and mark utility lines. The private utility locating work was performed on July 21, 2020 and soil sample collection was performed from July 21, 2020 through July 23, 2020.

A total of 31 borings were advanced using a hand auger and 88 samples were collected and analyzed for total lead. Sampling was performed in accordance with NCE's April 27, 2020 Memorandum, which was approved by Caltrans on April 28, 2020. Samples were collected at depths of 0 to 0.5-feet bgs, 1.5 to 2-feet bgs, and 2.5 to 3-feet bgs. Boring locations are shown on Plate 3. The auger was cleaned between samples using Alconox detergent and deionized (DI) water to avoid cross-contamination. Samples were placed in laboratory-provided jars and submitted under chain-of-custody procedures in a climate-controlled cooler to a California-certified laboratory for analysis of lead by EPA Method 6020. Analytical results are summarized in Table 2 in Section 8.3 below. Complete laboratory reports are included in Appendix K.

Investigative derived waste soils and wash waters were containerized in labeled 55-gallon sealed steel drums. The wastes were profiled for appropriate off-site disposal at an approved landfill as non-hazardous. Waste soil was disposed at the Hay Road Landfill in Vacaville, California and the wash water was processed at the InStrat, Inc. facility in Rio Vista, California.

8.3 ADL Analytical Data

Analytical data are shown on Plate 3 and summarized in Table 2 below.

Table 2: Lead in Soil (mg/kg)

Sample Location ID	0-0.5 ft. bgs	1.5-2 ft. bgs	2.5-3 ft. bgs
PT1	56	12	6.7
PT2	55	10	6.3
PT3	80	4.6	3.8
PT4	49	10	3
PT5	56	5.6	4.7
PT6	34	5.4	9.9
PT7	**86**	6.3	4.9
PT8	**190**	34	31
PT9	41	4.5	4
PT10	52	7.9	5.4
PT11	29	4.7	5.3
PT12	46	9.1	5.6
PT13	72	5.5	5.3
PT14	46	62	78
PT15	6	**96**	4.1
PT16	51	4.1	3.7
PT17	52	6.2	5.2
PT18	40	4.2	4.2
PT19	75	6.2	5.2
PT20	42	3.5	3
PT21	50	4	3.6
PT22	58	6.2	3.1
PT23	46	5.3	-
PT24	19	-	-
PT25	16	23	13
PT26	44	4.9	4.6
PT27	6.8	7.1	3.1
PT28	17	4.3	3.1
PT29	27	5.6	3.8
PT30	6.5	6.5	3.5
PT33	63	-	-

"-" means sample could not be collected due to subgrade refusal.
Bolded values indicate exceedance of a screening value.

8.3.1 CA-WET and DI-WET Analytical Data

Out of the 88 soil samples collected, 15 had reported lead concentrations over 50 mg/kg, or 10 times the STLC, as discussed in Section 8.1. Six of the 15 soil samples were selected for CA-WET analysis based on being generally representative of the soil samples with reported lead concentrations that ranged from 50 to 190 mg/kg. A DI-WET analysis was performed on the sample with the highest reported lead concentration as a conservative representation of all the samples. A summary of the WET analytical data is shown in Table 3 below.

Table 3: CA and DI-WET Lead Data				
Sample Location ID	Sample Depth (feet bgs)	Lead (mg/kg)	CA-WET STLC (mg/L)	DI-WET STLC (mg/L)
PT2	0-0.5	55	2.9	-
PT13	0-0.5	72	3.9	-
PT3	0-0.5	80	3.5	-
PT7	0-0.5	86	4.5	-
PT15	1.5-2.0	96	**7.0**	-
PT8	0-0.5	190	**11**	0.022

"-" means sample was not analyzed by that method.
Bolded values indicate an exceedance of the Agreement's "no cover requirement" criteria of less than 5 mg/L by CA-WET analysis.

These reported CA-WET and DI-WET concentrations can be conservatively applied to the remaining samples, where the highest reported STLC concentration is applied to all samples with a lower reported lead concentration in soil until reaching the next sample analyzed by CA or DI-WET methods. The strategy in doing this is to extrapolate conservative CA-WET and DI-WET values for the entire ADL data set. See Table 4 below.

Table 4: Applying CA-WET Data to Lead in Soil Concentrations				
Sample Count	Sample Location ID	Sample Depth (ft. bgs)	Lead by EPA Method 6020 (mg/kg)	Lead by CA-WET (mg/L)
1	PT4	2.5	3	2.9
2	PT20	2.5	3	2.9
3	PT22	2.5	3.1	2.9
4	PT27	2.5	3.1	2.9
5	PT28	2.5	3.1	2.9
6	PT20	1.5	3.5	2.9
7	PT30	2.5	3.5	2.9
8	PT21	2.5	3.6	2.9
9	PT16	2.5	3.7	2.9
10	PT3	2.5	3.8	2.9
11	PT29	2.5	3.8	2.9
12	PT21	1.5	4	2.9
13	PT9	2.5	4	2.9
14	PT16	1.5	4.1	2.9
15	PT15	2.5	4.1	2.9
16	PT18	1.5	4.2	2.9
17	PT18	2.5	4.2	2.9
18	PT28	1.5	4.3	2.9
19	PT9	1.5	4.5	2.9
20	PT3	1.5	4.6	2.9
21	PT26	2.5	4.6	2.9
22	PT11	1.5	4.7	2.9
23	PT5	2.5	4.7	2.9
24	PT26	1.5	4.9	2.9
25	PT7	2.5	4.9	2.9
26	PT17	2.5	5.2	2.9
27	PT19	2.5	5.2	2.9
28	PT23	1.5	5.3	2.9
29	PT11	2.5	5.3	2.9
30	PT13	2.5	5.3	2.9
31	PT6	1.5	5.4	2.9
32	PT10	2.5	5.4	2.9
33	PT13	1.5	5.5	2.9
34	PT5	1.5	5.6	2.9
35	PT29	1.5	5.6	2.9
36	PT12	2.5	5.6	2.9
37	PT15	0	6	2.9
38	PT17	1.5	6.2	2.9
39	PT19	1.5	6.2	2.9
40	PT22	1.5	6.2	2.9
41	PT7	1.5	6.3	2.9
42	PT2	2.5	6.3	2.9
43	PT30	0	6.5	2.9
44	PT30	1.5	6.5	2.9
45	PT1	2.5	6.7	2.9
46	PT27	0	6.8	2.9
47	PT27	1.5	7.1	2.9
48	PT10	1.5	7.9	2.9
49	PT12	1.5	9.1	2.9
50	PT6	2.5	9.9	2.9
51	PT2	1.5	10	2.9
52	PT4	1.5	10	2.9
53	PT1	1.5	12	2.9

Sample Count	Sample Location ID	Sample Depth (ft. bgs)	Lead by EPA Method 6020 (mg/kg)	Lead by CA-WET (mg/L)
54	PT25	2.5	13	2.9
55	PT25	0	16	2.9
56	PT28	0	17	2.9
57	PT24	0	19	2.9
58	PT25	1.5	23	2.9
59	PT29	0	27	2.9
60	PT11	0	29	2.9
61	PT8	2.5	31	2.9
62	PT6	0	34	2.9
63	PT8	1.5	34	2.9
64	PT18	0	40	2.9
65	PT9	0	41	2.9
66	PT20	0	42	2.9
67	PT26	0	44	2.9
68	PT12	0	46	2.9
69	PT14	0	46	2.9
70	PT23	0	46	2.9
71	PT4	0	49	2.9
72	PT21	0	50	2.9
73	PT16	0	51	2.9
74	PT10	0	52	2.9
75	PT17	0	52	2.9
76	PT2	0	55	2.9
77	PT1	0	56	3.9
78	PT5	0	56	3.9
79	PT22	0	58	3.9
80	PT14	1.5	62	3.9
81	PT33	0	63	3.9
82	PT13	0	72	3.9
83	PT19	0	75	3.9
84	PT14	2.5	78	3.9
85	PT3	0	80	3.9
86	PT7	0	86	4.5
87	PT15	1.5	96	7
88	PT8	0	190	11

8.3.2 Statistical Summary

Table 5: Statistical Summary of UCLs

Sample Depth (ft. bgs)	Number of Samples	95% UCL Lead in Soil (mg/kg)	95% UCL CA-WET STLC (mg/L)
0-3	88	38.15 by Chebyshev	3.4 by Modified-t
0-0.5	31	74.97 by Chebyshev	3.9 by Modified-t
1.5-2	29	28.84 by Chebyshev	3.3 by Modified-t
2.5-3	28	20.53 by Chebyshev	3.0 by Modified-t

8.4 ADL Analytical Data Discussion

Three of the 88 soil samples collected had reported lead concentrations that exceeded the DTSC-modified SL for unrestricted use/residential setting (80 mg/kg). These three samples had lead concentrations that ranged from 86 to 190 mg/kg; two of these were surface samples (PT7 and PT8), and one was collected from 1.5-feet bgs (PT15). All analytical data reported was below human health screening criteria for a commercial/industrial setting (320 mg/kg).

Each of the sample locations also had reported lead concentrations that generally attenuated with depth with the exception of sample location PT14 suggesting with reasonable certainty that shallow soils have some impacts from lead that is quickly attenuated to background concentrations. Sample location PT14 is in the vicinity of the northeast corner of the US-50/Pioneer Trail intersection, which currently has several modern improvements including a traffic light, several utility boxes on a concrete pad, crosswalk light, and several road signs. Considering the recent construction work performed in that area, it is likely the soils in the vicinity of PT14 have been disturbed and the observed lead concentration trend at that location is an anomaly due to the soil disturbance. In addition, while at the time of writing of this report construction drawings are still at a preliminary stage, proposed excavations in in the vicinity of PT14 are shallow (less than 3-feet) and the completed grade will include 3-4 feet of imported fill. Considering that proposed excavation work in the vicinity of PT14 is shallow and less than 3-feet, even if lead concentrations increased with depth, reported lead concentrations to 3-feet bgs were below the screening criteria for unrestricted use.

The EPC for the entire sample data set was 38.15 mg/kg and EPCs for each depth profile ranged from 20.53 mg/kg (2.5 to 3-feet bgs) to 74.97 mg/kg (0 to 0.5-feet bgs) which are below human health screening criteria for unrestricted use and meet the criteria for “no cover requirement” in the Agreement’s minimum coverage requirement (Table 1 shown in Section 8.1), of less than 320 mg/kg and a CA-WET value of less than 5 mg/L.

9.0 FINDINGS AND CONCLUSIONS

9.1 Findings

9.1.1 ADL PSI Findings

Three of the 88 samples collected (two surface and one sample collected from 1.5-feet bgs) exceeded the screening value for unrestricted use (80 mg/kg). However, no sample results exceeded the screening criteria for a commercial/industrial setting (320 mg/kg). The EPCs for the entire data set (38.15 mg/kg) as well as each depth profile (0-0.5-feet bgs: 74.97 mg/kg, 1.5-2-feet bgs: 28.84 mg/kg, and 2.5-3-feet bgs: 20.53 mg/kg)are below human health screening criteria for unrestricted use (80 mg/kg) and meet the no coverage required criteria in Table 1 of the Agreement (Section 4.1) (less than 320 mg/kg and a CA-WET value of less than 5 mg/L).

All sample locations appeared to demonstrate that elevated lead concentrations near the surface attenuated with depth with the exception of one sample location (PT14) near the northeast corner of the US-50 and Pioneer Trail intersection. This location was in the vicinity of several improvements including a traffic light, utility boxes, and road signs. These improvements indicate the area had likely undergone construction in the recent past resulting in disturbed soils and is a likely anomaly. The nature of lead distribution at PT14 is likely due to the disturbed soil and prior to the disturbance the lead distribution was likely similar to the distribution observed at the other sample locations (higher concentrations in the shallow samples that attenuate by the 2.5 to 3-feet bgs sample). Based on this, it is not expected that lead concentrations would continue to increase with depth at PT14. In addition, all samples down to 3-feet bgs at PT14 were below the screening value for unrestricted use and proposed excavations to remove the improvements in the vicinity of PT14 are anticipated to be less than 3-feet bgs. The final grade at PT14 will also include 3-4 feet of fill.

9.1.2 Phase I ISA Findings

There were no RECs identified during review of the pre-survey questionnaire, historical topographic maps, historical aerials, or other historical record reports related to the Site. Impacts to soil and groundwater from total petroleum hydrocarbons (TPHs) in the vicinity of several facilities near the southern perimeter of the Site were identified (HRECs). Database records reviewed in the Radius Report provided by EDR (Appendix A), along with documents available on GeoTracker[7] provided additional details about the some of the nearer facilities detailed below:

1. Roadrunner, located at 2933 US-50, adjacent to the southeastern boundary of the Site along US-50 has had two reported releases (GeoTracker Global IDs T0601704370 and T0601750819). According to GeoTracker and the Radius Report, this facility reportedly had a gasoline (TPH-g) release to soil in 2002, a site assessment performed in 2003 and received closure in 2009 (El Dorado County Environmental Management

[7] State Water Resources Control Board GeoTracker Website: https://geotracker.waterboards.ca.gov/

Department, 2009) following excavation of impacted soils in 2004. A release of diesel to soil was also discovered and stopped in 2012. Excavation was performed in 2012 and the facility received closure in 2013 (El Dorado County Environmental Management Department, 2013).

2. Meyers Shell Station/Jerry's Shell Station, located at 1866 Santa Fe Road and adjacent to the southwest boundary of the Site, reportedly had a release of TPH-g that reached groundwater (GeoTracker Global ID T0601700147). According to information available on GeoTracker, pumping and treatment of groundwater was performed from 1999 to 2006. The most recent groundwater sampling event (fourth quarter 2009) identified methyl-tert butyl ether levels in several monitoring wells reported at concentrations ranging from 0.40 to 11 micrograms per liter (µg/L) at depths of 40 to 105-feet below ground surface (bgs).

3. Tahoe Mini Storage, located on US-50 south and less than 0.125 miles south of the Site, had a gasoline release that reached groundwater discovered in 1991 (GeoTracker Global ID T0601700107). During the 1960s and early 1970s a gas station operated on the property between US-50 and the current Meeks Lumber store. The facility closed in the early 1970s, but the USTs were left in place. In 1989 diesel (TPH-d) TPH-g was identified in soil surrounding the USTs. Investigations performed in 1995 and 1997 confirmed TPH impacts to soil down to approximately 11-feet bgs, and TPH-d and methyl tert-butyl ether (MTBE) reported in a monitoring well adjacent to the property. The MTBE was attributed to a nearby Shell gas station. The facility received closure in 2002 following removal of four USTs and excavation of surrounding soils in 1997. The facility is now a storm water treatment basin. Follow-up groundwater sampling in 2002 did not detect MTBE, TPH-g or TPH-d (Lahontan Region California Regional Water Quality Control Board, 2002).

4. Paradise Chevron, located at 2986 US-50, less than 0.125 miles south of the Site, had a TPH-d release to groundwater discovered and stopped in 1990 (GeoTracker Global ID T0601700144). The facility received closure in 2000. Information available on GeoTracker indicates the release was of waste oil/gasoline from a 550-gallon UST and that initial sampling of soil had reported TPH-d concentrations of 40 mg/kg and oil and grease concentrations of 1,700 mg/kg. Groundwater had a reported TPH-g concentration of 0.26 µg/L and a reported MTBE concentration of 410 µg/L. Approximately 40-50 cubic yards of soil were over-excavated, and four monitoring wells were installed in May 1999. Groundwater sampling resulted in non-detects for benzene, toluene, ethylbenzene and xylenes (BTEX) and MTBE, and MTBE concentrations were below the Secondary Maximum Contaminant Level.

Based on the nature of the releases at these facilities and their proximity and upgradient location relative to the Site, the potential for environmental concerns from these facilities to have impacted the Site appears low. Based on the current design there are no excavations planned within 500-feet of the nearest facility. It should be noted that the proposed staging area on Santa Fe Road is in proximity to US-50 and several of the facilities listed above including the Meyers Shell Station (Plate 2).

9.2 Conclusions

9.2.1 ADL PSI Conclusions

The calculated EPCs for the ADL data collected for the entire Site (38.15 mg/kg) and for each depth profile (0-0.5-feet bgs: 74.97 mg/kg, 1.5-2-feet bgs: 28.84 mg/kg, and 2.5-3-feet bgs: 20.53 mg/kg) were below applicable screening criteria (80 mg/kg) for unrestricted use. All but one sample location generally showed lead concentrations attenuated with depth. The sample location with reported lead concentrations that increased with depth is likely an anomaly due to recent disturbance and all reported lead concentrations at that location were below unrestricted use criteria. In addition, anticipated excavation at that location does not exceed the depth of sampling. Based on these, it appears that the Site meets the "no coverage requirement" criteria in Table 1 of the Agreement. Regardless, as discussed in Sections 1.1 and 4.4, portions of the Site are anticipated to be covered by pavement and clean imported fill post-construction.

If the Project or portions of the Project are covered under the Agreement, Caltrans should be involved in soil management as applicable. Similarly, if the Project or portions of the Project are not covered by the Agreement, as the EPC for lead in soil for the Site does not exceed the published health-based screening value for unrestricted use, excavated soils would not be considered hazardous waste and would not have a cover requirement. Regardless, from a risk management perspective, appropriate measures should be taken by the contractor to protect worker health as it pertains to heavy metals in soil. For risk management purposes it is also recommended that excavated soils requiring off-haul be stockpiled and profiled prior to disposal at an appropriate waste disposal facility and should not be re-used for any purpose.

9.2.2 Phase I ISA Conclusions

It is possible that excavation work performed within the Site, particularly near the southern perimeter in the areas around the Shell Station and Roadrunner, may encounter fuel-impacted soil and/or groundwater. While final construction drawings are not available at the time of writing this report, there are currently no planned excavations within 500-feet of these facilities.

9.3 Data Gaps

No interviews with state or federal agencies were conducted as part of this Phase I ESA. It is unlikely that information provided by these individuals would have had an impact on the conclusions made by this Phase I ESA.

10.0 LIMITATIONS

Information presented in this report does not confirm the presence or absence of subsurface contamination at the Site but indicates whether the possibility of such contamination exists. The professional opinions expressed herein are based on limited data; no other warranty is given or implied by this report. A more extensive assessment, which would include additional surface and/or subsurface investigation and chemical analyses of soil and/or groundwater samples, would provide more definitive information concerning site-specific conditions. This report is complete and accurate to the extent that cited reports and agency information are complete and accurate.

This report has been prepared in compliance with the ASTM standard entitled "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" E1527-13 as well as the EPA's AAI rule.

The observations described in this report were made under the conditions stated herein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services within the constraints imposed by the client. The work described in this report was carried out in accordance with the Terms and Conditions of the contract.

In preparing this report, NCE has relied on certain information provided by federal, state, and local officials and other parties referenced therein, and on information contained in the files of governmental agencies, that were readily available to NCE at the time of this assessment. Although there may have been some degree of overlap in the information provided by these various sources, NCE did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment. Observations were made of the Site and of the structures on the Site as indicated in this report. Where access to portions of the Site or to structures on the Site was unavailable or limited, NCE renders no opinion as to the presence of direct or indirect evidence relating to petroleum substances, hazardous substances, or both, in that portion of the Site and structure. In addition, NCE renders no opinion as to the presence of indirect evidence relating to hazardous material or oil, where direct observation of the ground surface, interior walls, floors, ceiling or a structure is obstructed by objects or materials, including snow, covering on or over these surfaces.

NCE does not represent that the Site referred to herein contains no petroleum or hazardous or toxic substances or other conditions beyond those observed by NCE during the Site walkthrough.

NCE has produced this document under an agreement between NCE and El Dorado County. All terms and conditions of that agreement are included within this document by reference. Any reliance upon this document, or upon NCE's performance of services in preparing this document, is conditioned upon the relying party's acceptance and acknowledgement of the limitations, qualifications, terms, conditions, and indemnities set forth in that agreement, and property ownership/management disclosure limitations, if any. It is not to be relied upon by any party other than the County nor used for any purpose other than that specifically stated in our Agreement or within this report's Introduction Section without NCE's advance and express written consent.

Environmental Professional Declaration:

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of the Standards and Practices for All Appropriate Inquiries (AAI) Final Rule (EPA, 2005).

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the project property. We have developed and performed the all appropriate inquiries in conformance with the standard and practices set forth in 40 Code of Federal Regulations Part 312.

11.0 REFERENCES

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DISTRIBUTION

Phase I Initial Site Assessment
Pioneer Trail/US-50 Intersection Safety Improvement Project
Meyers, CA

August 18, 2020

Copy 1: El Dorado County
924 B Emerald Bay Road
South Lake Tahoe, CA 96150

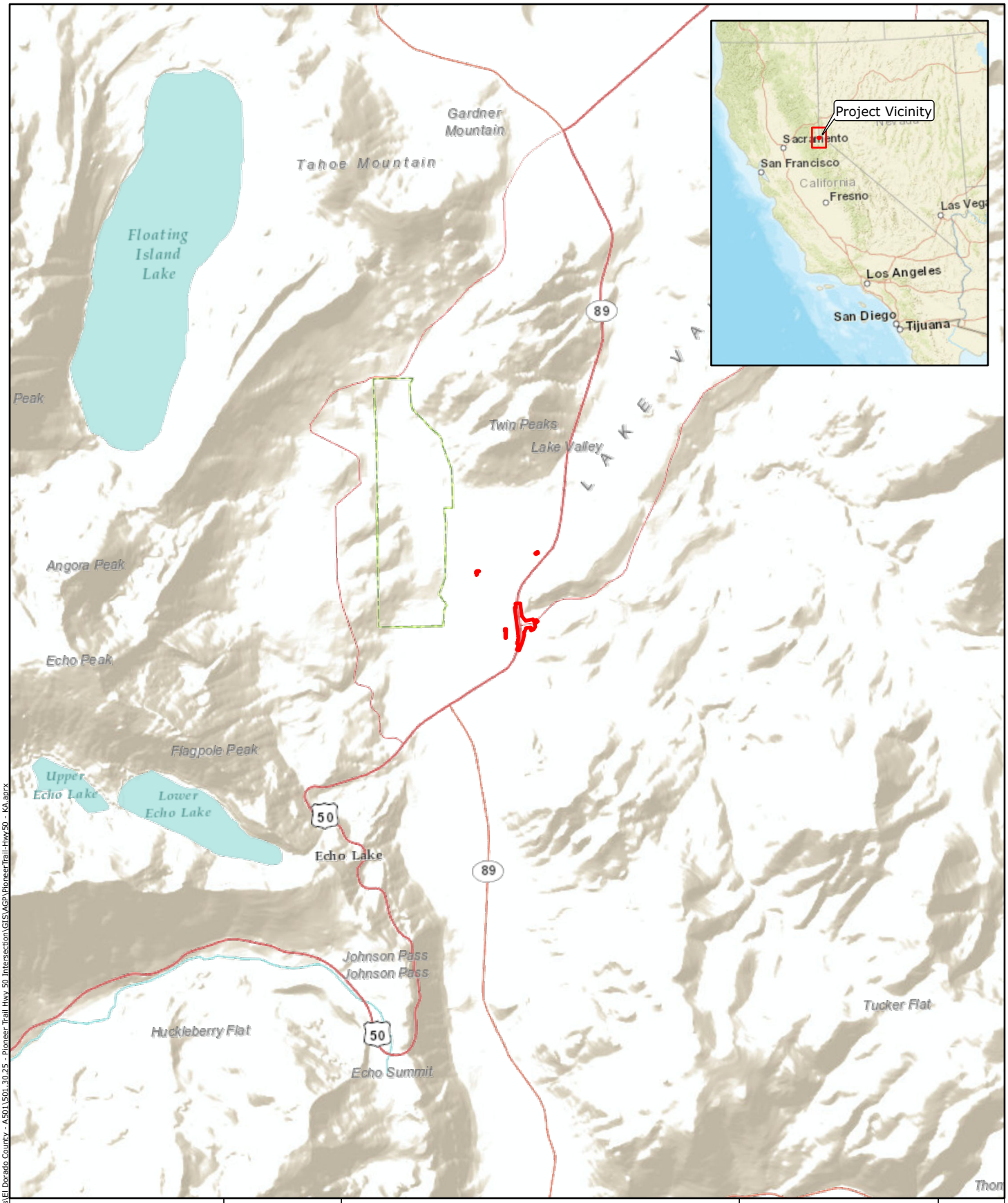
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Quality Control Reviewer



Michael Leacox, P.G., C.E.G.
Principal

PLATES



Site

NCE

Vicinity

Phase I Initial Site Assessment
Pioneer Trail/US-50 Intersection
Safety Improvement Project
El Dorado County, California

N

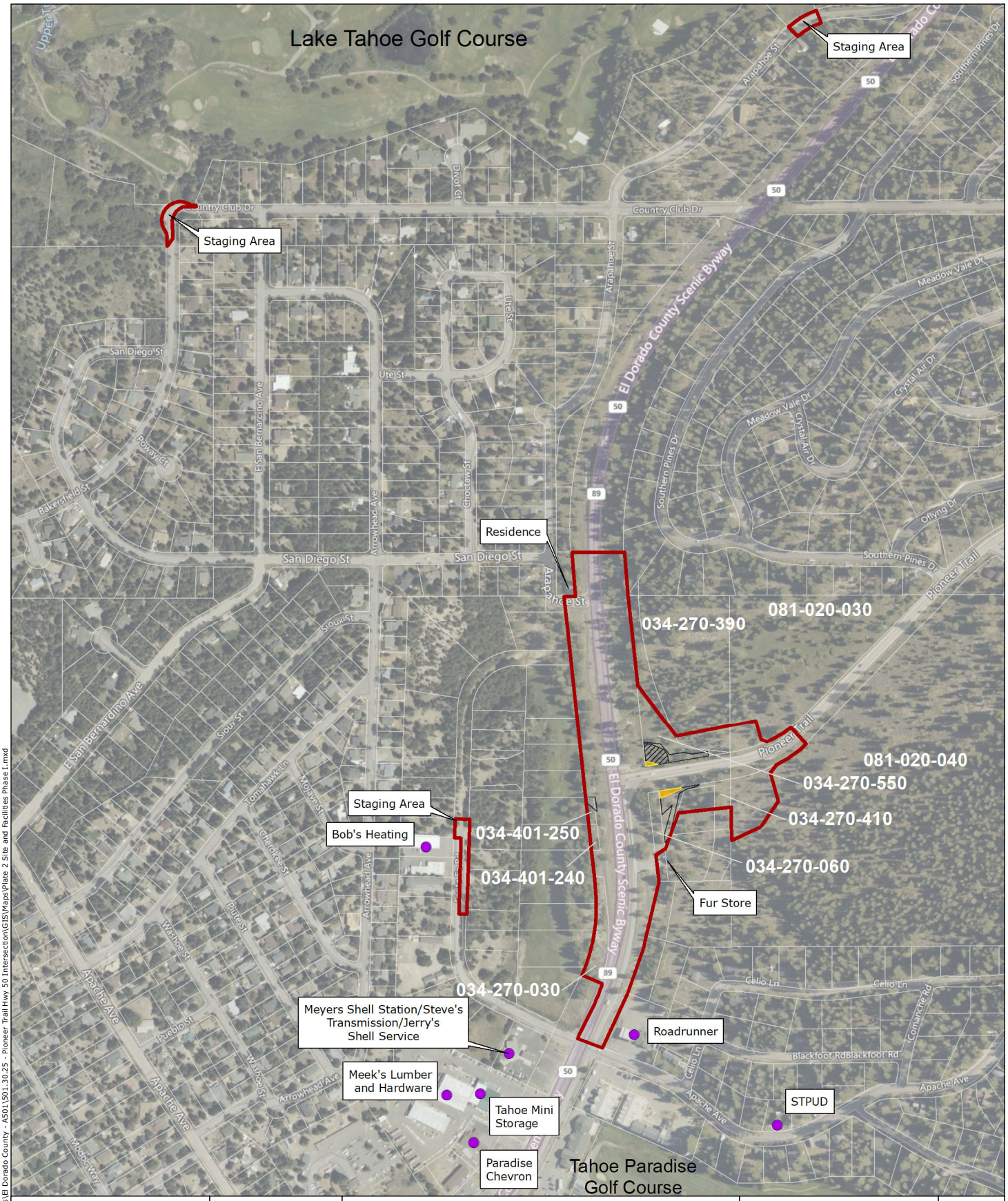
1 in. = 5,280 ft.

0 0.5 1 Miles

PLATE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Google Earth Imagery 2018, El Dorado County, TRPA	501.30.25	kando	3/5/20	--	--

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\AGP\PioneerTrail-Hwy50 - KA.aprx



Facility
Site
Proposed Easement
Temp. Construction Easement
Proposed ROW Acquisition
Parcel

NCE

Site and Nearby Facilities

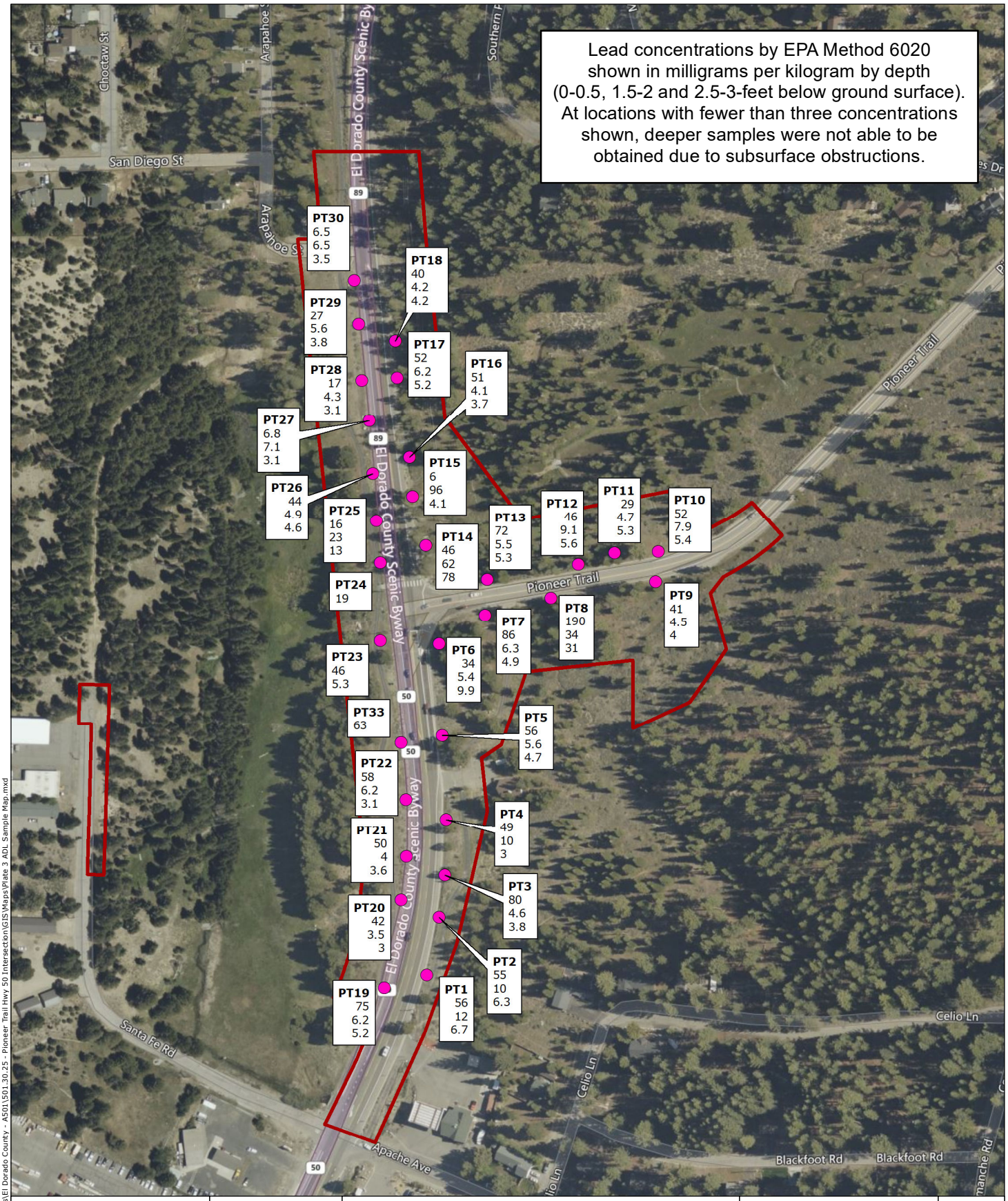
Phase I Initial Site Assessment
Pioneer Trail/US-50 Intersection Safety Improvement Project
El Dorado County, California

N
1 in. = 500 ft.
0 250 500 ft.

PLATE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Hybrid Basemap	501.30.25	kando	8/17/2020		

Document Path: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\GIS\Maps\Plate 2 Site and Facilities Phase I.mxd



Soil Sample Location
Project Area

NCE

Aerially Deposited Lead Sample Locations and Analytical Data

Phase I Initial Site Assessment
Pioneer Trail/US-50 Intersection
Safety Improvement Project
El Dorado County, California

N
1 in. = 250 ft.
0 125 250 ft.

PLATE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Hybrid Basemap	636.21.25	kando	8/6/2020		

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PHOTO LOG



Photo 1. View facing north along eastern side of US Highway 50 towards US-50/Pioneer Trail intersection (May 15, 2020).



Photo 2. View facing south along eastern side of US Highway 50 (May 15, 2020).



Photo 3. View facing north further along eastern side of US Highway 50 than Photo 1, towards US-50/Pioneer Trail intersection (May 15, 2020).



Photo 4. View facing north of road shoulder and bike trail along western side of US Highway 50 (May 15, 2020).

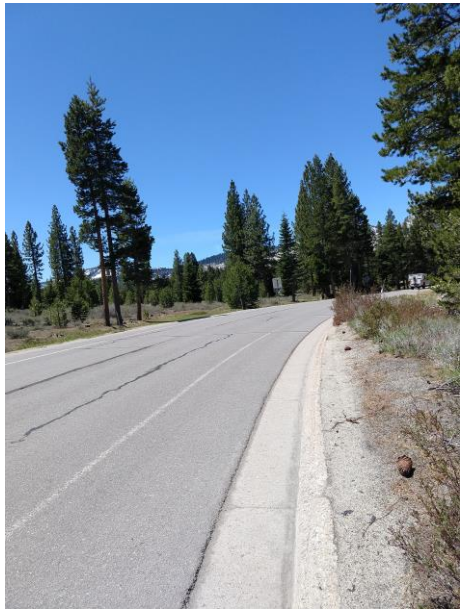


Photo 5. View facing west of northern shoulder of Pioneer Trail towards US-50/Pioneer Trail intersection (May 15, 2020).

NCE
8795 Folsom Blvd., Suite 250
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Site Photographs
Phase I Environmental Site Assessment
Pioneer Trail/US-50 Intersection Safety Improvement Project

Photo Log
1

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
KA	501.30.25			

APPENDIX A

EDR RADIUS MAP™ REPORT



Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150

Inquiry Number: 5990420.2s
February 28, 2020

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-8
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Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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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), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

PIONEER TRAIL / US HIGHWAY 50
SOUTH LAKE TAHOE, CA 96150

COORDINATES

Latitude (North):	38.8595940 - 38° 51' 34.53''
Longitude (West):	120.0120880 - 120° 0' 43.51''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	759271.0
UTM Y (Meters):	4305232.0
Elevation:	6323 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640848 ECHO LAKE, CA
Version Date:	2012
Northeast Map:	5641806 SOUTH LAKE TAHOE, CA
Version Date:	2012
Southeast Map:	5641808 FREEL PEAK, CA
Version Date:	2012
Northwest Map:	5640850 EMERALD BAY, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140725, 20140724
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
PIONEER TRAIL / US HIGHWAY 50
SOUTH LAKE TAHOE, CA 96150

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ROADRUNNER	2933 US HIGHWAY 50	LUST, CERS	Higher	1 ft.
A2		HIGHWAY 50 AND PIONE	CHMIRS	Higher	1 ft.
B3	TAHOE PARADISE CHEVR	2986 HWY 50	SWEEPS UST, CA FID UST	Higher	425, 0.080, WSW
C4	ROADRUNNER GAS	2933 HWY 50	UST	Higher	458, 0.087, South
C5	ROADRUNNER GAS	2933 HWY 50	CERS HAZ WASTE, CERS TANKS, CUPA Listings, CERS	Higher	458, 0.087, South
C6	JERRYS SHELL SERVICE	HWY 50 & SANTA FE	EDR Hist Auto	Higher	500, 0.095, South
7	MEYERS SHELL STATION	1866 SANTA FE ROAD	LUST, HIST CORTESE, CERS	Higher	587, 0.111, WSW
D8	STEVE'S TRANSMISSION	2950 US HWY 50	CERS HAZ WASTE, CUPA Listings, CERS	Higher	618, 0.117, SSW
B9	BOB'S HEATING	1802 SANTA FE AVE 4	CUPA Listings	Higher	636, 0.120, WSW
D10	TAHOE MINI STORAGE (	HIGHWAY 50	LUST, CERS	Higher	770, 0.146, SSW
11	STPUD NORTH APACHE B	1922 APACHE AVE	CUPA Listings, CERS	Higher	931, 0.176, SSE
E12	MEEK'S LUMBER & HARD	2970 HWY 50	CERS HAZ WASTE, CUPA Listings	Higher	945, 0.179, SSW
E13	TAHOE PARADISE CHEVR	2986 HWY 50	UST	Higher	981, 0.186, SSW
E14	TAHOE PARADISE CHEVR	2986 HWY 50	CERS HAZ WASTE, CERS TANKS, CUPA Listings, CERS	Higher	981, 0.186, SSW
E15	PARADISE CHEVRON	2986 50	LUST, HIST CORTESE, CERS	Higher	1042, 0.197, SSW

EXECUTIVE SUMMARY

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
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

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

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-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

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
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

EXECUTIVE SUMMARY

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
US CDL	National Clandestine Laboratory Register
PFAS	PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

HIST UST	Hazardous Substance Storage Container Database

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting 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 / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data

CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
FINDS ---- Facility Index System/Facility Registry System
ECHO ---- Enforcement & Compliance History Information
UXO ---- Unexploded Ordnance Sites
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
CA BOND EXP. PLAN ---- Bond Expenditure Plan
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
DRYCLEANERS ---- Cleaner Facilities
EMI ---- Emissions Inventory Data
ENF ---- Enforcement Action Listing
Financial Assurance ---- Financial Assurance Information Listing
HAZNET ---- Facility and Manifest Data
ICE ---- ICE
HWP ---- EnviroStor Permitted Facilities Listing
HWT ---- Registered Hazardous Waste Transporter Database
MINES ---- Mines Site Location Listing
MWMP ---- Medical Waste Management Program Listing
NPDES ---- NPDES Permits Listing
PEST LIC ---- Pesticide Regulation Licenses Listing
PROC ---- Certified Processors Database
Notify 65 ---- Proposition 65 Records
UIC ---- UIC Listing
UIC GEO ---- UIC GEO (GEOTRACKER)
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WDS ---- Waste Discharge System
WIP ---- Well Investigation Program Case List
MILITARY PRIV SITES ---- MILITARY PRIV SITES (GEOTRACKER)
PROJECT ---- PROJECT (GEOTRACKER)
WDR ---- Waste Discharge Requirements Listing
CIWQS ---- California Integrated Water Quality System
NON-CASE INFO ---- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ---- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ---- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---- Well Stimulation Project (GEOTRACKER)
HWTS ---- Hazardous Waste Tracking System
MINES MRDS ---- Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner ---- EDR Exclusive Historical 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 leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER	***2933 US HIGHWAY 50***	***0 - 1/8 (0.000 mi.)***	***A1***	***9***
Database: LUST, Date of Government Version: 12/09/2019 Global Id: T0601704370 Global Id: T0601750819 Status: Completed - Case Closed				
MEYERS SHELL STATION	***1866 SANTA FE ROAD***	***WSW 0 - 1/8 (0.111 mi.)***	***7***	***36***
Database: LUST, Date of Government Version: 12/09/2019 Global Id: T0601700147 Status: Completed - Case Closed				
TAHOE MINI STORAGE (	***HIGHWAY 50***	***SSW 1/8 - 1/4 (0.146 mi.)***	***D10***	***66***
Database: LUST, Date of Government Version: 12/09/2019 Global Id: T0601700107 Status: Completed - Case Closed				
PARADISE CHEVRON	***2986 50***	***SSW 1/8 - 1/4 (0.197 mi.)***	***E15***	***87***
Database: LUST REG 6L, Date of Government Version: 09/09/2003 Database: LUST, Date of Government Version: 12/09/2019 Global Id: T0601700144 Active OR Closed Site: C Date Closed: 9/15/00 Status: Completed - Case Closed				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER GAS Database: UST, Date of Government Version: 12/09/2019	2933 HWY 50	S 0 - 1/8 (0.087 mi.)	C4	17
TAHOE PARADISE CHEVR Database: UST, Date of Government Version: 12/09/2019 Facility Id: fa0001365	2986 HWY 50	SSW 1/8 - 1/4 (0.186 mi.)	E13	74

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 10/21/2019 has revealed that there are 4 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER GAS	***2933 HWY 50***	***S 0 - 1/8 (0.087 mi.)***	***C5***	***18***
STEVE'S TRANSMISSION	***2950 US HWY 50***	***SSW 0 - 1/8 (0.117 mi.)***	***D8***	***62***
MEEK'S LUMBER & HARD	***2970 HWY 50***	***SSW 1/8 - 1/4 (0.179 mi.)***	***E12***	***71***
TAHOE PARADISE CHEVR	***2986 HWY 50***	***SSW 1/8 - 1/4 (0.186 mi.)***	***E14***	***74***

Local Lists of Registered Storage Tanks

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
TAHOE PARADISE CHEVR Status: A Tank Status: A	***2986 HWY 50***	***WSW 0 - 1/8 (0.080 mi.)***	***B3***	***14***

EXECUTIVE SUMMARY

Comp Number: 54081

CERS TANKS: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

A review of the CERS TANKS list, as provided by EDR, and dated 10/21/2019 has revealed that there are 2 CERS TANKS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER GAS	***2933 HWY 50***	***S 0 - 1/8 (0.087 mi.)***	***C5***	***18***
TAHOE PARADISE CHEVR	***2986 HWY 50***	***SSW 1/8 - 1/4 (0.186 mi.)***	***E14***	***74***

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
TAHOE PARADISE CHEVR	***2986 HWY 50***	***WSW 0 - 1/8 (0.080 mi.)***	***B3***	***14***
Facility Id: 09000103				
Status: A				

Records of Emergency Release Reports

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 05/15/2019 has revealed that there is 1 CHMIRS site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	HIGHWAY 50 AND PIONE	0 - 1/8 (0.000 mi.)	A2	12
OES Incident Number: 10-5673				

Other Ascertainable Records

CUPA Listings: 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.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 6 CUPA Listings sites within approximately 0.25 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER GAS	***2933 HWY 50***	***S 0 - 1/8 (0.087 mi.)***	***C5***	***18***
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Active, billable				
STEVE'S TRANSMISSION	***2950 US HWY 50***	***SSW 0 - 1/8 (0.117 mi.)***	***D8***	***62***
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Active, billable Status: Inactive, non-billable				
BOB'S HEATING	1802 SANTA FE AVE 4	WSW 0 - 1/8 (0.120 mi.)	B9	65
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Inactive, non-billable				
STPUD NORTH APACHE B	***1922 APACHE AVE***	***SSE 1/8 - 1/4 (0.176 mi.)***	***11***	***68***
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Active, billable				
MEEK'S LUMBER & HARD	***2970 HWY 50***	***SSW 1/8 - 1/4 (0.179 mi.)***	***E12***	***71***
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Active, billable				
TAHOE PARADISE CHEVR	***2986 HWY 50***	***SSW 1/8 - 1/4 (0.186 mi.)***	***E14***	***74***
Database: CUPA EL DORADO, Date of Government Version: 09/06/2019 Status: Active, billable				

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 are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MEYERS SHELL STATION	***1866 SANTA FE ROAD***	***WSW 0 - 1/8 (0.111 mi.)***	***7***	***36***
Reg Id: 6T0295A				
PARADISE CHEVRON	***2986 50***	***SSW 1/8 - 1/4 (0.197 mi.)***	***E15***	***87***
Reg Id: 6T0274A				

CERS: The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

A review of the CERS list, as provided by EDR, and dated 10/21/2019 has revealed that there is 1 CERS site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROADRUNNER	***2933 US HIGHWAY 50***	***0 - 1/8 (0.000 mi.)***	***A1***	***9***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: 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.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

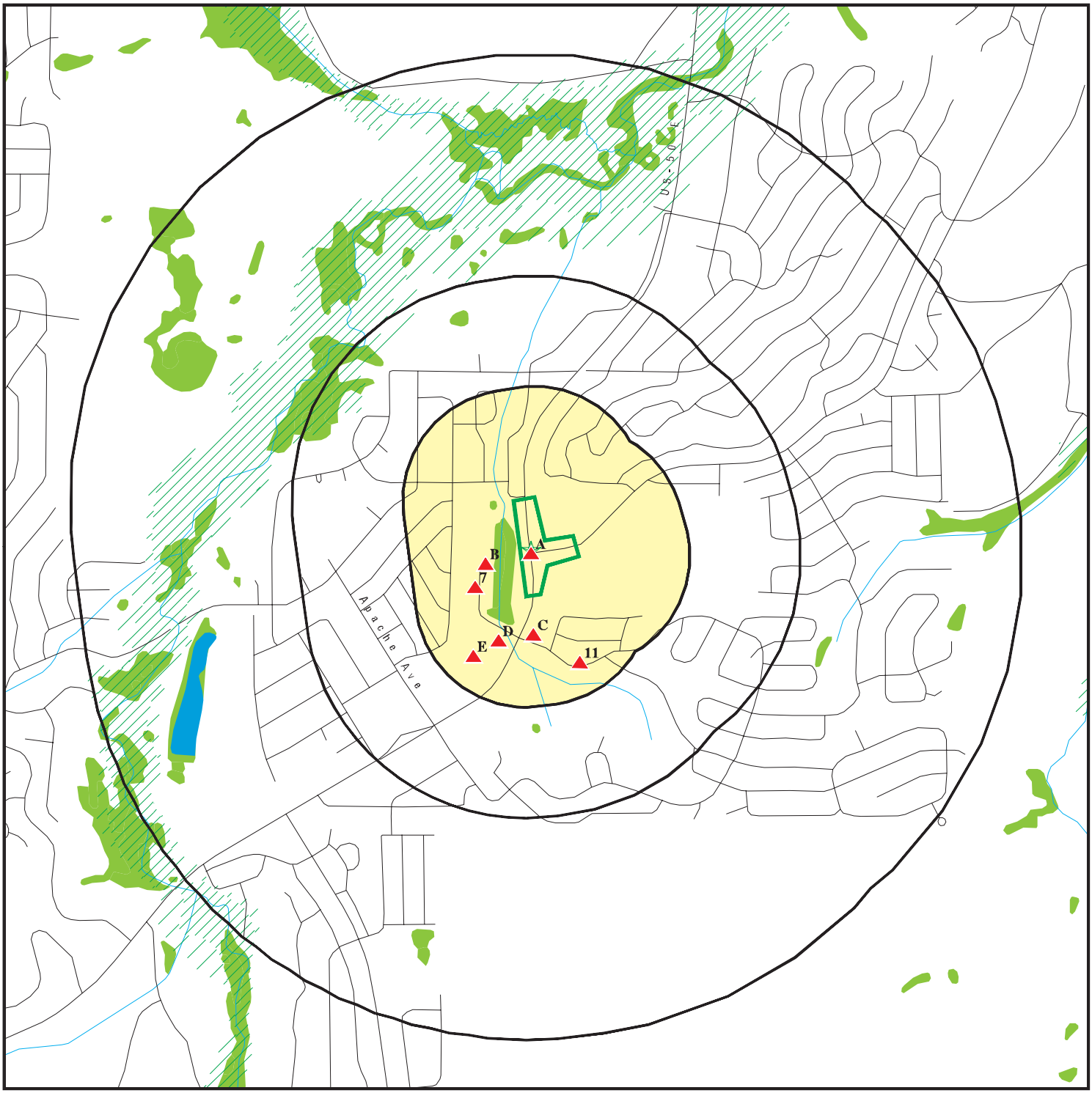
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JERRYS SHELL SERVICE	HWY 50 & SANTA FE	S 0 - 1/8 (0.095 mi.)	C6	36

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
PIONEER TRAIL ECP III/BIKE LN	ENF, CIWQS
PIONEER TRAIL ECP III/BIKE LN	FINDS

OVERVIEW MAP - 5990420.2S



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

0 1/4 1/2 1 Miles

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

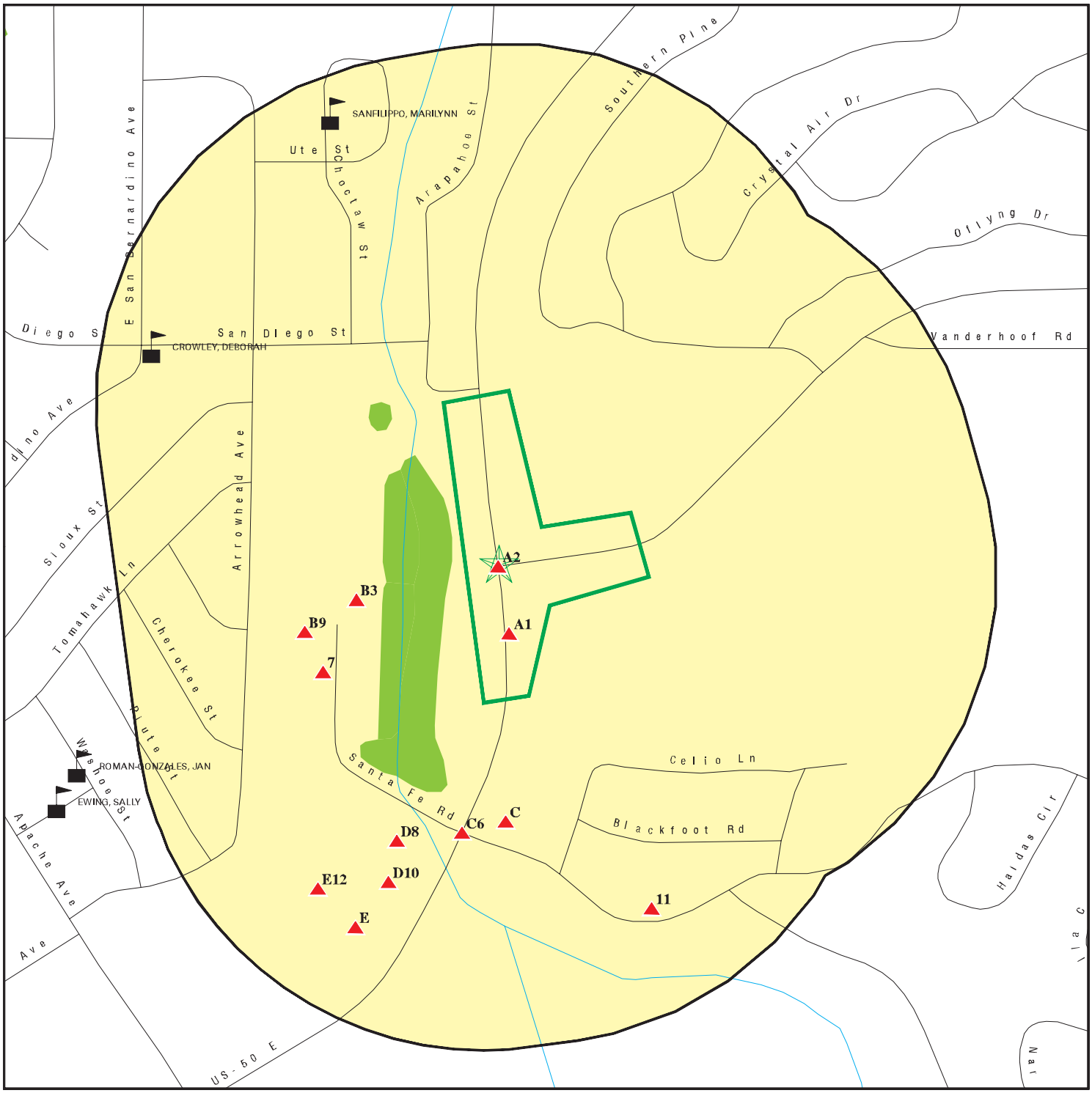
N

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:	Pioneer Trail	CLIENT:	Nichols Consulting Eng.,Chtd.
ADDRESS:	Pioneer Trail / US Highway 50 South Lake Tahoe CA 96150	CONTACT:	Darcy Hinkley
LAT/LONG:	38.859594 / 120.012088	INQUIRY #:	5990420.2s
		DATE:	February 28, 2020 2:24 pm

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DETAIL MAP - 5990420.2S



0 1/16 1/8 1/4 Miles

- 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
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- 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:	Pioneer Trail	CLIENT:	Nichols Consulting Eng.,Chtd.
ADDRESS:	Pioneer Trail / US Highway 50 South Lake Tahoe CA 96150	CONTACT:	Darcy Hinkley
LAT/LONG:	38.859594 / 120.012088	INQUIRY #:	5990420.2s
		DATE:	February 28, 2020 2:26 pm

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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	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	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-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	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	0	NR	0
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		2	2	0	NR	NR	4

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
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	1	NR	NR	NR	2
AST	0.250		0	0	NR	NR	NR	0
INDIAN 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
State and tribal Brownfields sites								
BROWNFIELDS	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								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	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
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		2	2	NR	NR	NR	4
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		1	1	NR	NR	NR	2
CA FID UST	0.250		1	0	NR	NR	NR	1
Local Land Records								
LIENS	0.001		0	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
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		1	NR	NR	NR	NR	1
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		3	3	NR	NR	NR	6

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
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	1	0	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		1	NR	NR	NR	NR	1
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	15	10	0	0	0	25

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

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **ROADRUNNER** **LUST S105691373**
2933 US HIGHWAY 50 **CERS N/A**
< 1/8 **SOUTH LAKE TAHOE, CA 96150**
1 ft.

Site 1 of 2 in cluster A

Relative: Higher

Actual: 6329 ft.

LUST:

Name:	ROAD RUNNER
Address:	2933 US HIGHWAY 50
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
Lead Agency:	EL DORADO COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601704370
Global Id:	T0601704370
Latitude:	38.858859
Longitude:	-120.0119527
Status:	Completed - Case Closed
Status Date:	06/13/2013
Case Worker:	RL
RB Case Number:	6T0358A
Local Agency:	EL DORADO COUNTY
File Location:	Local Agency
Local Case Number:	04370
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	limited diesel fuel contamination and clean up from UST to remote dispenser.

LUST:

Global Id:	T0601704370
Contact Type:	Regional Board Caseworker
Contact Name:	BRIAN GREY
Organization Name:	LAHONTAN RWQCB (REGION 6T)
Address:	2501 LAKE TAHOE BOULEVARD
City:	SOUTH LAKE TAHOE
Email:	bgrey@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0601704370
Contact Type:	Local Agency Caseworker
Contact Name:	ROBERT LAURITZEN
Organization Name:	EL DORADO COUNTY
Address:	2850 Fairlane Ct., Building C
City:	Placerville
Email:	robert.lauritzen@edcgov.us
Phone Number:	Not reported

LUST:

Global Id:	T0601704370
Action Type:	ENFORCEMENT
Date:	04/03/2002
Action:	Staff Letter

Global Id:	T0601704370
Action Type:	Other
Date:	11/01/2012
Action:	Leak Discovery

Global Id:	T0601704370

ROADRUNNER (Continued) **S105691373**

Action Type: Other
Date: 11/15/2012
Action: Leak Stopped

Global Id: T0601704370
Action Type: REMEDIATION
Date: 10/01/2012
Action: Excavation

Global Id: T0601704370
Action Type: ENFORCEMENT
Date: 03/25/2002
Action: * No Action

Global Id: T0601704370
Action Type: ENFORCEMENT
Date: 05/19/2004
Action: * No Action

Global Id: T0601704370
Action Type: ENFORCEMENT
Date: 06/12/2013
Action: Closure/No Further Action Letter

Global Id: T0601704370
Action Type: Other
Date: 11/15/2012
Action: Leak Reported

LUST:
Global Id: T0601704370
Status: Open - Case Begin Date
Status Date: 03/19/2002

Global Id: T0601704370
Status: Open - Site Assessment
Status Date: 08/28/2003

Global Id: T0601704370
Status: Completed - Case Closed
Status Date: 04/02/2009

Global Id: T0601704370
Status: Open - Assessment & Interim Remedial Action
Status Date: 11/06/2012

Global Id: T0601704370
Status: Open - Reopen Case
Status Date: 11/06/2012

Global Id: T0601704370
Status: Open - Eligible for Closure
Status Date: 01/18/2013

Global Id: T0601704370
Status: Completed - Case Closed
Status Date: 06/13/2013

ROADRUNNER (Continued) **S105691373**

Name:	ROADRUNNER
Address:	2933 US HIGHWAY 50
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
Lead Agency:	EL DORADO COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601750819
Global Id:	T0601750819
Latitude:	38.857042
Longitude:	-120.012182
Status:	Completed - Case Closed
Status Date:	04/02/2009
Case Worker:	RL
RB Case Number:	6T0373A
Local Agency:	EL DORADO COUNTY
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0601750819
Contact Type:	Regional Board Caseworker
Contact Name:	BRIAN GREY
Organization Name:	LAHONTAN RWQCB (REGION 6T)
Address:	2501 LAKE TAHOE BOULEVARD
City:	SOUTH LAKE TAHOE
Email:	bgrey@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0601750819
Contact Type:	Local Agency Caseworker
Contact Name:	ROBERT LAURITZEN
Organization Name:	EL DORADO COUNTY
Address:	2850 Fairlane Ct., Building C
City:	Placerville
Email:	robert.lauritzen@edcgov.us
Phone Number:	Not reported

LUST:

Global Id:	T0601750819
Action Type:	ENFORCEMENT
Date:	03/12/2009
Action:	Closure/No Further Action Letter

Global Id:	T0601750819
Action Type:	Other
Date:	10/06/2004
Action:	Leak Discovery

Global Id:	T0601750819
Action Type:	REMEDIATION
Date:	10/06/2004
Action:	Excavation

Global Id:	T0601750819
Action Type:	Other

ROADRUNNER (Continued) **S105691373**

Date: 10/07/2004
Action: Leak Reported

LUST:
Global Id: T0601750819
Status: Open - Case Begin Date
Status Date: 10/06/2004

Global Id: T0601750819
Status: Open - Site Assessment
Status Date: 10/07/2004

Global Id: T0601750819
Status: Completed - Case Closed
Status Date: 04/02/2009

CERS:
Name: ROAD RUNNER
Address: 2933 US HIGHWAY 50
City,State,Zip: SOUTH LAKE TAHOE, CA 96150
Site ID: 228842
CERS ID: T0601704370
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: ROBERT LAURITZEN - EL DORADO COUNTY
Entity Title: Not reported
Affiliation Address: 2850 Fairlane Ct., Building C
Affiliation City: Placerville
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Regional Board Caseworker
Entity Name: BRIAN GREY - LAHONTAN RWQCB (REGION 6T)
Entity Title: Not reported
Affiliation Address: 2501 LAKE TAHOE BOULEVARD
Affiliation City: SOUTH LAKE TAHOE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

A2 **CHMIRS** **S110981633**
N/A

< 1/8
1 ft.

HIGHWAY 50 AND PIONEER TRAIL
SOUTH LAKE TAHOE, CA 96150

Site 2 of 2 in cluster A

Relative: Higher

Actual: 6323 ft.

CHMIRS:
Name: Not reported
Address: HIGHWAY 50 AND PIONEER TRAIL
City,State,Zip: SOUTH LAKE TAHOE, CA 96150

(Continued) **S110981633**

OES Incident Number:	10-5673
OES notification:	09/21/2010
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Contained within the storm drain
Spill Site:	Road
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1005
Year:	2010
Agency:	So Tahoe Public Utilities Dist
Incident Date:	9/21/2010
Admin Agency:	El Dorado County Environmental Management
Amount:	Not reported
Contained:	Yes
Site Type:	Contained within the storm drain
E Date:	Not reported
Substance:	Sewage
Quantity Released:	100
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported

(Continued) **S110981633**

#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Grease blockage in the main line caused this release

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B3 **TAHOE PARADISE CHEVRON** **SWEEPS UST** **1000332288**
WSW **2986 HWY 50** **CA FID UST** **N/A**
< 1/8 **PARADISE, CA 95708**
0.080 mi.
425 ft. **Site 1 of 2 in cluster B**

Relative: **Higher**

Actual: **6324 ft.**

SWEEPS UST:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City:	PARADISE
Status:	Not reported
Comp Number:	54081
Number:	Not reported
Board Of Equalization:	44-003092
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	09-000-054081-000001
Tank Status:	Not reported
Capacity:	3000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	5

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City:	PARADISE
Status:	Not reported
Comp Number:	54081
Number:	Not reported
Board Of Equalization:	44-003092
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	09-000-054081-000002
Tank Status:	Not reported
Capacity:	7000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

TAHOE PARADISE CHEVRON (Continued) **1000332288**

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City:	PARADISE
Status:	Not reported
Comp Number:	54081
Number:	Not reported
Board Of Equalization:	44-003092
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	09-000-054081-000003
Tank Status:	Not reported
Capacity:	7000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City:	PARADISE
Status:	Not reported
Comp Number:	54081
Number:	Not reported
Board Of Equalization:	44-003092
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	09-000-054081-000004
Tank Status:	Not reported
Capacity:	550
Active Date:	Not reported
Tank Use:	OIL
STG:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City:	PARADISE
Status:	Not reported
Comp Number:	54081
Number:	Not reported
Board Of Equalization:	44-003092
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	09-000-054081-000005
Tank Status:	Not reported
Capacity:	550
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT

TAHOE PARADISE CHEVRON (Continued) **1000332288**

Content: DIESEL
Number Of Tanks: Not reported

Name: TAHOE PARADISE CHEVRON
Address: 2986 HWY 50
City: PARADISE
Status: Active
Comp Number: 54081
Number: 1
Board Of Equalization: 44-003092
Referral Date: 01-05-90
Action Date: 01-05-90
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 09-000-054081-000006
Tank Status: A
Capacity: 10000
Active Date: 01-28-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 4

Name: TAHOE PARADISE CHEVRON
Address: 2986 HWY 50
City: PARADISE
Status: Active
Comp Number: 54081
Number: 1
Board Of Equalization: 44-003092
Referral Date: 01-05-90
Action Date: 01-05-90
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 09-000-054081-000007
Tank Status: A
Capacity: 10000
Active Date: 01-28-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Name: TAHOE PARADISE CHEVRON
Address: 2986 HWY 50
City: PARADISE
Status: Active
Comp Number: 54081
Number: 1
Board Of Equalization: 44-003092
Referral Date: 01-05-90
Action Date: 01-05-90
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 09-000-054081-000008
Tank Status: A
Capacity: 10000

TAHOE PARADISE CHEVRON (Continued) **1000332288**

Active Date: 01-28-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Name: TAHOE PARADISE CHEVRON
Address: 2986 HWY 50
City: PARADISE
Status: Active
Comp Number: 54081
Number: 1
Board Of Equalization: 44-003092
Referral Date: 01-05-90
Action Date: 01-05-90
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 09-000-054081-000009
Tank Status: A
Capacity: 10000
Active Date: 01-28-93
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 09000103
Regulated By: UTNKA
Regulated ID: 00054081
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 9165771127
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: PARADISE 95708
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

C4 **ROADRUNNER GAS** **UST** **U004266242**
South **2933 HWY 50** **N/A**
< 1/8 **SOUTH LAKE TAHOE, CA 96150**
0.087 mi.
458 ft. **Site 1 of 3 in cluster C**

Relative: UST:
Higher Name: ROADRUNNER GAS
Actual: Address: 2933 HWY 50
6349 ft. City,State,Zip: SOUTH LAKE TAHOE, CA 96150
Facility ID: Not reported
Permitting Agency: El Dorado County Environmental Management

ROADRUNNER GAS (Continued) **U004266242**

Latitude: 38.8569
Longitude: -120.012

Name: ROADRUNNER GAS
Address: 2933 HWY 50
City,State,Zip: SOUTH LAKE TAHOE, CA 96150
Facility ID: Not reported
Permitting Agency: El Dorado County Environmental Managemen
Latitude: 38.8569
Longitude: -120.012

C5 **ROADRUNNER GAS** **CERS HAZ WASTE** **S121745976**
South **2933 HWY 50** **CERS TANKS** **N/A**
< 1/8 **SOUTH LAKE TAHOE, CA 96150** **CUPA Listings**
0.087 mi. **CERS**
458 ft. **Site 2 of 3 in cluster C**

Relative:
Higher

Actual:
6349 ft.

CERS HAZ WASTE:
Name: ROADRUNNER GAS
Address: 2933 HWY 50
City,State,Zip: SOUTH LAKE TAHOE, CA 96150
Site ID: 148463
CERS ID: 10202848
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: ROADRUNNER GAS
Address: 2933 HWY 50
City,State,Zip: SOUTH LAKE TAHOE, CA 96150
Site ID: 148463
CERS ID: 10202848
CERS Description: Underground Storage Tank

CUPA EL DORADO:
Name: ROADRUNNER GAS
Address: 2933 HWY 50
City,State,Zip: SOUTH LAKE TAHOE, CA 96150
PE: BUSINESS PLANS/SMALL BUSINESS
Status: Active, billable
Latitude: 39
Longitude: -120
Name: TAHOE ROADRUNNER INC
Email: Not reported
Address2: 2933 HWY 50
Permit: PT0002771
Phone: 5305776946
Second Phone: 8317101230
APN: 03427010
RP Name: DALIP MANN
RP Care of: Not reported
RP Phone: 8317101230
GIS Elevation: 6343
CERSID: 10202848
Business Type: MOTOR VEHICLE FUEL
Current Inspection Date: 04/01/2022
Last Inspection Date: 04/01/2019

ROADRUNNER GAS (Continued) **S121745976**

Name:	ROADRUNNER GAS
Address:	2933 HWY 50
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
PE:	U.G.S.T. ANNUAL PERMIT
Status:	Active, billable
Latitude:	39
Longitude:	-120
Name:	Not reported
Email:	Not reported
Address2:	2933 HWY 50
Permit:	PT0004937
Phone:	5305776946
Second Phone:	8317101230
APN:	03427010
RP Name:	DALIP MANN
RP Care of:	Not reported
RP Phone:	8317101230
GIS Elevation:	6343
CERSID:	10202848
Business Type:	MOTOR VEHICLE FUEL
Current Inspection Date:	04/01/2022
Last Inspection Date:	04/01/2019

CERS:

Name:	ROADRUNNER GAS
Address:	2933 HWY 50
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
Site ID:	148463
CERS ID:	10202848
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	03-28-2018
Citation:	23 CCR 16 2641(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(a)
Violation Description:	Failure to maintain secondarily contained piping to allow liquid to flow into the sump in the event of a leak (i.e., failure to remove test boot).
Violation Notes:	Returned to compliance on 03/28/2018. Test boots were observed on 87, 91, and diesel product piping during the annual inspection. Test boots shall be removed after secondary containment testing to allow liquid to flow back into the sump and the leak detected at the earliest opportunity. Test boots were removed at the transition sump during annual testing.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS

Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	03-28-2018
Citation:	23 CCR 16 2631(d) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2631(d)
Violation Description:	Failure of primary or integral secondary containment to be approved for use by an independent testing organization or failure of non

ROADRUNNER GAS (Continued) **S121745976**

integral secondary containment to be designed and constructed to an engineering specification approved by a registered professional engineer or in accordance with a nationally recognized industry code or engineering standard.

Violation Notes: Returned to compliance on 03/28/2018. Water was observed in the following areas of containment: 91 fill sump, Diesel fill sump, and 87 fill sump. Secondary containment system shall be constructed to prevent the entry of surface water. Liquid was removed from containment sumps by the service technician during the annual monitoring certification.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 11-23-2015
Citation: 23 CCR 16 2715(c)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(2)
Violation Description: Failure to comply with one or more of the following: maintain the spill bucket in good condition, containment free of debris/liquid, and/or to remove the contents of the spill bucket when a release/leak/spill was observed.
Violation Notes: Returned to compliance on 11/23/2015. Observed liquid in all of the spill buckets. Spill buckets shall be capable of containing 5 gallons of liquid. Service technician removed liquid from all spill buckets during the testing.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 08-30-2016
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description: Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes: Returned to compliance on 12/20/2016. Observed the 87 and 91 product spill buckets fail during annual testing. Spill buckets shall be capable of containing a minimum of 5 gallons of hazardous substance. Repair and retest 87 and 91 product spill buckets by the comply by date.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 11-23-2015
Citation: 23 CCR 16 2666(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2666(c)
Violation Description: Failure of line leak detector to detect a leak and/or failure of audible and visual alarm.

ROADRUNNER GAS (Continued) **S121745976**

Violation Notes:	Returned to compliance on 12/18/2015. Regular product line leak detector failed to detect a 3.0 gph leak during testing. Leak detector shall be capable of restricting the flow of product when a leak is detected. Replace line leak detector and submit results by the comply by date showing the leak detector is now capable of detecting a leak.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	22 CCR 12 66262.12 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.12
Violation Description:	Failure to obtain an Identification Number prior to treating, storing, disposing of, transporting or offering for transportation any hazardous waste.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility's EPA ID number was listed as "inactive". CORRECTIVE ACTION: This facility needs to reactivate their EPA ID number as soon as possible. A facility cannot generate, store, or dispose of hazardous waste unless they have an active EPA ID number.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HW
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-05-2017
Citation:	23 CCR 16 2641(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(a)
Violation Description:	Failure of leak detection equipment to be located such that equipment is capable of detecting a leak at the earliest possible opportunity.
Violation Notes:	Returned to compliance on 04/05/2017. During the inspection the DSL STP liquid sensor was observed laying on it's side at the bottom of the sump under no less than 6 inches of liquid. All leak detection equipment is to be located such that the equipment is capable of detecting a leak at the earliest possible opportunity. The sensor was placed in the correct position by the service technician during the inspection.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	HSC 6.7 25284.2 - California Health and Safety Code, Chapter 6.7, Section(s) 25284.2
Violation Description:	"Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container. Tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional

ROADRUNNER GAS (Continued) **S121745976**

engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. "

Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection only one spill bucket was tested. The Diesel siphon tank spill bucket was tested and passed, the rest (87, 91, diesel) were not. CORRECTIVE ACTION: The facility needs to have the remainder of the spill buckets tested.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Description: Failure to have current UST Monitoring Plan available on site.
Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection there was no UST monitoring plan onsite. CORRECTIVE ACTION: This facility needs to update the UST monitoring plan via CERS and keep a hard copy onsite.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 11-13-2015
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 09/29/2016. At the beginning of the inspection the 2 x 55 gallon steel drums were found with hazardous waste labels that the printing was severely worn and not legible. All appropriate fields within the hazardous waste label must be completed and must be legible when storing hazardous waste.
Violation Division: El Dorado County Environmental Management
Violation Program: HW
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Description: Failure to have an approved UST Monitoring Plan.
Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility's UST monitoring plan in CERS did not accurately depict the UST system onsite. CORRECTIVE ACTION: The following changes need to be made to the UST monitoring plan in CERS: 1. There is no UST install date for the 87 tank. 2. For the 87 tank, there is no primary piping listed. It should say "flexible". 3. For all tanks the current monitoring plan says that piping sumps and vent transition sumps are double-walled. This is not correct, they are

ROADRUNNER GAS (Continued) **S121745976**

single-walled. 4. For all tanks you have stated that the UDCs are double-walled. This is incorrect, they are single-walled. 5. You have answered "no" to having striker plates on all tanks. It should say "yes", as they are required for all tanks. 6. For the continuous tank monitoring section (for all tanks) you have stated that the sensor model number is "420-208". It should say "420". 7. There is no line leak detector (LLD) information in the monitoring plan [Truncated]

Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection there were four 55-gallon steel drums, located outside the main store, containing waste test fluid/sump water that did not have hazardous waste labels on them. All drums had liquid in them. CORRECTIVE ACTION: This facility needs to ensure that all hazardous waste containers are properly labeled. The labels should be completely filled out and legible.
Violation Division: El Dorado County Environmental Management
Violation Program: HW
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: 23 CCR 16 2716(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(f)
Violation Description: "Failure to maintain on-site, or off-site at a readily available location if approved by the UPA, copies of Designated Operator inspection records as follows: Designated operator monthly inspection records for inspections performed before October 1, 2018 must be kept for 12 months from the month of inspection. For inspections performed on or after October 1, 2018, copies of the ""Designated Underground Storage Tank Operator Visual Inspection Report"" must be kept for 36 months from the month of inspection. "
Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility was missing the D.O. monthly report from March of 2019. CORRECTIVE ACTION: This facility needs to locate the March 2019 monthly D.O. report and keep it onsite.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-05-2017
Citation: 23 CCR 16 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1) - California Code

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of Regulations, Title 23, Chapter 16, Section(s) 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1)

Violation Description: Failure of the leak detection equipment to have an audible and visual alarm as required.
Violation Notes: Returned to compliance on 04/05/2017. The liquid sensors in the 91 and DSL stp sumps were intermittently alarming due to faulty wiring. The leak detection equipment shall have an audible and visual alarm as required. The sensors were replaced in both sumps during the inspection.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 08-30-2016
Citation: 23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description: Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:Monitor at least hourly.Be capable of detecting a release of 3.0 gallons per hour at 10 p.s.i.g. Restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 08/30/2016.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.
Violation Notes: Returned to compliance on 04/22/2019. OBSERVATION: At the time of inspection the facility was unable to provide proof of annual hazardous materials-related employee trainings. CORRECTIVE ACTION: This facility needs to locate their employee training records and provide copies to this department. If a hazardous materials-related employee training has not been completed in the last year, one must be conducted (and documented) within 30 days.
Violation Division: El Dorado County Environmental Management
Violation Program: HMRRP
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-01-2019
Citation: 23 CCR 16 2715(c)(4) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(4)
Violation Description: Failure to maintain a list of employees trained by the designated operator on-site or off-site at a readily available location, if approved by the UPA. For training that occurs on or after October 1, 2018, failure to maintain a copy of the "Facility Employee Training

ROADRUNNER GAS (Continued) **S121745976**

	Certificate" on-site or off-site at a readily available location, if approved by the UPA.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility was unable to locate the most recent employee D.O. training records. CORRECTIVE ACTION: This facility needs to locate the employee training records and provide a copy to this department.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	23 CCR 16 2632(d)(1)(c),2641(h),2711(a)(8) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632(d)(1)(c),2641(h),2711(a)(8)
Violation Description:	Failure to submit or maintain a current facility plot plan.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection, the facility's UST plot plan lacked the required elements. CORRECTIVE ACTION: UST monitoring plans must include a Site Plan showing the general tank and component layouts and the locations where monitoring is performed (i.e., location of each sensor, sump, line leak detector, monitoring system control panel, emergency stop switch, etc.). Please update the UST plot plan and submit it via CERS.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	11-23-2015
Citation:	23 CCR 16 2632, 2634, 2636, 2666 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632, 2634, 2636, 2666
Violation Description:	Failure of the leak detection equipment to be properly programmed or properly operated.
Violation Notes:	Returned to compliance on 12/18/2015. Observed sensors not located at the lowest point in the following sumps: Diesel STP, Diesel Fill, and Premium Fill. The Diesel STP sensor was observed hanging from the electrical conduit. The Diesel Fill sensor was observed hanging from the lip of the sump. The Premium Fill sensor was observed hanging from the electrical conduit. Leak detection equipment shall be placed at the lowest position in the sump in order to detect a leak or release at the earliest opportunity and shutdown the product turbine. Cease and desist the raising of sensors. Submit a written statement by the comply by date as to why the above mentioned sensors were raised and thus not capable of shutting down the turbine and alerting the operator if a leak was detected.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)

ROADRUNNER GAS (Continued) **S121745976**

Violation Description:	Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility's emergency response plan needed updating. CORRECTIVE ACTION: The facility's emergency response plan needs to have the correct CUPA (EDC Environmental Management) phone number listed. It is 530-621-5300. The plan should also have the "hazardous waste" box checked off on the first page.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility's chemical inventory in CERS was not current. CORRECTIVE ACTION: This facility needs to add their hazardous waste drums to the chemical inventory. Also, CERS specifically states that the maximum daily amount for any inventory item cannot be smaller than the largest container size (think capacity). Please update the gasoline and diesel entries.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	23 CCR 16 2712(b)(1)(G) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(G)
Violation Description:	Failure to comply with one or more of the following overfill prevention equipment requirements: Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity; and activate an audible alarm at least five minutes before the tank overfills; or Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent of capacity; or Provide positive shut-off of flow to the tank so that none of the fittings located on the top of the tank are exposed to product due to overfilling. Install/retrofit overfill prevention equipment that does not use flow restrictors on vent piping to meet overfill prevention equipment requirements when the overfill prevention equipment is installed, repaired, or replaced on and after October 1,- 2018. For USTs installed before October 1, 2018, perform an inspection by October 13, 2018 and every 36 months thereafter. For USTs installed on and after October- 1,- 2018, perform an inspection at installation and every 36 months thereafter. Inspected within 30 days after a repair to the overfill prevention equipment. Inspected

ROADRUNNER GAS (Continued) **S121745976**

using an applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Inspected by a certified UST service technician. Maintain records of overfill prevention equipment inspection for 36 months.

Violation Notes: Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility had not completed their triennial overfill prevention testing. CORRECTIVE ACTION: The facility needs to complete the required triennial overfill prevention testing. All drop tubes must be removed, tested for functionality, and measured.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 04-05-2017
Citation: HSC 6.7 29291(b) - California Health and Safety Code, Chapter 6.7, Section(s) 29291(b)
Violation Description: Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance into the secondary containment.
Violation Notes: Returned to compliance on 05/04/2017. Liquid was observed in all fill sumps and STP sumps. All sumps are to remain free of liquid and debris in order to detect a leak at the earliest opportunity. Remove all liquid from the sump by the comply by date.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 03-28-2018
Citation: 23 CCR 16 2641(j) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(j)
Violation Description: Failure of the leak detection equipment to be installed, calibrated, operated, and/or maintained properly.
Violation Notes: Returned to compliance on 03/28/2018. Observed the 87 annular sensor incorrectly installed. Leak detection equipment shall be installed per the manufacturers installation specifications. Sensor was replaced and reinstalled during the annual monitoring certification.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 148463
Site Name: ROADRUNNER GAS
Violation Date: 11-23-2015
Citation: 23 CCR 16 2632, 2634, 2636, 2666 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632, 2634, 2636, 2666
Violation Description: Failure of the leak detection equipment to be properly programmed or properly operated.
Violation Notes: Returned to compliance on 12/18/2015. Observed leak detection equipment in the 87 STP sump not installed pursuant to the manufacturers directions. The leak detection equipment has been installed utilizing wire nuts on their final connections. These connections should be sealed utilizing the appropriate epoxy pack to seal out the elements and prevent any discharge of electricity. Review

ROADRUNNER GAS (Continued) **S121745976**

	the sensor installation an re-install pursuant to the manufacturers instructions. Submit photo showing these connections are now properly sealed.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	03-28-2018
Citation:	HSC 6.7 25284, 25286 - California Health and Safety Code, Chapter 6.7, Section(s) 25284, 25286
Violation Description:	Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.
Violation Notes:	Returned to compliance on 05/17/2018. Facility has not submitted the UST section in the California Environmental Reporting System (CERS) since 12/2/2015. UST section shall be reviewed for accuracy and submitted on an annual basis. Review/update UST section in CERS by the comply by date.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Description:	Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility was missing all UST financial documentation (UST financial responsibility and letter to the CFO) onsite. CORRECTIVE ACTION: All UST documentation that is uploaded into the CERS database needs to be kept onsite.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	11-23-2015
Citation:	HSC 6.7 25291 - California Health and Safety Code, Chapter 6.7, Section(s) 25291
Violation Description:	Failure to maintain under-dispenser containment, sumps, and/or other secondary containment in good condition and/or free of debris/liquid.
Violation Notes:	Returned to compliance on 09/29/2016. Observed liquid in the UDC 5/6 and 87 fill sump. Sumps shall remain free of liquid and debris at all times in order to detect a leak/release at the earliest opportunity. Submit photo by the comply by date showing areas are now free of liquid.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS

ROADRUNNER GAS (Continued) **S121745976**

Violation Date:	04-01-2019
Citation:	HSC 6.5 25123.3(h)(1) - California Health and Safety Code, Chapter 6.5, Section(s) 25123.3(h)(1)
Violation Description:	Failure to send hazardous waste offsite for treatment, storage, or disposal within 180 days (or 270 days if waste is transported over 200 miles) for a generator who generates less than 1000 kilogram per month if all of the following conditions are met: (1) The quantity of hazardous waste accumulated onsite never exceeds 6,000 kilograms. (2) The generator complies with the requirements of 40 Code of Federal Regulations section 262.34(d), (e) and (f). (3) The generator does not hold acutely hazardous waste or extremely hazardous waste in an amount greater than one kilogram for more than 90 days.
Violation Notes:	Returned to compliance on 04/22/2019. OBSERVATION: At the time of inspection this facility had exceeded the accumulation time limit for hazardous waste stored onsite. The waste liquid that had been accumulating onsite had not been disposed of since 2016. CORRECTIVE ACTION: This facility needs to ensure that all hazardous waste accumulated onsite is disposed of within 180 days of the start accumulation date. The waste that is currently onsite will need to be disposed of within 30 days.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HW
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-01-2019
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit a site map with all required content.
Violation Notes:	Returned to compliance on 04/17/2019. OBSERVATION: At the time of inspection the facility site map in CERS was missing information. CORRECTIVE ACTION: The facility needs to update and submit a revised facility site map. The site map should contain the following: North designated, locations of all hazardous materials, utility shut-off points (water, electric, gas), adjacent streets, access and egress points, loading areas, evacuation routes and reassembly areas, location of emergency equipment (first aid station, fire extinguishers, fire hydrants, etc.), and the locations of any storm drains.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HMRRP
Violation Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Violation Date:	04-05-2017
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 05/04/2017. The 87,91, and DSL buckets were measured at a capacity no more than 3.5 gallons when full. All spill

ROADRUNNER GAS (Continued) **S121745976**

buckets shall have a minimum capacity of five gallons. Replace the buckets and submit passing test results by the comply by date.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-01-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-05-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-13-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-01-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-30-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported

ROADRUNNER GAS (Continued) **S121745976**

Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-28-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-01-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-13-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-23-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

ROADRUNNER GAS (Continued) **S121745976**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	11-08-2013
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	El Dorado County Environmental Management
Eval Program:	UST
Eval Source:	CERS

Enforcement Action:

Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	03-28-2018
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	UST
Enf Action Source:	CERS

Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	04-01-2019
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	04-01-2019
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	HW
Enf Action Source:	CERS

Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	04-01-2019
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection

ROADRUNNER GAS (Continued) **S121745976**

Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	UST
Enf Action Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	04-05-2017
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	UST
Enf Action Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	08-30-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	UST
Enf Action Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	11-13-2015
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	HW
Enf Action Source:	CERS
Site ID:	148463
Site Name:	ROADRUNNER GAS
Site Address:	2933 HWY 50
Site City:	SOUTH LAKE TAHOE
Site Zip:	96150
Enf Action Date:	11-23-2015
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	UST
Enf Action Source:	CERS

ROADRUNNER GAS (Continued) **S121745976**

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Dalip Mann
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	TAHOE ROADRUNNER INC
Entity Title:	Not reported
Affiliation Address:	2933 US HWY 40
Affiliation City:	SO LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	96150
Affiliation Phone:	(831) 710-1230

Affiliation Type Desc:	Operator
Entity Name:	TAHOE ROADRUNNER INC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(831) 710-1230

Affiliation Type Desc:	Parent Corporation
Entity Name:	ROADRUNNER GAS & LIQUOR
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	UST Property Owner Name
Entity Name:	Sweeny Enterprises
Entity Title:	Not reported
Affiliation Address:	26 Encina Drive
Affiliation City:	Carmel Valley
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93924
Affiliation Phone:	(831) 659-1608

Affiliation Type Desc:	CUPA District
Entity Name:	El Dorado County Environmental Management
Entity Title:	Not reported
Affiliation Address:	2850 Fairlane Court, Bldg C
Affiliation City:	Placerville
Affiliation State:	CA

ROADRUNNER GAS (Continued) **S121745976**

Affiliation Country:	Not reported
Affiliation Zip:	95667-4100
Affiliation Phone:	(530) 621-5300
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2933 US HWY 50
Affiliation City:	SOUTH LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	DALIP MANN
Entity Title:	Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(831) 710-1230
Affiliation Type Desc:	Identification Signer
Entity Name:	DALIP MANN
Entity Title:	MANAGER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Operator
Entity Name:	TAHOE ROADRUNNER INC
Entity Title:	Not reported
Affiliation Address:	2933 US HWY 50
Affiliation City:	South Lake Tahoe
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	96150
Affiliation Phone:	(831) 710-1230
Affiliation Type Desc:	Environmental Contact
Entity Name:	DALIP MANN
Entity Title:	Not reported
Affiliation Address:	2933 US HWY 50
Affiliation City:	South Lake Tahoe
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Owner
Entity Name:	Sweeny Enterprises
Entity Title:	Not reported

ROADRUNNER GAS (Continued) **S121745976**

Affiliation Address:	26 Encina Drive
Affiliation City:	Carmel Valley
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	93924
Affiliation Phone:	(831) 659-1608

C6 **JERRYS SHELL SERVICE** **EDR Hist Auto** **1020192038**
South **HWY 50 & SANTA FE** **N/A**
< 1/8 **S LAKE TAHOE, CA 95705**
0.095 mi.
500 ft. **Site 3 of 3 in cluster C**

Relative: EDR Hist Auto
Higher

Actual:
6346 ft.

Year:	Name:	Type:
1969	JERRYS SHELL SERVICE	Gasoline Service Stations
1970	JERRYS SHELL SERVICE	Gasoline Service Stations
1971	JERRYS SHELL SERVICE	Gasoline Service Stations
1987	MEYERS SHELL	Grocery Stores
1988	MEYERS SHELL	Grocery Stores
1989	MEYERS SHELL	Grocery Stores
1990	MEYERS SHELL	Grocery Stores
1991	MEYERS SHELL	Grocery Stores
1992	MEYERS SHELL	Grocery Stores
1993	MEYERS SHELL	Grocery Stores

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7 **MEYERS SHELL STATION** **LUST** **S104891098**
WSW **1866 SANTA FE ROAD** **HIST CORTESE** **N/A**
< 1/8 **SOUTH LAKE TAHOE, CA 96150** **CERS**
0.111 mi.
587 ft.

Relative: LUST:
Higher

Actual:
6328 ft.

Name:	MEYERS SHELL STATION
Address:	1866 SANTA FE ROAD
City,State,Zip:	MEYERS, CA 96150
Lead Agency:	LAHONTAN RWQCB (REGION 6T)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601700147
Global Id:	T0601700147
Latitude:	38.8565224
Longitude:	-120.0160786
Status:	Completed - Case Closed
Status Date:	02/24/2010
Case Worker:	TML
RB Case Number:	6T0295A
Local Agency:	Not reported
File Location:	State Records Center
Local Case Number:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	The case file was sent to State Records in September 2011 (List: 786; Boxes: 7-8; Location: tbd).

MEYERS SHELL STATION (Continued) **S104891098**

LUST:
Global Id: T0601700147
Contact Type: Regional Board Caseworker
Contact Name: TAMMY LUNDQUIST
Organization Name: LAHONTAN RWQCB (REGION 6T)
Address: 2501 LAKE TAHOE BLVD.
City: SOUTH LAKE TAHOE
Email: tammy.lundquist@waterboards.ca.gov
Phone Number: 5305425400

LUST:
Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/20/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 11/09/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/26/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/18/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/16/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/21/1998
Action: 13308 Time Schedule Order

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/14/1999
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/18/2001
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/14/2008
Action: Verbal Enforcement

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 11/16/2005
Action: Meeting

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/15/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/21/2006
Action: Corrective Action Plan / Remedial Action Plan

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/15/2005
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/15/2007
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/03/2008
Action: Verbal Enforcement

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/19/2006
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/27/2005
Action: Staff Letter

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE

MEYERS SHELL STATION (Continued) **S104891098**

Date: 08/25/2008
Action: Well Destruction Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/15/2009
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 04/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/15/2007
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/09/2007
Action: Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/28/2005
Action: Clean-up and Abatement Order

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/10/2009
Action: Request for Closure

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/26/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2004
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/17/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/22/2005
Action: Remedial Progress Report

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/1999
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/14/2001
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 04/15/2008
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 11/13/2002
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 02/04/2003
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/13/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/20/1999
Action: Clean-up and Abatement Order

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/30/1998
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/12/2001
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/13/2001
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT

MEYERS SHELL STATION (Continued) **S104891098**

Date: 10/02/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/07/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/01/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/23/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/03/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/17/2001
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/03/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/13/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/18/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/01/2000
Action: Clean-up and Abatement Order

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/15/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/04/2000
Action: Staff Letter

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/20/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/21/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/31/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/27/2000
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/26/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/01/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/20/1999
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/22/1998
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/18/1998
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/08/1999
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 02/10/2003
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT

MEYERS SHELL STATION (Continued) **S104891098**

Date: 08/27/2002
Action: Meeting

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/10/2002
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/24/2002
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/07/2002
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/06/2002
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/15/2001
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 11/09/2000
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/31/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/12/2000
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/19/2000
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/09/2000
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/19/2001
Action: Staff Letter

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/17/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/10/2001
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/06/2010
Action: Verbal Enforcement

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/20/2009
Action: Letter - Notice

Global Id: T0601700147
Action Type: RESPONSE
Date: 01/15/2010
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/15/2009
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/15/2009
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/15/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/15/2004
Action: Technical Correspondence / Assistance / Other

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/08/2003
Action: Preparation of Agenda Item

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/12/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT

MEYERS SHELL STATION (Continued) **S104891098**

Date: 09/15/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/02/2003
Action: Technical Correspondence / Assistance / Other

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 11/20/2003
Action: Technical Correspondence / Assistance / Other

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/22/2003
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/17/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/02/2003
Action: 13267 Requirement

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/03/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/20/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/22/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 02/24/2010
Action: Closure/No Further Action Letter

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/15/2009
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/16/2002
Action: Other Report / Document

MEYERS SHELL STATION (Continued) **S104891098**

Global Id:	T0601700147
Action Type:	RESPONSE
Date:	06/12/2000
Action:	Monitoring Report - Quarterly
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	12/12/2000
Action:	Monitoring Report - Quarterly
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	09/12/2000
Action:	Monitoring Report - Quarterly
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	03/22/2001
Action:	Other Report / Document
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	04/22/2001
Action:	Other Report / Document
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	01/05/1999
Action:	Other Report / Document
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	01/22/1999
Action:	Other Report / Document
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	08/15/1999
Action:	Soil and Water Investigation Workplan
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	08/31/1999
Action:	Corrective Action Plan / Remedial Action Plan
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	12/31/1999
Action:	Interim Remedial Action Report
Global Id:	T0601700147
Action Type:	RESPONSE
Date:	05/15/2000
Action:	Other Workplan
Global Id:	T0601700147
Action Type:	RESPONSE

MEYERS SHELL STATION (Continued) **S104891098**

Date: 08/01/2000
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/01/2000
Action: Interim Remedial Action Plan

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2002
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/12/2001
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2001
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2000
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/12/2001
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/22/2001
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 10/22/2000
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2002
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/12/2002
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/23/2004
Action: Site Visit / Inspection / Sampling

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 03/17/2005
Action: Meeting

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/06/2005
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 01/31/2005
Action: 13267 Requirement

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/12/2011
Action: Technical Correspondence / Assistance / Other

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/19/2002
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 07/29/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/10/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2003
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 10/08/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/03/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 04/14/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE

MEYERS SHELL STATION (Continued) **S104891098**

Date: 07/23/2003
Action: Other Workplan

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/12/2004
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/09/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/21/2003
Action: Other Workplan

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2004
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/14/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 07/20/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/30/2010
Action: Well Destruction Report

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 06/20/2006
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 06/15/2006
Action: Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 12/20/2006
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/19/2006
Action: Staff Letter

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: RESPONSE
Date: 01/05/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2003
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/12/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/25/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 10/29/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/19/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/13/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 10/07/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/10/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/03/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/12/2003
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE

MEYERS SHELL STATION (Continued) **S104891098**

Date: 09/12/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/10/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/03/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/16/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/19/2003
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/28/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/27/2003
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/05/2003
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/04/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 04/05/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/19/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/02/2005
Action: Remedial Progress Report

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/22/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/11/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 01/28/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 09/16/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2005
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2005
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/12/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 01/03/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/11/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 10/26/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE

MEYERS SHELL STATION (Continued) **S104891098**

Date: 11/04/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: REMEDIATION
Date: 07/14/1999
Action: Pump & Treat (P&T) Groundwater

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 02/06/2008
Action: Staff Letter

Global Id: T0601700147
Action Type: RESPONSE
Date: 11/30/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 08/11/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 07/13/2004
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/24/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/12/2004
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 12/15/2005
Action: Interim Remedial Action Plan

Global Id: T0601700147
Action Type: RESPONSE
Date: 03/25/2005
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/12/2005
Action: Other Report / Document

Global Id: T0601700147
Action Type: RESPONSE
Date: 02/15/2008
Action: Monitoring Report - Quarterly

MEYERS SHELL STATION (Continued) **S104891098**

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 10/30/1998
Action: Clean-up and Abatement Order

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/13/2001
Action: * No Action

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 07/11/2002
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/20/2003
Action: Technical Correspondence / Assistance / Other

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 08/31/2000
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/07/2000
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/14/2000
Action: * Historical Enforcement

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/13/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 09/19/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/14/2003
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 05/31/2002
Action: Staff Letter

Global Id: T0601700147
Action Type: ENFORCEMENT

MEYERS SHELL STATION (Continued) **S104891098**

Date: 04/17/2002
Action: * Verbal Communication

Global Id: T0601700147
Action Type: ENFORCEMENT
Date: 04/03/2002
Action: Staff Letter

Global Id: T0601700147
Action Type: Other
Date: 10/21/1998
Action: Leak Reported

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/15/2006
Action: Monitoring Report - Quarterly

Global Id: T0601700147
Action Type: RESPONSE
Date: 06/15/2006
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/15/2006
Action: Remedial Progress Report

Global Id: T0601700147
Action Type: RESPONSE
Date: 05/15/2006
Action: Monitoring Report - Quarterly

LUST:
Global Id: T0601700147
Status: Open - Case Begin Date
Status Date: 10/21/1998

Global Id: T0601700147
Status: Open - Site Assessment
Status Date: 10/28/1998

Global Id: T0601700147
Status: Open - Remediation
Status Date: 12/30/1998

Global Id: T0601700147
Status: Open - Site Assessment
Status Date: 04/13/1999

Global Id: T0601700147
Status: Open - Remediation
Status Date: 10/04/1999

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 03/10/2000

MEYERS SHELL STATION (Continued) **S104891098**

Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	03/13/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	06/14/2000
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	08/01/2000
Global Id:	T0601700147
Status:	Open - Site Assessment
Status Date:	08/03/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	09/14/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	09/19/2000
Global Id:	T0601700147
Status:	Open - Site Assessment
Status Date:	10/10/2000
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	10/23/2000
Global Id:	T0601700147
Status:	Open - Site Assessment
Status Date:	11/09/2000
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	11/14/2000
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	11/17/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	11/27/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	12/12/2000
Global Id:	T0601700147
Status:	Open - Verification Monitoring
Status Date:	02/09/2001
Global Id:	T0601700147

MEYERS SHELL STATION (Continued) **S104891098**

Status: Open - Verification Monitoring
Status Date: 03/15/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 04/24/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 05/29/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 06/12/2001

Global Id: T0601700147
Status: Open - Remediation
Status Date: 09/13/2001

Global Id: T0601700147
Status: Open - Site Assessment
Status Date: 09/13/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 09/13/2001

Global Id: T0601700147
Status: Completed - Case Closed
Status Date: 10/01/2001

Global Id: T0601700147
Status: Open - Reopen Case
Status Date: 12/17/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 12/18/2001

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 03/14/2002

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 06/17/2002

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 09/12/2002

Global Id: T0601700147
Status: Open - Site Assessment
Status Date: 09/16/2002

Global Id: T0601700147
Status: Open - Remediation

MEYERS SHELL STATION (Continued) **S104891098**

Status Date:	06/27/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	07/20/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	08/28/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	09/10/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	09/19/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	10/07/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	10/29/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	11/13/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	11/25/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	12/10/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	12/15/2003
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	01/05/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	02/04/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	02/18/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	03/03/2004

MEYERS SHELL STATION (Continued) **S104891098**

Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	03/19/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	04/05/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	04/14/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	05/03/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	05/14/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	05/26/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	06/09/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	07/13/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	07/29/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	08/11/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	09/16/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	09/22/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	10/08/2004
Global Id:	T0601700147
Status:	Open - Remediation
Status Date:	10/26/2004
Global Id:	T0601700147

MEYERS SHELL STATION (Continued) **S104891098**

Status: Open - Remediation
Status Date: 11/04/2004

Global Id: T0601700147
Status: Open - Remediation
Status Date: 11/30/2004

Global Id: T0601700147
Status: Open - Remediation
Status Date: 12/03/2004

Global Id: T0601700147
Status: Open - Remediation
Status Date: 12/07/2004

Global Id: T0601700147
Status: Open - Remediation
Status Date: 01/03/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 01/28/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 02/11/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 02/24/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 03/11/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 03/14/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 03/25/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 05/17/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 06/02/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 06/13/2005

Global Id: T0601700147
Status: Open - Remediation

MEYERS SHELL STATION (Continued) **S104891098**

Status Date: 06/22/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 09/14/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 12/15/2005

Global Id: T0601700147
Status: Open - Remediation
Status Date: 03/14/2006

Global Id: T0601700147
Status: Open - Remediation
Status Date: 06/15/2006

Global Id: T0601700147
Status: Open - Remediation
Status Date: 08/23/2006

Global Id: T0601700147
Status: Open - Remediation
Status Date: 09/13/2006

Global Id: T0601700147
Status: Open - Remediation
Status Date: 12/15/2006

Global Id: T0601700147
Status: Open - Verification Monitoring
Status Date: 06/02/2009

Global Id: T0601700147
Status: Completed - Case Closed
Status Date: 02/24/2010

HIST CORTESE:
edr_fname: MEYERS SHELL STATION
edr_fadd1: 1866 Santa Fe Road
City,State,Zip: South Lake Tahoe, CA 96150
Region: CORTESE
Facility County Code: 9
Reg By: LTNKA
Reg Id: 6T0295A

CERS:
Name: MEYERS SHELL STATION
Address: 1866 SANTA FE ROAD
City,State,Zip: MEYERS, CA 96150
Site ID: 190310
CERS ID: T0601700147
CERS Description: Leaking Underground Storage Tank Cleanup Site

MEYERS SHELL STATION (Continued) **S104891098**

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: TAMMY LUNDQUIST - LAHONTAN RWQCB (REGION 6T)
Entity Title: Not reported
Affiliation Address: 2501 LAKE TAHOE BLVD.
Affiliation City: SOUTH LAKE TAHOE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 5305425400

D8 **STEVE'S TRANSMISSION** **CERS HAZ WASTE** **S121790969**
SSW **2950 US HWY 50** **CUPA Listings** **N/A**
< 1/8 **SO LAKE TAHOE, CA 96150** **CERS**
0.117 mi.
618 ft. **Site 1 of 2 in cluster D**

Relative:
Higher

Actual:
6341 ft.

CERS HAZ WASTE:
Name: STEVE'S TRANSMISSION
Address: 2950 US HWY 50
City,State,Zip: SO LAKE TAHOE, CA 96150
Site ID: 71496
CERS ID: 10203001
CERS Description: Hazardous Waste Generator

CUPA EL DORADO:
Name: STEVE'S TRANSMISSION
Address: 2950 US HWY 50
City,State,Zip: SO LAKE TAHOE, CA 96150
PE: BUSINESS PLANS/SMALL BUSINESS
Status: Active, billable
Latitude: 39
Longitude: -120
Name: VOLTL , SIEGFRIED, JR.
Email: Not reported
Address2: 2950 US HWY 50
Permit: PT0002766
Phone: 5305771500
Second Phone: 5303183431
APN: 03440201
RP Name: SIEG VOLTL
RP Care of: Not reported
RP Phone: 5305771500
GIS Elevation: Not reported
CERSID: 10203001
Business Type: MOTOR VEHICLE FUEL
Current Inspection Date: 12/04/2021
Last Inspection Date: 07/08/2016

Name: STEVE'S TRANSMISSION
Address: 2950 US HWY 50
City,State,Zip: SO LAKE TAHOE, CA 96150
PE: U.G.S.T. ANNUAL PERMIT
Status: Inactive, non-billable
Latitude: 39
Longitude: -120

STEVE'S TRANSMISSION (Continued) **S121790969**

Name:	Not reported
Email:	Not reported
Address2:	2950 US HWY 50
Permit:	PT0004528
Phone:	5305771500
Second Phone:	5303183431
APN:	03440201
RP Name:	SIEG VOLTL
RP Care of:	Not reported
RP Phone:	5305771500
GIS Elevation:	Not reported
CERSID:	10203001
Business Type:	MOTOR VEHICLE FUEL
Current Inspection Date:	12/04/2021
Last Inspection Date:	07/08/2016

CERS:

Name:	STEVE'S TRANSMISSION
Address:	2950 US HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Site ID:	71496
CERS ID:	10203001
CERS Description:	Chemical Storage Facilities

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	12-04-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	El Dorado County Environmental Management
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	12-04-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	El Dorado County Environmental Management
Eval Program:	HW
Eval Source:	CERS

Affiliation:

Affiliation Type Desc:	Operator
Entity Name:	SIEGFRIED VOLTL JR
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 318-3431

Affiliation Type Desc:	CUPA District
Entity Name:	El Dorado County Environmental Management
Entity Title:	Not reported

STEVE'S TRANSMISSION (Continued) **S121790969**

Affiliation Address:	2850 Fairlane Court, Bldg C
Affiliation City:	Placerville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95667-4100
Affiliation Phone:	(530) 621-5300
Affiliation Type Desc:	Document Preparer
Entity Name:	sieg voltl
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	STEVE'S TRANSMISSION
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	Greg Daum
Entity Title:	Not reported
Affiliation Address:	PO BOX 550160
Affiliation City:	SOUTH LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	96150
Affiliation Phone:	(530) 318-3087
Affiliation Type Desc:	Environmental Contact
Entity Name:	SIEG VOLTL
Entity Title:	Not reported
Affiliation Address:	2950 US HWY 50
Affiliation City:	SOUTH LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	VOLTL , SIEGFRIED, JR.
Entity Title:	Not reported
Affiliation Address:	300 NEVADA S
Affiliation City:	MARKLEEVILLE
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	96120
Affiliation Phone:	(530) 531-8343

STEVE'S TRANSMISSION (Continued) **S121790969**

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2950 US HWY 50
Affiliation City:	SO LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	SIEG VOLTL
Entity Title:	OWNER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

B9 **BOB'S HEATING** **CUPA Listings** **S110983575**
WSW **1802 SANTA FE AVE 4** **N/A**
< 1/8 **SO LAKE TAHOE, CA 96150**
0.120 mi.
636 ft. **Site 2 of 2 in cluster B**

Relative:
Higher

Actual:
6325 ft.

CUPA EL DORADO:

Name:	BOB'S HEATING
Address:	1802 SANTA FE AVE 4
City,State,Zip:	SO LAKE TAHOE, CA 96150
PE:	CUPA HW GENERATOR <55 GAL MATERIAL STORED
Status:	Inactive, non-billable
Latitude:	39
Longitude:	-120
Name:	WASILCHUK , ROBERT
Email:	Not reported
Address2:	Not reported
Permit:	PT0010362
Phone:	5305775562
Second Phone:	5304005562
APN:	03440213
RP Name:	Not reported
RP Care of:	Not reported
RP Phone:	0000000000
GIS Elevation:	Not reported
CERSID:	Not reported
Business Type:	OTHER
Current Inspection Date:	07/16/2010
Last Inspection Date:	07/16/2007

D10
SSW
1/8-1/4
0.146 mi.
770 ft.

TAHOE MINI STORAGE (SUPPLY ONE
HIGHWAY 50
MEYERS, CA 96150

Site 2 of 2 in cluster D

LUST **S110654054**
CERS **N/A**

Relative:
Higher

Actual:
6345 ft.

LUST:

Name:	TAHOE MINI STORAGE (SUPPLY ONE
Address:	HIGHWAY 50
City,State,Zip:	MEYERS, CA 96150
Lead Agency:	LAHONTAN RWQCB (REGION 6T)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601700107
Global Id:	T0601700107
Latitude:	38.8562697
Longitude:	-120.01356
Status:	Completed - Case Closed
Status Date:	07/23/2002
Case Worker:	BDG
RB Case Number:	6T0107A
Local Agency:	Not reported
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0601700107
Contact Type:	Regional Board Caseworker
Contact Name:	BRIAN GREY
Organization Name:	LAHONTAN RWQCB (REGION 6T)
Address:	2501 LAKE TAHOE BOULEVARD
City:	SOUTH LAKE TAHOE
Email:	bgrey@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0601700107
Action Type:	ENFORCEMENT
Date:	06/11/2002
Action:	* No Action
Global Id:	T0601700107
Action Type:	ENFORCEMENT
Date:	07/23/2002
Action:	Closure/No Further Action Letter
Global Id:	T0601700107
Action Type:	ENFORCEMENT
Date:	06/11/2002
Action:	Site Visit / Inspection / Sampling
Global Id:	T0601700107
Action Type:	Other
Date:	06/07/1991
Action:	Leak Discovery
Global Id:	T0601700107

TAHOE MINI STORAGE (SUPPLY ONE (Continued) **S110654054**

Action Type: REMEDIATION
Date: 10/07/1995
Action: Excavation

Global Id: T0601700107
Action Type: ENFORCEMENT
Date: 04/03/2002
Action: Staff Letter

Global Id: T0601700107
Action Type: Other
Date: 06/05/1991
Action: Leak Reported

LUST:
Global Id: T0601700107
Status: Open - Case Begin Date
Status Date: 06/05/1991

Global Id: T0601700107
Status: Open - Site Assessment
Status Date: 06/07/1991

Global Id: T0601700107
Status: Open - Site Assessment
Status Date: 12/27/1995

Global Id: T0601700107
Status: Completed - Case Closed
Status Date: 07/23/2002

CERS:
Name: TAHOE MINI STORAGE (SUPPLY ONE
Address: HIGHWAY 50
City,State,Zip: MEYERS, CA 96150
Site ID: 215577
CERS ID: T0601700107
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: BRIAN GREY - LAHONTAN RWQCB (REGION 6T)
Entity Title: Not reported
Affiliation Address: 2501 LAKE TAHOE BOULEVARD
Affiliation City: SOUTH LAKE TAHOE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

11
SSE
1/8-1/4
0.176 mi.
931 ft.

STPUD NORTH APACHE BOOSTER
1922 APACHE AVE
SOUTH LAKE TAHOE, CA 96150

CUPA Listings **S112135684**
CERS **N/A**

Relative:
Higher

Actual:
6371 ft.

CUPA EL DORADO:

Name:	STPUD NORTH APACHE BOOSTER
Address:	1922 APACHE AVE
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
PE:	BUSINESS PLANS/SMALL BUSINESS
Status:	Active, billable
Latitude:	39
Longitude:	-120
Name:	SOUTH TAHOE PUD
Email:	Not reported
Address2:	1922 APACHE AVE
Permit:	PT0013349
Phone:	5305436251
Second Phone:	5305436251
APN:	03408310
RP Name:	Chris Stanley
RP Care of:	Not reported
RP Phone:	5305436251
GIS Elevation:	Not reported
CERSID:	10204498
Business Type:	OTHER
Current Inspection Date:	10/12/2020
Last Inspection Date:	06/25/2017

CERS:

Name:	STPUD NORTH APACHE BOOSTER
Address:	1922 APACHE AVE
City,State,Zip:	SOUTH LAKE TAHOE, CA 96150
Site ID:	71770
CERS ID:	10204498
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	71770
Site Name:	STPUD NORTH APACHE BOOSTER
Violation Date:	10-12-2017
Citation:	HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description:	Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Notes:	Observed 90 gallons of Sodium Hypochlorite and 300 gallons Diesel fuel stored onsite. Only 250 gallons of Diesel fuel has been reported in the California Environmental Reporting System (CERS). Enter all hazardous materials into CERS by the comply by date.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-12-2017
Violations Found:	Yes

STPUD NORTH APACHE BOOSTER (Continued) **S112135684**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-25-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Facility meets standards for hazardous materials storage.
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 71770
Site Name: STPUD NORTH APACHE BOOSTER
Site Address: 1922 APACHE AVE
Site City: SOUTH LAKE TAHOE
Site Zip: 96150
Enf Action Date: 10-12-2017
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: HMRRP
Enf Action Source: CERS

Affiliation:
Affiliation Type Desc: Legal Owner
Entity Name: South Tahoe PUD
Entity Title: Not reported
Affiliation Address: 1275 MEADOW CREST DR
Affiliation City: SO LAKE TAHOE
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 96150
Affiliation Phone: (530) 544-6474

Affiliation Type Desc: Operator
Entity Name: Chris Stanley
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (530) 543-6251

Affiliation Type Desc: Document Preparer
Entity Name: JON BACHELDER
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported

STPUD NORTH APACHE BOOSTER (Continued) **S112135684**

Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Chris Stanley
Entity Title:	Not reported
Affiliation Address:	1275 MEADOW CREST DR
Affiliation City:	SO LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	SOUTH TAHOE PUBLIC UTILITY DISTRICT
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	1275 MEADOW CREST DR
Affiliation City:	SO LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96150
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	El Dorado County Environmental Management
Entity Title:	Not reported
Affiliation Address:	2850 Fairlane Court, Bldg C
Affiliation City:	Placerville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95667-4100
Affiliation Phone:	(530) 621-5300
Affiliation Type Desc:	Identification Signer
Entity Name:	Chris Stanley
Entity Title:	MANAGER OF FIELD OPERATIONS
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

E12
SSW
1/8-1/4
0.179 mi.
945 ft.

MEEK'S LUMBER & HARDWARE
2970 HWY 50
SO LAKE TAHOE, CA 96150

Site 1 of 4 in cluster E

CERS HAZ WASTE
CUPA Listings

S123536908
N/A

Relative:
Higher

Actual:
6342 ft.

CERS HAZ WASTE:

Name:	MEEK'S LUMBER & HARDWARE
Address:	2970 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Site ID:	134052
CERS ID:	10203331
CERS Description:	Hazardous Waste Generator

Violations:

Site ID:	134052
Site Name:	Meek's Lumber & Hardware
Violation Date:	02-19-2019
Citation:	40 CFR 1 262.34(d)(5)(ii) - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 262.34(d)(5)(ii)
Violation Description:	Failure to post the following information next to the telephone: (A) The name and telephone number of the emergency coordinator; (B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and (C) The telephone number of the fire department, unless the facility has a direct alarm.
Violation Notes:	Returned to compliance on 02/19/2019. OBSERVATION: Failure to post the following information next to the telephone: (A) The name and telephone number of the emergency coordinator; (B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and (C) The telephone number of the fire department, unless the facility has a direct alarm. CORRECTIVE ACTION: Site Map and Emergency Contact Numbers posted at time of inspection in office adjacent to yard.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HW
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-19-2019
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	El Dorado County Environmental Management
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	02-19-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	El Dorado County Environmental Management
Eval Program:	HMRRP
Eval Source:	CERS

Enforcement Action:

Site ID:	134052
Site Name:	Meek's Lumber & Hardware

MEEK'S LUMBER & HARDWARE (Continued) **S123536908**

Site Address:	2970 HWY 50
Site City:	SO LAKE TAHOE
Site Zip:	96150
Enf Action Date:	02-19-2019
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	El Dorado County Environmental Management
Enf Action Program:	HW
Enf Action Source:	CERS

Affiliation:

Affiliation Type Desc:	CUPA District
Entity Name:	El Dorado County Environmental Management
Entity Title:	Not reported
Affiliation Address:	2850 Fairlane Court, Bldg C
Affiliation City:	Placerville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95667-4100
Affiliation Phone:	(530) 621-5300

Affiliation Type Desc:	Environmental Contact
Entity Name:	Greg Gay
Entity Title:	Not reported
Affiliation Address:	PO Box 255749
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95865
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Terri Neely
Entity Title:	Human Resources Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Document Preparer
Entity Name:	Terri Neely
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	PO Box 255749
Affiliation City:	Sacramento

MEEK'S LUMBER & HARDWARE (Continued) **S123536908**

Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95865
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Cha-dor Realty dba Meek's Lumber & Hardware
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	Cha-dor Realty dba Meek's Lumber & Hardware
Entity Title:	Not reported
Affiliation Address:	PO Box 255749
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95865
Affiliation Phone:	(916) 576-3042
Affiliation Type Desc:	Operator
Entity Name:	Mickey McKoy
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 577-0550
Affiliation Type Desc:	Property Owner
Entity Name:	Cha-dor Realty dba Meek's Lumber & Hardware
Entity Title:	Not reported
Affiliation Address:	PO Box 255749
Affiliation City:	Sacramento
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	95865
Affiliation Phone:	(916) 576-3042

CUPA EL DORADO:

Name:	MEEK'S LUMBER & HARDWARE
Address:	2970 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
PE:	BUSINESS PLANS/LARGE BUSINESSES
Status:	Active, billable
Latitude:	39
Longitude:	-120
Name:	Cha-dor Realty dba Meek's Lumber & Hardware
Email:	Not reported
Address2:	2970 HWY 50

MEEK'S LUMBER & HARDWARE (Continued) **S123536908**

Permit:	PT0004574
Phone:	5305770550
Second Phone:	5305770550
APN:	03467112
RP Name:	Terri Neely
RP Care of:	Not reported
RP Phone:	9165763042
GIS Elevation:	Not reported
CERSID:	10203331
Business Type:	MOTOR VEHICLE FUEL
Current Inspection Date:	02/20/2022
Last Inspection Date:	02/19/2022

E13 **TAHOE PARADISE CHEVRON** **UST** **U004266755**
SSW **2986 HWY 50** **N/A**
1/8-1/4 **SO LAKE TAHOE, CA 96150**
0.186 mi.
981 ft. **Site 2 of 4 in cluster E**

Relative:
Higher

Actual:
6349 ft.

UST:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Facility ID:	fa0001365
Permitting Agency:	El Dorado County Environmental Management
Latitude:	38.8558
Longitude:	-120.014

E14 **TAHOE PARADISE CHEVRON** **CERS HAZ WASTE** **S121748038**
SSW **2986 HWY 50** **CERS TANKS** **N/A**
1/8-1/4 **SO LAKE TAHOE, CA 96150** **CUPA Listings**
0.186 mi. **CERS**
981 ft. **Site 3 of 4 in cluster E**

Relative:
Higher

Actual:
6349 ft.

CERS HAZ WASTE:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Site ID:	159525
CERS ID:	10202983
CERS Description:	Hazardous Waste Generator

CERS TANKS:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Site ID:	159525
CERS ID:	10202983
CERS Description:	Underground Storage Tank

CUPA EL DORADO:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
PE:	BUSINESS PLANS/SMALL BUSINESS

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Status:	Active, billable
Latitude:	39
Longitude:	-120
Name:	DAUM ENTERPRISES, INC.
Email:	Not reported
Address2:	2986 HWY 50
Permit:	PT0002794
Phone:	5305771127
Second Phone:	5303183087
APN:	03467103
RP Name:	greg daum
RP Care of:	Not reported
RP Phone:	5305771127
GIS Elevation:	6345
CERSID:	10202983
Business Type:	MOTOR VEHICLE FUEL
Current Inspection Date:	10/16/2019
Last Inspection Date:	10/17/2018

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
PE:	U.G.S.T. ANNUAL PERMIT
Status:	Active, billable
Latitude:	39
Longitude:	-120
Name:	Not reported
Email:	Not reported
Address2:	2986 HWY 50
Permit:	PT0004339
Phone:	5305771127
Second Phone:	5303183087
APN:	03467103
RP Name:	greg daum
RP Care of:	Not reported
RP Phone:	5305771127
GIS Elevation:	6345
CERSID:	10202983
Business Type:	MOTOR VEHICLE FUEL
Current Inspection Date:	10/16/2019
Last Inspection Date:	10/17/2018

CERS:

Name:	TAHOE PARADISE CHEVRON
Address:	2986 HWY 50
City,State,Zip:	SO LAKE TAHOE, CA 96150
Site ID:	159525
CERS ID:	10202983
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	12-05-2016
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: Failure to

TAHOE PARADISE CHEVRON (Continued) **S121748038**

	install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 12/05/2016. During initial testing of the diesel spill bucket it was observed that liquid was entering into the drop tube from the spill bucket. Spill bucket shall be capable of containing 5 gallons of hazardous substance. Service technician was able to fix the leaking component of the spill bucket and retest the spill bucket.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	HSC 6.7 25291 - California Health and Safety Code, Chapter 6.7, Section(s) 25291
Violation Description:	Failure to maintain under-dispenser containment, sumps, and/or other secondary containment in good condition and/or free of debris/liquid.
Violation Notes:	Returned to compliance on 10/21/2015. Liquid was observed in the following containment sumps: 87 Tank 1 fill sump, 87 Tank 2 fill sump, and Diesel fill sump. Sumps shall remain free of liquid and debris at all times in order to detect a leak at the earliest possible opportunity. Liquid was removed from containment sumps by service technician during inspection.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	23 CCR 16 2632, 2634, 2636, 2666 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632, 2634, 2636, 2666
Violation Description:	Failure of the leak detection equipment to be properly programmed or properly operated.
Violation Notes:	Returned to compliance on 11/17/2015. During the monitoring certification the system failed to provide positive shutdown to all of the STP sumps when the sensors were disconnected from the console during sensor out conditions. This violation has been noted during previous inspections conducted on 10/16/2013, 10/20/2011, and 11/23/2009. After each failure of system during the previous tests the system has had to be reprogrammed and retested with passing results. The monitoring system is not working as designed as it routinely fails to maintain proper programming , as such you are required to have a Veeder Root certified agent diagnose and repair the monitoring console. Upon completion of the repair, provide sufficient documentation to EDC EMD explaining the cause and correction for the systems routine loss of programming along with any and all reports and invoices submitted by the repair agent.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	12-05-2016
Citation:	23 CCR 16 2641(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(a)
Violation Description:	Failure of leak detection equipment to be located such that equipment is capable of detecting a leak at the earliest possible opportunity.
Violation Notes:	Returned to compliance on 12/05/2016. Observed the diesel under dispenser containment (UDC) sensor not located at the lowest point of the containment. Sensor was observed zip tied approximately 1.5 inches off the bottom of the UDC. Sensor shall be placed at the lowest point of the containment in order to detect a leak or release at the earliest opportunity. Service technician cut the zip tie and repositioned the sensor on the bottom of the sump.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description:	Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Notes:	Returned to compliance on 11/17/2015. Observed 2 drums of hazardous waste materials stored out back behind the store without proper labeling on containers. Containers storing hazardous waste shall be properly labeled with the following: Hazardous Waste, name and address of the generator, physical state and chemical characteristics of the hazardous waste, generators CAL EPA ID, accumulation starting date. Gave two labels to facility employee. Submit photo by the comply by date showing waste drums have now been properly labeled.
Violation Division:	El Dorado County Environmental Management
Violation Program:	HW
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-17-2017
Citation:	23 CCR 16 2715(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)
Violation Description:	Failure to comply with one or more of the following designated operator (DO) monthly inspection requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been properly trained.
Violation Notes:	Returned to compliance on 11/07/2017. No designated operator report was available for the month of December 2016. Desingated operator reports shall be maintained onsite for the previous 12 months.

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-17-2017
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:Monitor at least hourly.Be capable of detecting a release of 3.0 gallons per hour at 10 p.s.i.g. Restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 11/07/2017. 87(1) product mechanical line leak detector failed detect a 3 gph leak at 10 p.s.i. during annual testing. Line leak detector must be capable of detecting and restricting the flow of product to the dispenser. Replace/retest line leak detector by the comply by date.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	23 CCR 16 2641(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(a)
Violation Description:	Failure to maintain secondarily contained piping to allow liquid in the event of a leak to drain into sump (i.e. failure to remove test boot, pipe swelling).
Violation Notes:	Returned to compliance on 10/21/2015. Observed secondary containment test boots that had not been removed after testing had been conducted. Test boots shall be loosened or turned down with the schrader valve removed after testing has been conducted. Test boots were loosened or turned down with schraders valves removed by service technician during the inspection.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	23 CCR 16 2715 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715
Violation Description:	Failure to comply with one or more of the designated operator monthly inspection requirements: failed to inspect the monthly alarm history report; attach a copy of the alarm history; failed to inspect for the presence of liquid or debris in the spill container/spill bucket and under dispenser containment; failed to inspect the under dispenser containment to ensure that monitoring equipment is placed in the proper position; failure to inspect for liquid or debris in the containment sump where an alarm occurred or for which there is no record of a service visit; or failure to check that all testing and maintenance has been completed and documented.
Violation Notes:	Returned to compliance on 12/03/2015. Designated operator reports for

TAHOE PARADISE CHEVRON (Continued) **S121748038**

the past 12 months were observed without attached copy of alarm history. During the monthly inspection of the facility, the DO shall attach a copy of the alarm history to the DO report. Submit photo of November DO report showing attached alarm history by the comply by date.

Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 12-05-2016
Citation: 23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description: Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:Monitor at least hourly.Be capable of detecting a release of 3.0 gallons per hour at 10 p.s.i.g. Restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 12/15/2016. Supreme product line leak detector failed during annual testing. Line leak detector shall be capable of detecting a 3.0 gph leak and restricting the flow of product to the dispenser. Leak detector was not replaced during testing. Supreme product turbine must have the power turned off until line leak detector is replaced and retested. Submit documentation by the comply by date showing the line leak detector has been replaced and retested.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 12-05-2016
Citation: 23 CCR 16 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1)
Violation Description: Failure of the leak detection equipment to have an audible and visual alarm as required.
Violation Notes: Returned to compliance on 12/05/2016. 87 Tank 2 STP sump sensor failed to provide an audible and visual alarm and provide positive shutdown to the turbine. Sensor was replaced with a new 208 sensor and retested with passing results.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-21-2015
Citation: 23 CCR 16 2632, 2634, 2636, 2666 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632, 2634, 2636, 2666
Violation Description: Failure of the leak detection equipment to be properly programmed or properly operated.
Violation Notes: Returned to compliance on 10/21/2015. Diesel annular wrap around sensor failed initial testing. Sensor shall be capable of detecting a leak and activating an alarm on the monitoring system. Annular sensor

TAHOE PARADISE CHEVRON (Continued) **S121748038**

	was replaced and retested with passing results during the inspection.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	23 CCR 16 2715(d) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(d)
Violation Description:	Failure to notify the owner or operator of any condition discovered during the monthly visual inspection that may require follow-up actions.
Violation Notes:	Returned to compliance on 11/17/2015. Designated operator reports during the past 12 months were observed without alarms or conditions noted in comments section of the reports. The DO shall make note of any condition discovered during the monthly visual inspection that may require follow up actions. Submit copy of the November DO report by the comply by date and include any conditions or alarms that have occurred that may require follow up.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	10-21-2015
Citation:	23 CCR 16 2712(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)
Violation Description:	Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions
Violation Notes:	Returned to compliance on 11/17/2015. No alarm log was observed during the inspection and multiple alarms were observed on the alarm history print out. Designated operator trained facility staff members were asked where they documented alarms that occurred during the course of the year. Staff members stated they were not aware of any alarm log. All alarms that occur from the monitoring console shall be recorded and appropriate follow up actions of the alarms shall also be documented. Submit documentation of the alarm log the will be used by the facility by the comply by date.
Violation Division:	El Dorado County Environmental Management
Violation Program:	UST
Violation Source:	CERS
Site ID:	159525
Site Name:	TAHOE PARADISE CHEVRON
Violation Date:	11-02-2016
Citation:	23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Description:	Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.
Violation Notes:	Returned to compliance on 12/05/2016. Operator failed to obtain approval and provide notification prior to conducting a monitoring system software upgrade that required a cold start to the UST system. A UST monitoring system cold start was conducted on 11/2/2016. Notification and a permit shall be obtained prior to monitoring console programming or replacement.

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-21-2015
Citation: 23 CCR 16 2715(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(a)
Violation Description: Failure to submit statement of UST compliance and/or Designated Operator certification.
Violation Notes: Returned to compliance on 11/17/2015. The designated operator certification that has been uploaded into the California Environmental Reporting System (CERS) is incomplete as it does not have the designated operator certification expiration date. Upload into CERS current DO agreement form with expiration by the comply by date.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-16-2018
Citation: HSC 6.7 25291(b) - California Health and Safety Code, Chapter 6.7, Section(s) 25291(b)
Violation Description: Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance into the secondary containment.
Violation Notes: Returned to compliance on 10/16/2018. During the inspection, the 91 STP sump sensor failed to go in to alarm. The service technician replaced the sensor and tested it for functionality - it passed. No further actions needed.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-21-2015
Citation: 22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)
Violation Description: Failure to maintain uniform hazardous waste manifest, consolidated manifest, or bills of lading copies for three years.
Violation Notes: Returned to compliance on 12/05/2016. Unable to verify hazardous waste manifests during the inspection as the operator was unavailable. Hazardous waste manifest shall be stored onsite and made available for a minimum of three years. Submit documentation of the past three hazardous waste manifests for this facility by the comply by date.
Violation Division: El Dorado County Environmental Management
Violation Program: HW
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 12-05-2016
Citation: 23 CCR 16 2715(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(i)

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Violation Description: Failure to have a properly qualified service technician test leak detection equipment as required every 12 months (vapor, pressure, hydrostatic (VPH) system, sensors, line-leak detectors (LLD), automatic tank gauge (ATG), etc.).
Violation Notes: Returned to compliance on 12/05/2016. Operator failed to test leak detection equipment every 12 months. The last monitoring certification of the UST system was performed on 10/21/2015. The 2016 monitoring certification was performed 45 days over due on 12/5/2016.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-21-2015
Citation: 23 CCR 16 2715(c)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(2)
Violation Description: Failure to comply with one or more of the following: maintain the spill bucket in good condition, containment free of debris/liquid, and/or to remove the contents of the spill bucket when a release/leak/spill was observed.
Violation Notes: Returned to compliance on 10/21/2015. Liquid was observed in the following spill buckets: Supreme and Diesel . Spill buckets shall remain free of liquid and debris at all times in order to contain product. Liquid was removed from spill buckets by service technician during inspection.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Violation Date: 10-21-2015
Citation: 23 CCR 16 2632, 2634, 2636, 2666 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632, 2634, 2636, 2666
Violation Description: Failure of the leak detection equipment to be properly programmed or properly operated.
Violation Notes: Returned to compliance on 10/21/2015. Supreme product fill sensor failed initial testing. Sensor shall be capable of detecting a leak and activating an alarm on the monitoring console. Sensor was replaced and retested with passing results during the inspection.
Violation Division: El Dorado County Environmental Management
Violation Program: UST
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-16-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-21-2015

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-17-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-21-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-15-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Annual Monitoring Cert and Triennial 989 testing
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-16-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-21-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: El Dorado County Environmental Management
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-05-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Eval Division: El Dorado County Environmental Management
Eval Program: UST
Eval Source: CERS

Enforcement Action:
Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Site Address: 2986 HWY 50
Site City: SO LAKE TAHOE
Site Zip: 96150
Enf Action Date: 10-16-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Site Address: 2986 HWY 50
Site City: SO LAKE TAHOE
Site Zip: 96150
Enf Action Date: 10-17-2017
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Site Address: 2986 HWY 50
Site City: SO LAKE TAHOE
Site Zip: 96150
Enf Action Date: 10-21-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Site Address: 2986 HWY 50
Site City: SO LAKE TAHOE
Site Zip: 96150
Enf Action Date: 10-21-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: UST
Enf Action Source: CERS

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Site ID: 159525
Site Name: TAHOE PARADISE CHEVRON
Site Address: 2986 HWY 50
Site City: SO LAKE TAHOE
Site Zip: 96150
Enf Action Date: 12-05-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: El Dorado County Environmental Management
Enf Action Program: UST
Enf Action Source: CERS

Affiliation:

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: PO BOX 550160
Affiliation City: SO LAKE TAHOE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 96155
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: tahoe paradise chevron
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: UST Permit Applicant
Entity Name: greg daum
Entity Title: owner
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (530) 577-1127

Affiliation Type Desc: UST Property Owner Name
Entity Name: margie daum
Entity Title: Not reported
Affiliation Address: po box 550160
Affiliation City: south lake tahoe
Affiliation State: Ca
Affiliation Country: United States
Affiliation Zip: 96155
Affiliation Phone: (530) 577-1127

Affiliation Type Desc: CUPA District
Entity Name: El Dorado County Environmental Management
Entity Title: Not reported

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Affiliation Address:	2850 Fairlane Court, Bldg C
Affiliation City:	Placerville
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	95667-4100
Affiliation Phone:	(530) 621-5300
Affiliation Type Desc:	Document Preparer
Entity Name:	Greg Daum
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	GREG DAUM
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 550160
Affiliation City:	SO LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	96155
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	GREG DAUM
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(530) 318-3087
Affiliation Type Desc:	Identification Signer
Entity Name:	Greg Daum
Entity Title:	operator
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Owner
Entity Name:	daum enterprises inc
Entity Title:	Not reported
Affiliation Address:	po box 550160
Affiliation City:	south lake tahoe
Affiliation State:	Ca
Affiliation Country:	United States
Affiliation Zip:	96155
Affiliation Phone:	(530) 577-1127

TAHOE PARADISE CHEVRON (Continued) **S121748038**

Affiliation Type Desc:	Legal Owner
Entity Name:	DAUM ENTERPRISES, INC.
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 550160
Affiliation City:	SOUTH LAKE TAHOE
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	96155
Affiliation Phone:	(530) 577-1127

Affiliation Type Desc:	UST Tank Operator
Entity Name:	tahoe paradise chevron
Entity Title:	Not reported
Affiliation Address:	po box 550160
Affiliation City:	south lake tahoe
Affiliation State:	Ca
Affiliation Country:	United States
Affiliation Zip:	96155
Affiliation Phone:	(530) 577-1127

E15 **PARADISE CHEVRON** **LUST** **S105024952**
SSW **2986 50** **HIST CORTESE** **N/A**
1/8-1/4 **MEYERS, CA 95708** **CERS**
0.197 mi.
1042 ft. **Site 4 of 4 in cluster E**

Relative:
Higher

Actual:
6349 ft.

LUST:

Name:	PARADISE CHEVRON
Address:	2986 HIGHWAY 50
City,State,Zip:	MEYERS, CA 96150
Lead Agency:	LAHONTAN RWQCB (REGION 6T)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601700144
Global Id:	T0601700144
Latitude:	38.8556662
Longitude:	-120.0141318
Status:	Completed - Case Closed
Status Date:	09/15/2000
Case Worker:	DFS
RB Case Number:	6T0274A
Local Agency:	Not reported
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

LUST:

Global Id:	T0601700144
Contact Type:	Regional Board Caseworker
Contact Name:	DOUG SMITH
Organization Name:	LAHONTAN RWQCB (REGION 6T)
Address:	2501 LAKE TAHOE BLVD
City:	SOUTH LAKE TAHOE
Email:	dfsmith@waterboards.ca.gov
Phone Number:	Not reported

PARADISE CHEVRON (Continued) **S105024952**

LUST:
Global Id: T0601700144
Action Type: ENFORCEMENT
Date: 08/15/2000
Action: Closure/No Further Action Letter

Global Id: T0601700144
Action Type: Other
Date: 09/12/1990
Action: Leak Discovery

Global Id: T0601700144
Action Type: Other
Date: 09/12/1990
Action: Leak Stopped

Global Id: T0601700144
Action Type: Other
Date: 03/11/1998
Action: Leak Reported

LUST:
Global Id: T0601700144
Status: Open - Case Begin Date
Status Date: 09/12/1990

Global Id: T0601700144
Status: Open - Site Assessment
Status Date: 03/11/1998

Global Id: T0601700144
Status: Completed - Case Closed
Status Date: 09/15/2000

LUST REG 6L:
Region: 6L
Case Number: 6T0 274 A
Active OR Closed Site: Closed
Date Closed: 9/15/00
Type Of Site: UST

HIST CORTESE:
edr_fname: PARADISE CHEVRON
edr_fadd1: 2986 50
City,State,Zip: MEYERS, CA 95708
Region: CORTESE
Facility County Code: 9
Reg By: LTNKA
Reg Id: 6T0274A

CERS:
Name: PARADISE CHEVRON
Address: 2986 HIGHWAY 50
City,State,Zip: MEYERS, CA 96150

PARADISE CHEVRON (Continued) **S105024952**

Site ID: 201869
CERS ID: T0601700144
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: DOUG SMITH - LAHONTAN RWQCB (REGION 6T)
Entity Title: Not reported
Affiliation Address: 2501 LAKE TAHOE BLVD
Affiliation City: SOUTH LAKE TAHOE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SOUTH LAKE TAHOE	S111213133	PIONEER TRAIL ECP III/BIKE LN	PIONEER TRAIL		ENF, CIWQS
SOUTH LAKE TAHOE	1023215103	PIONEER TRAIL ECP III/BIKE LN	PIONEER TRAIL	96150	FINDS

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: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: N/A
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/13/2020
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 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

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: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: N/A
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/13/2020
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

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: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: N/A
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Quarterly

Federal CERCLIS list

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: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list 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). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS 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 the 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. The 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 potential NPL site.

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/27/2020
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: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
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: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
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: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
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: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly 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). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

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: 11/04/2019
Date Data Arrived at EDR: 11/13/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 76

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/10/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Varies

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: 11/22/2019
Date Data Arrived at EDR: 11/22/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/20/2020
Next Scheduled EDR Contact: 06/08/2020
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: 11/22/2019
Date Data Arrived at EDR: 11/22/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/20/2020
Next Scheduled EDR Contact: 06/08/2020
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: 09/09/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 14

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

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: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/07/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
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: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/07/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
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: 11/11/2019
Date Data Arrived at EDR: 11/12/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 57

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/11/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: No Update Planned

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 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 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 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 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 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 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: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 66

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

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: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 12/17/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 12/16/2019
Next Scheduled EDR Contact: 05/04/2020
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: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 08/27/2019
Date Data Arrived at EDR: 08/28/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 75
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 12/06/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/25/2020
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 73

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
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: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/11/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Varies

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: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
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: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/17/2019
Next Scheduled EDR Contact: 04/06/2020
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: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/07/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

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

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/18/2019
Date Data Arrived at EDR: 12/19/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 62

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/06/2020
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: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/16/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

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: 01/24/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 71

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 11/15/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 69

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/25/2020
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: 01/27/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Varies

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: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: No Update Planned

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

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: No Update Planned

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: 10/28/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/07/2020
Number of Days to Update: 70
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

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: 06/30/2018
Date Data Arrived at EDR: 07/16/2019
Date Made Active in Reports: 09/24/2019
Number of Days to Update: 70
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Varies

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

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/21/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/02/2020
Number of Days to Update: 72

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/22/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

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: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

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

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/19/2019
Date Data Arrived at EDR: 12/23/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 60

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
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

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/11/2019
Number of Days to Update: 70

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

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

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/21/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 73

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/22/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Varies

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: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Semi-Annually

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: 12/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
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: 12/05/2019
Date Data Arrived at EDR: 12/06/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 70

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/06/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

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: 05/15/2019
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 58

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/22/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 66

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
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 / No Longer Regulated

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: 12/16/2019
Date Data Arrived at EDR: 12/16/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

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: 11/12/2019
Date Data Arrived at EDR: 11/19/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 70

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/19/2020
Next Scheduled EDR Contact: 06/01/2020
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: 01/10/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Semi-Annually

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: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/09/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: N/A

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: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/13/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Varies

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: 12/16/2019
Date Data Arrived at EDR: 12/19/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/06/2020
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: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

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: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

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: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Every 4 Years

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: 12/31/2017
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 11/21/2019
Number of Days to Update: 370

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Annually

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: 05/01/2019
Date Data Arrived at EDR: 10/23/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 84

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Annually

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: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Annually

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: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/06/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 8
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/06/2020
Next Scheduled EDR Contact: 05/18/2020
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: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/10/2020
Next Scheduled EDR Contact: 04/20/2020
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: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Quarterly

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: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

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: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

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: 10/25/2019
Date Data Arrived at EDR: 10/25/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 82
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
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: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
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: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

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: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/13/2020
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

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 78

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

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: 09/30/2019
Date Data Arrived at EDR: 10/09/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 72

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
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: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Biennially

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: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

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: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 04/13/2020
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

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: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

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: 11/06/2019
Date Data Arrived at EDR: 11/25/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 64

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/25/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 12/03/2019
Date Data Arrived at EDR: 12/03/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 56
Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 12/02/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49
Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/22/2019
Next Scheduled EDR Contact: 03/09/2020
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97
Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/22/2019
Next Scheduled EDR Contact: 03/09/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/11/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 78
Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/23/2020
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: 08/12/2019
Date Data Arrived at EDR: 09/04/2019
Date Made Active in Reports: 12/03/2019
Number of Days to Update: 90
Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 10/06/2019
Date Data Arrived at EDR: 10/08/2019
Date Made Active in Reports: 01/02/2020
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/13/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/19/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 70
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/19/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Quarterly

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

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: 12/18/2019
Date Data Arrived at EDR: 12/20/2019
Date Made Active in Reports: 02/20/2020
Number of Days to Update: 62
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 10/31/2019
Date Data Arrived at EDR: 11/01/2019
Date Made Active in Reports: 12/11/2019
Number of Days to Update: 40

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 09/27/2019
Date Data Arrived at EDR: 10/01/2019
Date Made Active in Reports: 11/07/2019
Number of Days to Update: 37

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Varies

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: 09/06/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/12/2019
Number of Days to Update: 62

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Annually

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/03/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 63

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 59

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 03/29/2020
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: 07/19/2019
Date Data Arrived at EDR: 07/22/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 66

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/22/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/17/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/02/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

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: 11/08/2019
Date Data Arrived at EDR: 11/12/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 57

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/25/2020
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. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 54

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/19/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 65

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/19/2020
Next Scheduled EDR Contact: 06/01/2020
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

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/19/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 65

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/19/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Quarterly

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: 10/07/2019
Date Data Arrived at EDR: 10/08/2019
Date Made Active in Reports: 11/07/2019
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/24/2020
Number of Days to Update: 76
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

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: 11/22/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/11/2019
Date Data Arrived at EDR: 11/12/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 57
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/11/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 71
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

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: 12/11/2019
Date Data Arrived at EDR: 12/12/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/11/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/06/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 71
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Varies

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: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: No Update Planned

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: 12/17/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 12/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/21/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 73

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/22/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/18/2020
Number of Days to Update: 70
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3
Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 11/22/2019
Next Scheduled EDR Contact: 03/09/2020
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System
The Hazardous Waste Tracking System (HWTS) is the Department of Toxic Substances Control?s data repository for hazardous waste Identification (ID) numbers and manifest information. HWTS generates reports on hazardous waste shipments for generators, transporters, and TSDFs.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 11/14/2019
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 85
Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Varies

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 Hist Auto: EDR Exclusive Historical Auto 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 Hist Cleaner: EDR Exclusive Historical 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 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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: 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: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 10/02/2019
Date Data Arrived at EDR: 10/03/2019
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 09/06/2019
Date Data Arrived at EDR: 09/10/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 51

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/03/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 63

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/03/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/27/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 12/11/2019
Number of Days to Update: 43

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 09/06/2019
Date Data Arrived at EDR: 09/12/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 49

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/03/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: 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: 10/08/2019
Date Data Arrived at EDR: 10/10/2019
Date Made Active in Reports: 12/11/2019
Number of Days to Update: 62

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/03/2020
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/13/2019
Date Data Arrived at EDR: 11/14/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 70

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/18/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/17/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/02/2020
Number of Days to Update: 72

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/13/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 10/28/2019
Date Data Arrived at EDR: 11/05/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 64

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: 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: 11/25/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 61

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/13/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List

Cupa facility list

Date of Government Version: 08/16/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 10/18/2019
Number of Days to Update: 59

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/08/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List

Cupa facility list

Date of Government Version: 07/22/2019
Date Data Arrived at EDR: 07/23/2019
Date Made Active in Reports: 09/26/2019
Number of Days to Update: 65

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

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: N/A
Telephone: N/A
Last EDR Contact: 12/11/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/15/2020
Date Data Arrived at EDR: 01/16/2020
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 22

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 10/16/2019
Date Made Active in Reports: 12/12/2019
Number of Days to Update: 57

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/14/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/13/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 71
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/14/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/13/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: 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: 11/18/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 01/27/2020
Number of Days to Update: 68
Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29
Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 44

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/13/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 11/20/2019
Date Data Arrived at EDR: 12/02/2019
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 67

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 11/06/2019
Date Data Arrived at EDR: 11/07/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 62

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/30/2019
Date Data Arrived at EDR: 10/30/2019
Date Made Active in Reports: 12/11/2019
Number of Days to Update: 42

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/02/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 64

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/02/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 64

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 11/05/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 64

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/03/2019
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 66

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/17/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 12/13/2019
Number of Days to Update: 52
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 02/10/2020
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/17/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 73
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 02/10/2020
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/14/2019
Date Data Arrived at EDR: 12/23/2019
Date Made Active in Reports: 02/20/2020
Number of Days to Update: 59
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/23/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Quarterly

ML SACRAMENTO: 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: 11/14/2019
Date Data Arrived at EDR: 12/23/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 60
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/23/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 11/14/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 69
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: 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: 11/26/2019
Date Data Arrived at EDR: 11/27/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 69

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: 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: 12/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 62

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/16/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 12/13/2019
Number of Days to Update: 52

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

SAN DIEGO CO SAM: 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: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: 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: 01/31/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 08/01/2019
Date Data Arrived at EDR: 08/02/2019
Date Made Active in Reports: 10/08/2019
Number of Days to Update: 67

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/11/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 12/12/2019
Date Data Arrived at EDR: 12/13/2019
Date Made Active in Reports: 02/20/2020
Number of Days to Update: 69

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 09/03/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 11/05/2019
Number of Days to Update: 57

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 02/20/2020
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/05/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: 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: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/19/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 65

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

HIST LUST SANTA CLARA: 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

LUST SANTA CLARA: 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: 02/21/2020
Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 10/30/2019
Date Data Arrived at EDR: 11/01/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 68

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/13/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/14/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/09/2019
Date Data Arrived at EDR: 12/11/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 72

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/18/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 29

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 01/07/2020
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 11/07/2019
Number of Days to Update: 36

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/17/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2019
Date Data Arrived at EDR: 11/07/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 62

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/13/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/02/2019
Date Data Arrived at EDR: 12/03/2019
Date Made Active in Reports: 02/07/2020
Number of Days to Update: 66

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/23/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/17/2019
Date Data Arrived at EDR: 10/22/2019
Date Made Active in Reports: 01/02/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 11/25/2019
Date Data Arrived at EDR: 11/27/2019
Date Made Active in Reports: 02/04/2020
Number of Days to Update: 69

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/17/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: 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: 05/29/2019
Date Data Arrived at EDR: 07/29/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 63

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

LF VENTURA: 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: 12/19/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: No Update Planned

LUST VENTURA: 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: 02/07/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: No Update Planned

MED WASTE VENTURA: 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: 09/26/2019
Date Data Arrived at EDR: 10/23/2019
Date Made Active in Reports: 12/13/2019
Number of Days to Update: 51

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/26/2019
Date Data Arrived at EDR: 12/10/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 73

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/10/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 09/25/2019
Date Data Arrived at EDR: 10/01/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 30

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/04/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 63

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/25/2020
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: 05/14/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/03/2020
Number of Days to Update: 60

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 01/30/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/06/2020
Next Scheduled EDR Contact: 04/20/2020
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: 01/01/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 51

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/31/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/14/2020
Next Scheduled EDR Contact: 04/07/2020
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/18/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/18/2019
Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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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 was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

PIONEER TRAIL
PIONEER TRAIL / US HIGHWAY 50
SOUTH LAKE TAHOE, CA 96150

TARGET PROPERTY COORDINATES

Latitude (North):	38.859594 - 38° 51' 34.54''
Longitude (West):	120.012088 - 120° 0' 43.52''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	759271.0
UTM Y (Meters):	4305232.0
Elevation:	6323 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640848 ECHO LAKE, CA
Version Date:	2012
Northeast Map:	5641806 SOUTH LAKE TAHOE, CA
Version Date:	2012
Southeast Map:	5641808 FREEL PEAK, CA
Version Date:	2012
Northwest Map:	5640850 EMERALD BAY, CA
Version Date:	2012

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 principle 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).

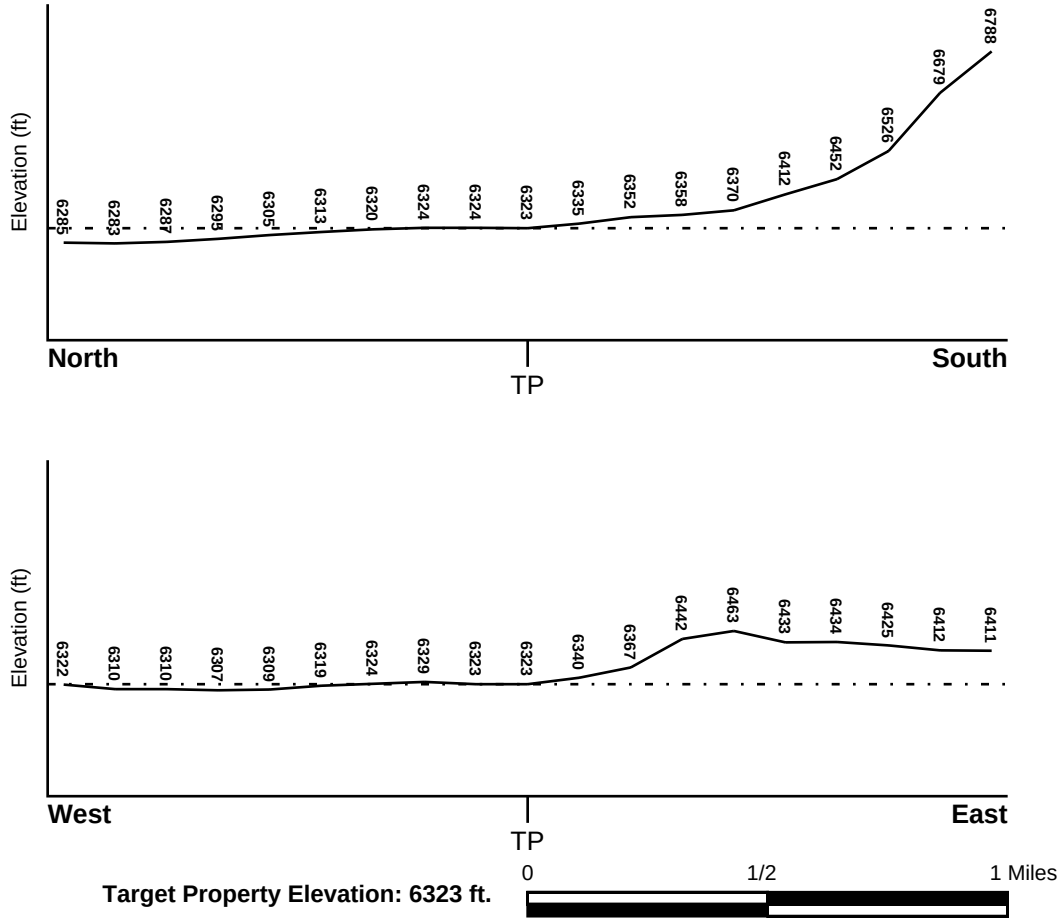
TOPOGRAPHIC INFORMATION

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 WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 6323 ft.

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

Flood Plain Panel at Target Property	FEMA Source Type
06017C0632E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06017C0675E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ECHO LAKE	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
Status:	Not found

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		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

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:	Mesozoic
System:	Cretaceous
Series:	Upper Cretaceous granitic rocks
Code:	Kg2 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

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).

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. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	MARLA
Soil Surface Texture:	loamy coarse sand
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:	Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	11 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 5.10
2	11 inches	44 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 5.60
3	44 inches	60 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 0.20 Min: 0.06	Max: 7.30 Min: 6.10
4	60 inches	66 inches	stratified	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: coarse sandy loam
gravelly - loamy coarse sand
stony - coarse sandy loam
peat
stony - sandy loam
sandy loam
stony - loamy coarse sand
gravelly - coarse sandy loam
coarse sand

Surficial Soil Types: coarse sandy loam
gravelly - loamy coarse sand
stony - coarse sandy loam
peat

stony - sandy loam
sandy loam
stony - loamy coarse sand
gravelly - coarse sandy loam
coarse sand

Shallow Soil Types: coarse sandy loam
gravelly - coarse sandy loam
very gravelly - coarse sand
stratified
loam

Deeper Soil Types: loamy coarse sand
gravelly - loamy sand
extremely gravelly - loamy coarse sand
gravelly - loamy coarse sand
gravelly - coarse sandy loam
coarse sand

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
A6	USGS40000195709	1/2 - 1 Mile SW
A7	USGS40000195710	1/2 - 1 Mile SW
B8	USGS40000195712	1/2 - 1 Mile NW
14	USGS40000195711	1/2 - 1 Mile West
15	USGS40000195708	1/2 - 1 Mile SW
16	USGS40000195707	1/2 - 1 Mile SW
D19	USGS40000195715	1/2 - 1 Mile North
E20	USGS40000195714	1/2 - 1 Mile NW
E21	USGS40000195713	1/2 - 1 Mile NW
D22	USGS40000195719	1/2 - 1 Mile North
23	USGS40000195721	1/2 - 1 Mile North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

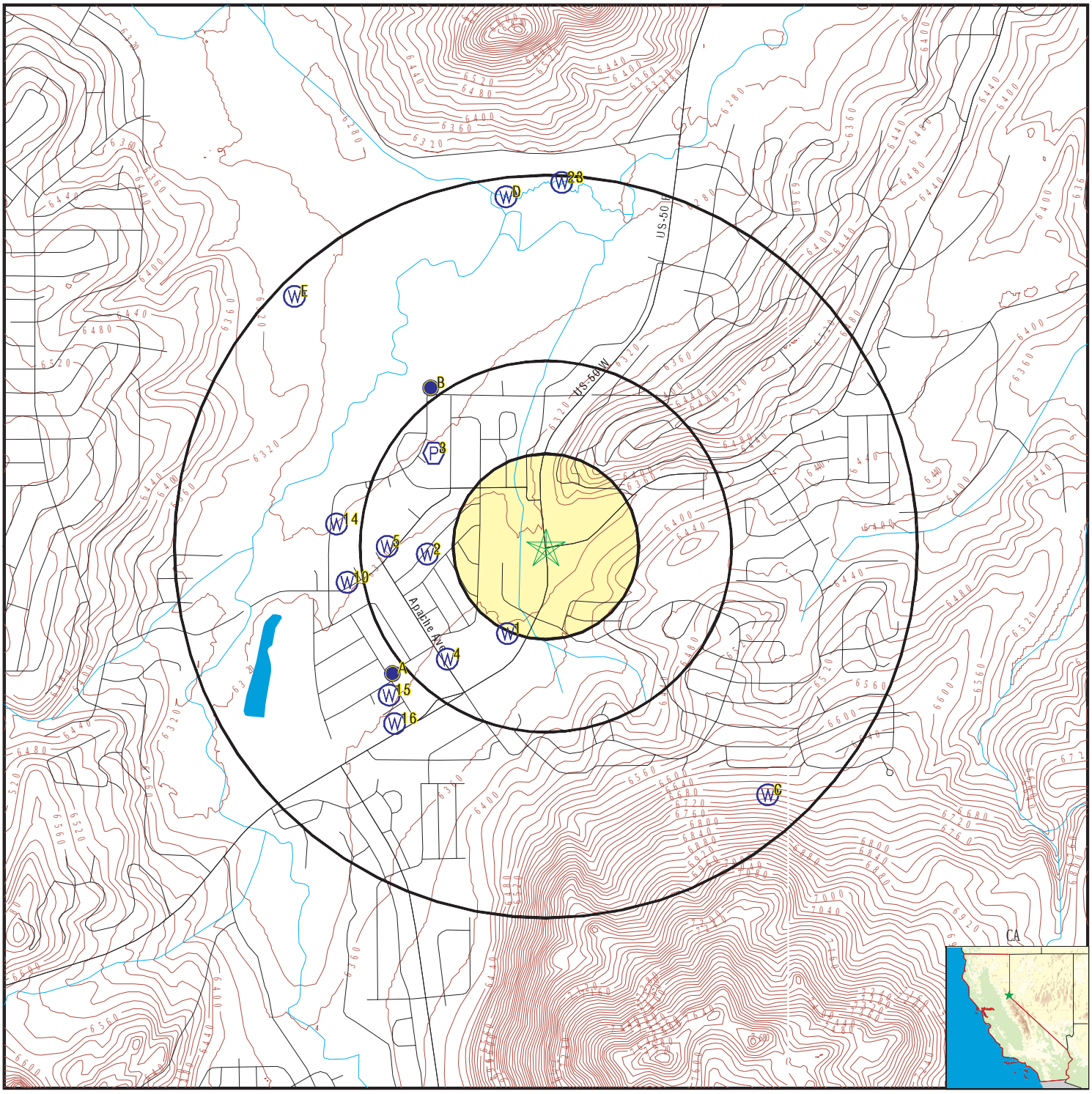
MAP ID	WELL ID	LOCATION FROM TP
3	CA0910010	1/4 - 1/2 Mile NW

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CADWR8000039394	1/4 - 1/2 Mile SSW
2	CADWR8000039401	1/4 - 1/2 Mile West
4	CADWR8000039392	1/4 - 1/2 Mile SW
5	CADWR8000039405	1/4 - 1/2 Mile West
B9	CADWR8000039419	1/2 - 1 Mile NW
10	CADWR8000039398	1/2 - 1 Mile West
A11	CADWR8000039389	1/2 - 1 Mile SW
A12	CADWR8000039390	1/2 - 1 Mile SW
A13	CADWR8000039388	1/2 - 1 Mile SW
C17	10924	1/2 - 1 Mile SE
C18	10925	1/2 - 1 Mile SE

PHYSICAL SETTING SOURCE MAP - 5990420.2s



- 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
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Pioneer Trail	CLIENT:	Nichols Consulting Eng.,Chtd.
ADDRESS:	Pioneer Trail / US Highway 50 South Lake Tahoe CA 96150	CONTACT:	Darcy Hinkley
		INQUIRY #:	5990420.2s
LAT/LONG:	38.859594 / 120.012088	DATE:	February 28, 2020 2:27 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
SSW
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR8000039394**

State Well #:	12N18E29L001M	Station ID:	15199
Well Name:	Not Reported	Well Use:	Residential
Well Type:	Unknown	Well Depth:	94
Basin Name:	Tahoe South	Well Completion Rpt #:	1069

2
West
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR8000039401**

State Well #:	Not Reported	Station ID:	47518
Well Name:	Sioux OW	Well Use:	Observation
Well Type:	Single Well	Well Depth:	198
Basin Name:	Tahoe South	Well Completion Rpt #:	770482

3
NW
1/4 - 1/2 Mile
Lower

FRDS PWS **CA0910010**

Epa region:	09	State:	CA
Pwsid:	CA0910010		
Pwsname:	PLACERVILLE, CITY OF - SIERRA GOLF & CC		
Cityserved:	Not Reported	Stateserved:	CA
Zipserved:	Not Reported	Fipscounty:	06017
Status:	Active	Retpopsrvd:	320
Pwssvcconn:	137	Psource longname:	Purch_surface_water
Pwstype:	CWS	Owner:	Local_Govt
Contact:	STONG, NATHAN	Contactorgname:	STONG, NATHAN
Contactphone:	530-642-5526	Contactaddress1:	Development Services Dept.
Contactaddress2:	3101 Center Street	Contactcity:	PLACERVILLE, CA 95667
Contactstate:	CA	Contactzip:	95667
Pwsactivitycode:	A		

Pwsid:	CA0910010	Facid:	1
Facname:	SIERRA GOLF & CC WPT - TREATED		
Factype:	Treatment_plant	Facactivitycode:	I
Trtobjective:	particulate removal	Trtprocess:	filtration, rapid sand
Factypecode:	TP		

PWS ID:	CA0910010		
PWS name:	PLACERVILLE, CITY OF - SIERRA GOLF & CC		
Address:	Not Reported	Care of:	Not Reported
City:	PLACERVILLE	State:	CA
Zip:	95667		
Owner:	PLACERVILLE, CITY OF - SIERRA GOLF & CC		
Source code:	Surface water	Population:	300

PWS ID:	CA0910010	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported

PWS zip:	Not Reported	County:	Not Reported
Source:	Surface water	Treatment Objective:	PARTICULATE REMOVAL
Process:	FILTRATION, RAPID SAND	Population:	300
PWS ID:	CA0910010	Activity status:	Active
Date system activated:	7706	Date system deactivated:	Not Reported
Retail population:	00000300		
System name:	PLACERVILLE, CITY OF - SIERRA GOLF & CC		
System address:	Not Reported	System address:	487 MAIN STREET
System city:	PLACERVILLE	System state:	CA
System zip:	95667		
County FIPS:	017	City served:	SIERRA GOLF AND
Population served:	101 - 500 Persons	Treatment:	Treated
Latitude:	385148	Longitude:	1200100
Violation id:	1	Orig code:	S
State:	CA	Violation Year:	2013
Contamination code:	2456	Contamination Name:	Total Haloacetic Acids (HAA5)
Violation code:	02	Violation name:	MCL, Average
Rule code:	210	Rule name:	St1 DBP
Violation measur:	0.061	Unit of measure:	MG/L
State mcl:	0.06	Cmp bdt:	04/01/2013
Cmp edt:	06/30/2013		
Violation ID:	1	Orig Code:	S
Enforcemnt FY:	2013	Enforcement Action:	07/18/2013
Enforcement Detail:	St AO (w/o penalty) issued		
Enforcement Category:	Formal		

4
SW
1/4 - 1/2 Mile
Higher

CA WELLS **CADWR8000039392**

State Well #:	Not Reported	Station ID:	47499
Well Name:	Apache OW	Well Use:	Observation
Well Type:	Single Well	Well Depth:	134
Basin Name:	Tahoe South	Well Completion Rpt #:	Not Reported

5
West
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000039405**

State Well #:	Not Reported	Station ID:	47507
Well Name:	ESB-3	Well Use:	Observation
Well Type:	Single Well	Well Depth:	211
Basin Name:	Tahoe South	Well Completion Rpt #:	572416

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A6
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000195709**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 29CBD 1 Arrowhead 2		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19751208	Well Depth:	268
Well Depth Units:	ft	Well Hole Depth:	272
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	3	Level reading date:	1996-07-16
Feet below surface:	Not Reported	Feet to sea level:	Not Reported
Note:	The site was being pumped.		

Level reading date:	1996-01-31	Feet below surface:	Not Reported
Feet to sea level:	Not Reported	Note:	The site was being pumped.

Level reading date:	1995-06-23	Feet below surface:	Not Reported
Feet to sea level:	Not Reported	Note:	The site was being pumped.

A7
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000195710**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 29CBD 2 Arrowhead 1		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

B8
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000195712**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 20CDCC1 012N018E20P001M		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19750101	Well Depth:	325
Well Depth Units:	ft	Well Hole Depth:	330

Well Hole Depth Units: ft

B9
NW
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000039419**

State Well #:	Not Reported	Station ID:	47503
Well Name:	Country Club Well	Well Use:	Observation
Well Type:	Single Well	Well Depth:	197
Basin Name:	Tahoe South	Well Completion Rpt #:	Not Reported

10
West
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000039398**

State Well #:	Not Reported	Station ID:	47506
Well Name:	ESB-2	Well Use:	Observation
Well Type:	Single Well	Well Depth:	233
Basin Name:	Tahoe South	Well Completion Rpt #:	572415

A11
SW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000039389**

State Well #:	Not Reported	Station ID:	47512
Well Name:	IW-1	Well Use:	Observation
Well Type:	Single Well	Well Depth:	151
Basin Name:	Tahoe South	Well Completion Rpt #:	Not Reported

A12
SW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000039390**

State Well #:	Not Reported	Station ID:	47520
Well Name:	SW-1	Well Use:	Observation
Well Type:	Single Well	Well Depth:	40
Basin Name:	Tahoe South	Well Completion Rpt #:	Not Reported

A13
SW
1/2 - 1 Mile
Higher

CA WELLS **CADWR8000039388**

State Well #:	Not Reported	Station ID:	47504
Well Name:	DW-1	Well Use:	Observation
Well Type:	Single Well	Well Depth:	268
Basin Name:	Tahoe South	Well Completion Rpt #:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

14
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000195711**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 29BCCC1 012 012N018E29E001M		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	330
Well Depth Units:	ft	Well Hole Depth:	600
Well Hole Depth Units:	ft		

15
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000195708**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 29CCAB1 TP Plant		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

16
SW
1/2 - 1 Mile
Higher

FED USGS **USGS40000195707**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 29CCAD1 El Dorado Co DOT		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	8
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-30
Feet below surface:	Not Reported	Feet to sea level:	Not Reported
Note:	The site was dry (no water level recorded).		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C17
SE
1/2 - 1 Mile
Higher

CA WELLS **10924**

Seq:	10924	Prim sta c:	12N/18E-29N01 M
Frds no:	0910002003	County:	09
District:	09	User id:	TEN
System no:	0910002	Water type:	G
Source nam:	ARROWHEAD WELL 01	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	385100.0	Longitude:	1200000.0
Precision:	8	Status:	AR
Comment 1:	FORMERLY TAHOE PARADISE PLANT 01 WELL 01		
Comment 2:	Not Reported	Comment 3:	Not Reported
Comment 4:	Not Reported	Comment 5:	Not Reported
Comment 6:	Not Reported	Comment 7:	Not Reported
System no:	0910002	System nam:	South Tahoe Pud - Main
Hqname:	Not Reported	Address:	1275 Meadow Crest Drive
City:	South Lake Tahoe	State:	CA
Zip:	96151	Zip ext:	Not Reported
Pop serv:	46900	Connection:	12630
Area serve:	ECHO VIEW ESTATES		

C18
SE
1/2 - 1 Mile
Higher

CA WELLS **10925**

Seq:	10925	Prim sta c:	12N/18E-29N02 M
Frds no:	0910002030	County:	09
District:	09	User id:	TEN
System no:	0910002	Water type:	G
Source nam:	PLANT WELL 02 - WELL 02 - DESTROYED	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	385100.0	Longitude:	1200000.0
Precision:	8	Status:	DS
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	0910002	System nam:	South Tahoe Pud - Main
Hqname:	Not Reported	Address:	1275 Meadow Crest Drive
City:	South Lake Tahoe	State:	CA
Zip:	96151	Zip ext:	Not Reported
Pop serv:	46900	Connection:	12630
Area serve:	ECHO VIEW ESTATES		

D19
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000195715**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 20BDDD1 Angora Creek Well 4		
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported

Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19940801	Well Depth:	3
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-10
Feet below surface:	1.33	Feet to sea level:	Not Reported
Note:	Not Reported		

E20
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000195714**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 19DADC2	Washoe Meadow State Park 2	
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	6
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-09
Feet below surface:	2.89	Feet to sea level:	Not Reported
Note:	Not Reported		

E21
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000195713**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 19DADC1	Washoe Meadow State Park 1	
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	5
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-09
Feet below surface:	2.89	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D22
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000195719**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 20BDDB1	Angora Creek Well 2	
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19940801	Well Depth:	5
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-10
Feet below surface:	1.67	Feet to sea level:	Not Reported
Note:	Not Reported		

23
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000195721**

Organization ID:	USGS-NV	Organization Name:	USGS Nevada Water Science Center
Monitor Location:	090 N12 E18 20ACCA1	Angora Creek Well 15	
Type:	Well	Description:	Not Reported
HUC:	16050101	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported	Aquifer:	Not Reported
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19940801	Well Depth:	4
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1996-10-10
Feet below surface:	2.22	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
96150	685	344

Federal EPA Radon Zone for EL DORADO County: 2

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 EL DORADO COUNTY, CA

Number of sites tested: 27

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.844 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	3.400 pCi/L	50%	50%	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.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

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.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

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 Service (NRCS)
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 Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, 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: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
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.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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

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APPENDIX B

EDR HISTORICAL TOPO MAP REPORT

Pioneer Trail

Pioneer Trail / US Highway 50

South Lake Tahoe, CA 96150

Inquiry Number: 5990420.4

February 28, 2020

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/28/20

Site Name:

Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
EDR Inquiry # 5990420.4

Client Name:

Nichols Consulting Eng.,Chtd.
8795 Folsom Boulevard
Sacramento, CA 95826
Contact: Darcy Hinkley

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Nichols Consulting Eng.,Chtd. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 501.30.25
Project: Pioneer Trial

Coordinates:

Latitude:	38.859594 38° 51' 35" North
Longitude:	-120.012088 -120° 0' 44" West
UTM Zone:	Zone 10 North
UTM X Meters:	759264.35
UTM Y Meters:	4305439.34
Elevation:	6322.83' above sea level

Maps Provided:

2012
1994
1992
1980
1969
1955
1896
1893, 1895
1891
1889

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Emerald Bay
2012
7.5-minute, 24000



Echo Lake
2012
7.5-minute, 24000



South Lake Tahoe
2012
7.5-minute, 24000



Freel Peak
2012
7.5-minute, 24000

1994 Source Sheets



South Lake Tahoe
1994
7.5-minute, 24000
Aerial Photo Revised 1992



Freel Peak
1994
7.5-minute, 24000
Aerial Photo Revised 1992



Emerald Bay
1994
7.5-minute, 24000
Aerial Photo Revised 1992



Echo Lake
1994
7.5-minute, 24000
Aerial Photo Revised 1992

1992 Source Sheets



Freel Peak
1992
7.5-minute, 24000
Aerial Photo Revised 1992

1980 Source Sheets



Freel Peak
1980
7.5-minute, 24000
Aerial Photo Revised 1969



South Lake Tahoe
1980
7.5-minute, 24000
Aerial Photo Revised 1974

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1969 Source Sheets



South Lake Tahoe
1969
7.5-minute, 24000
Aerial Photo Revised 1969



Freel Peak
1969
7.5-minute, 24000
Aerial Photo Revised 1969

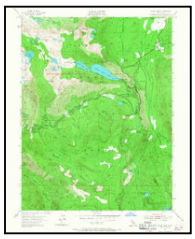


Echo Lake
1969
7.5-minute, 24000
Aerial Photo Revised 1969



Emerald Bay
1969
7.5-minute, 24000
Aerial Photo Revised 1969

1955 Source Sheets



Echo Lake
1955
7.5-minute, 24000
Aerial Photo Revised 1953



Freel Peak
1955
7.5-minute, 24000
Aerial Photo Revised 1953



Emerald Bay
1955
7.5-minute, 24000
Aerial Photo Revised 1953



Bijou
1955
7.5-minute, 24000
Aerial Photo Revised 1953

1896 Source Sheets



Pyramid Peak
1896
30-minute, 125000

1893, 1895 Source Sheets



Markleeville
1893
30-minute, 125000



Pyramid Peak
1895
30-minute, 125000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1891 Source Sheets



Markleeville
1891
30-minute, 125000



Pyramid Peak
1891
30-minute, 125000

1889 Source Sheets



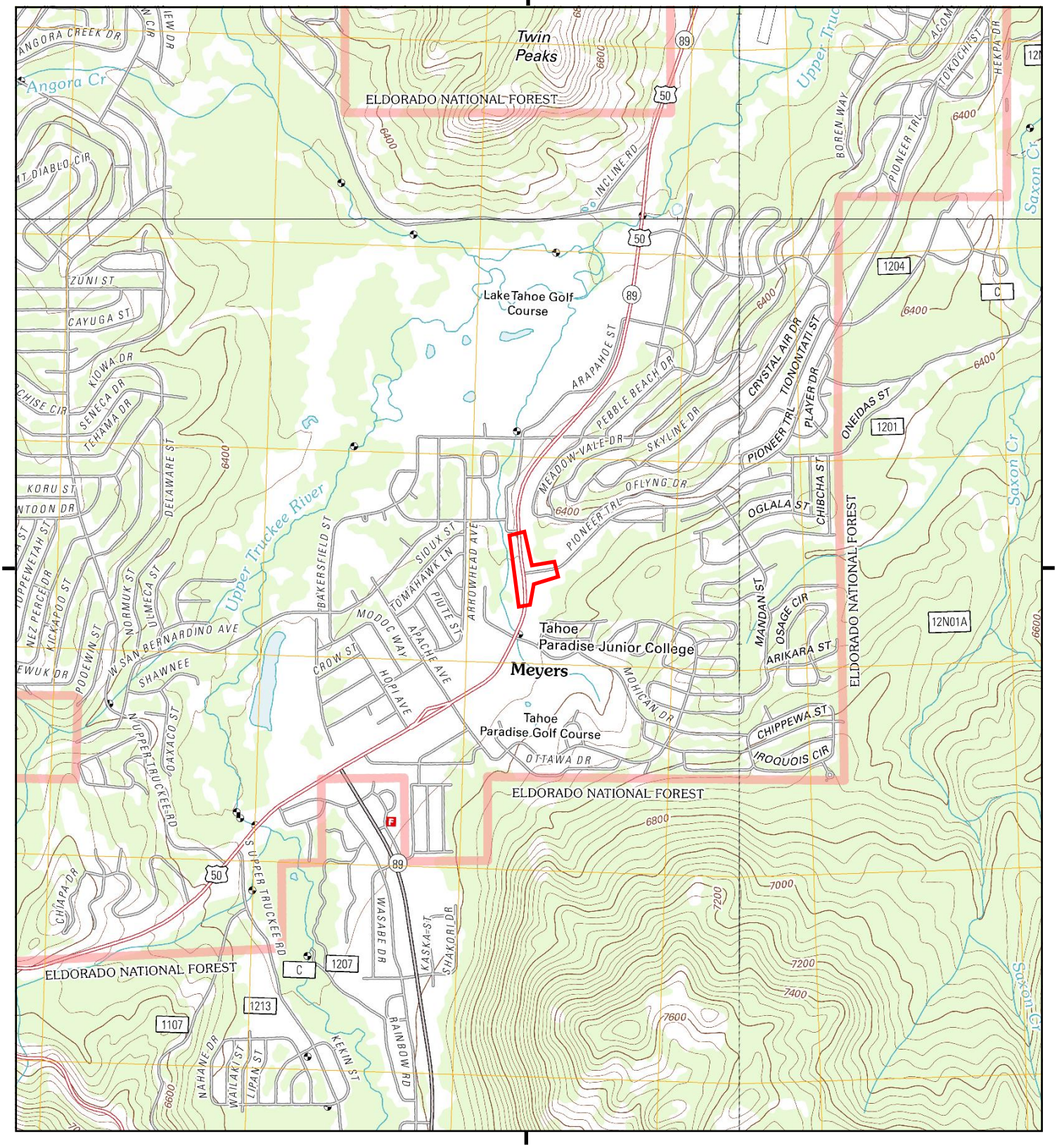
Pyramid Peak
1889
30-minute, 125000



Markleeville
1889
30-minute, 125000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

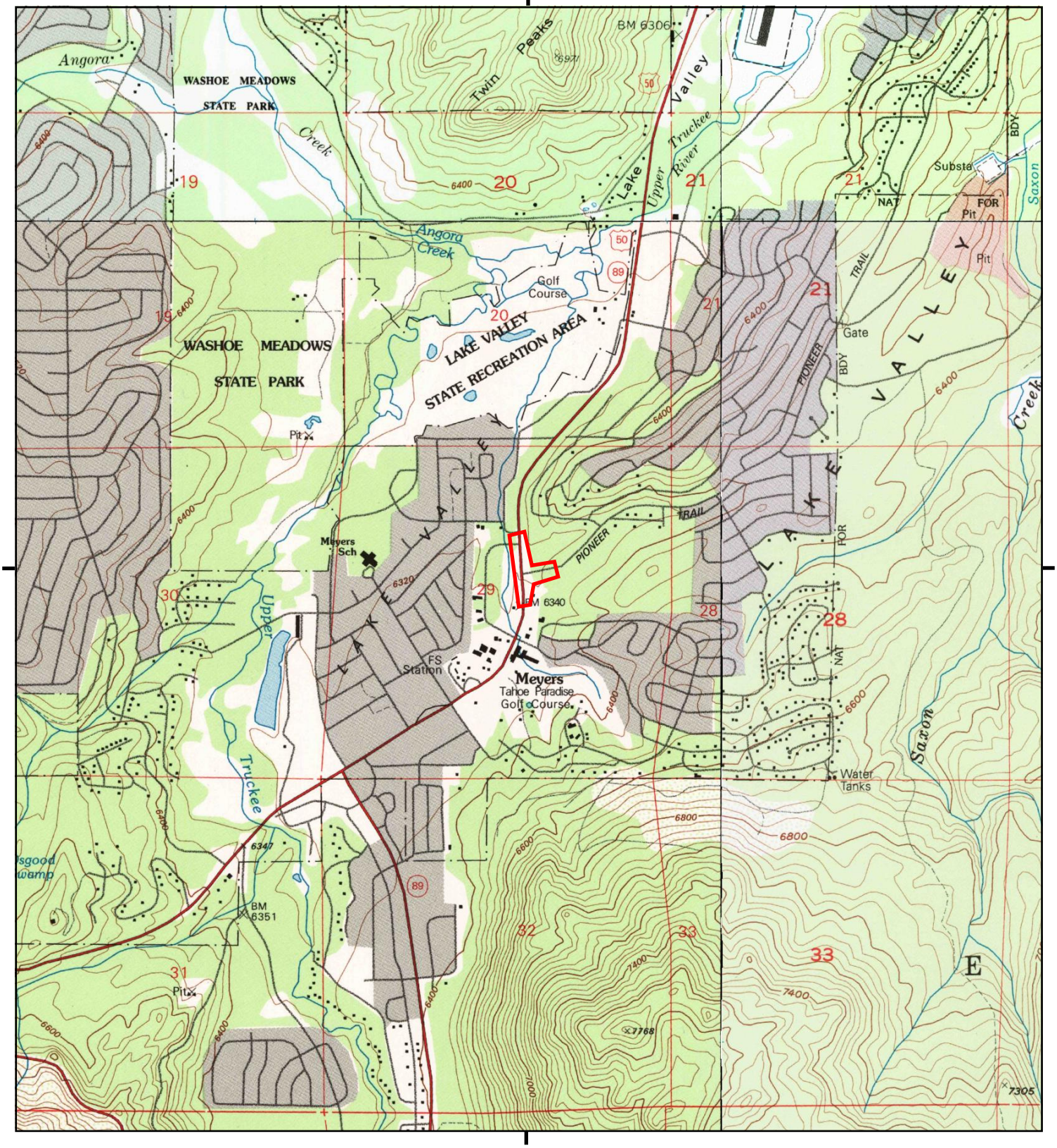
TP, Echo Lake, 2012, 7.5-minute
NE, South Lake Tahoe, 2012, 7.5-minute
SE, Freel Peak, 2012, 7.5-minute
NW, Emerald Bay, 2012, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N

Historical Topo Map

1994



This report includes information from the following map sheet(s).

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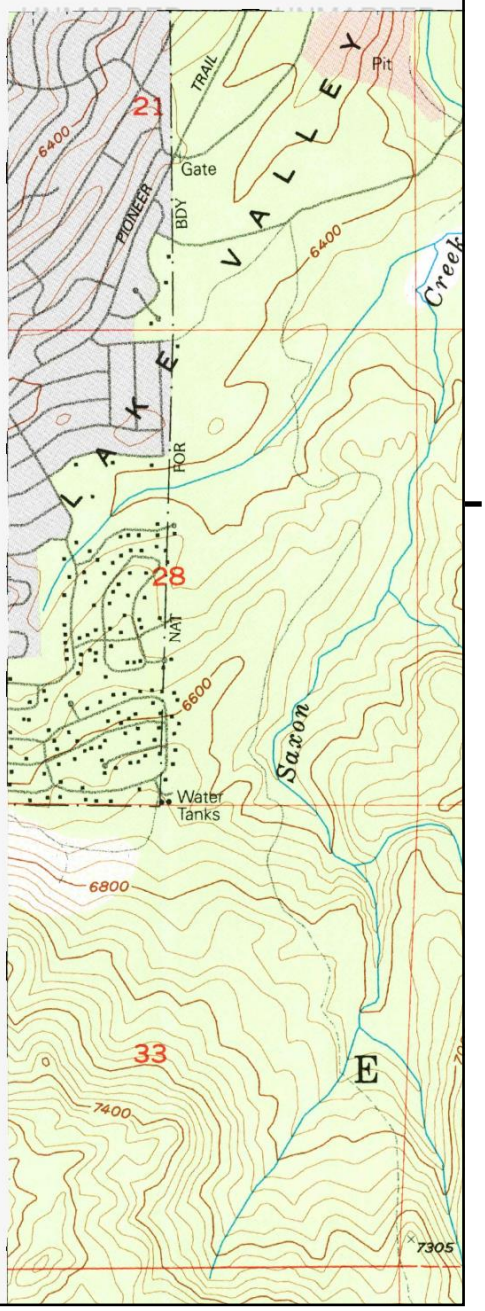
NW N NE
W E
SW S SE

TP, Echo Lake, 1994, 7.5-minute
NE, South Lake Tahoe, 1994, 7.5-minute
SE, Freel Peak, 1994, 7.5-minute
NW, Emerald Bay, 1994, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N

UNMAPPED



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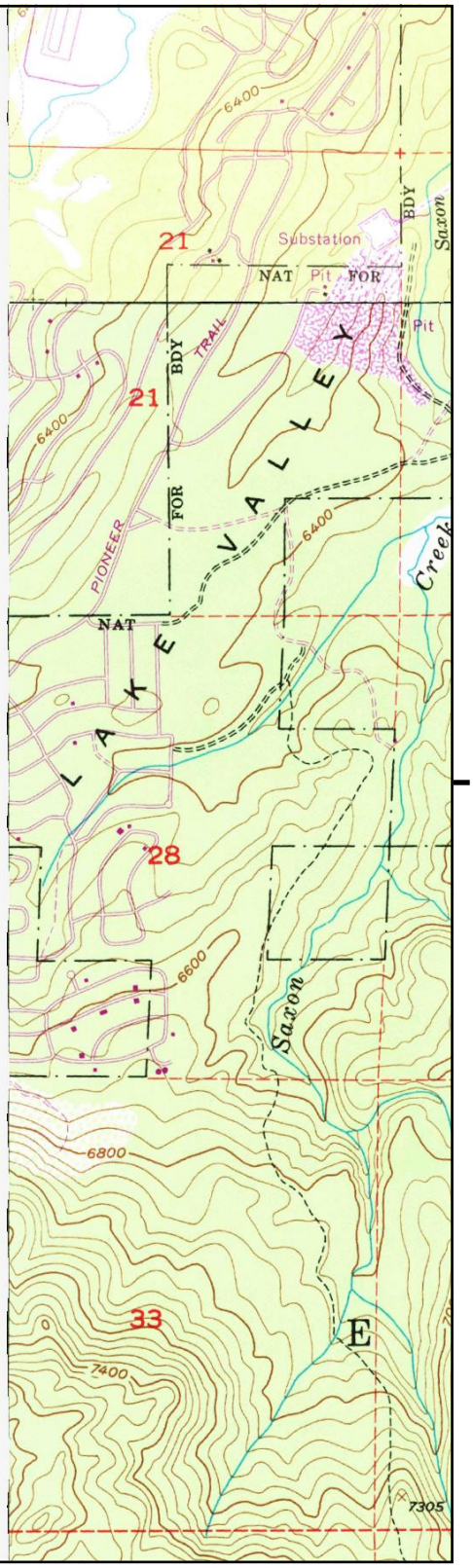
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

SE, Freel Peak, 1992, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



UNMAPPED

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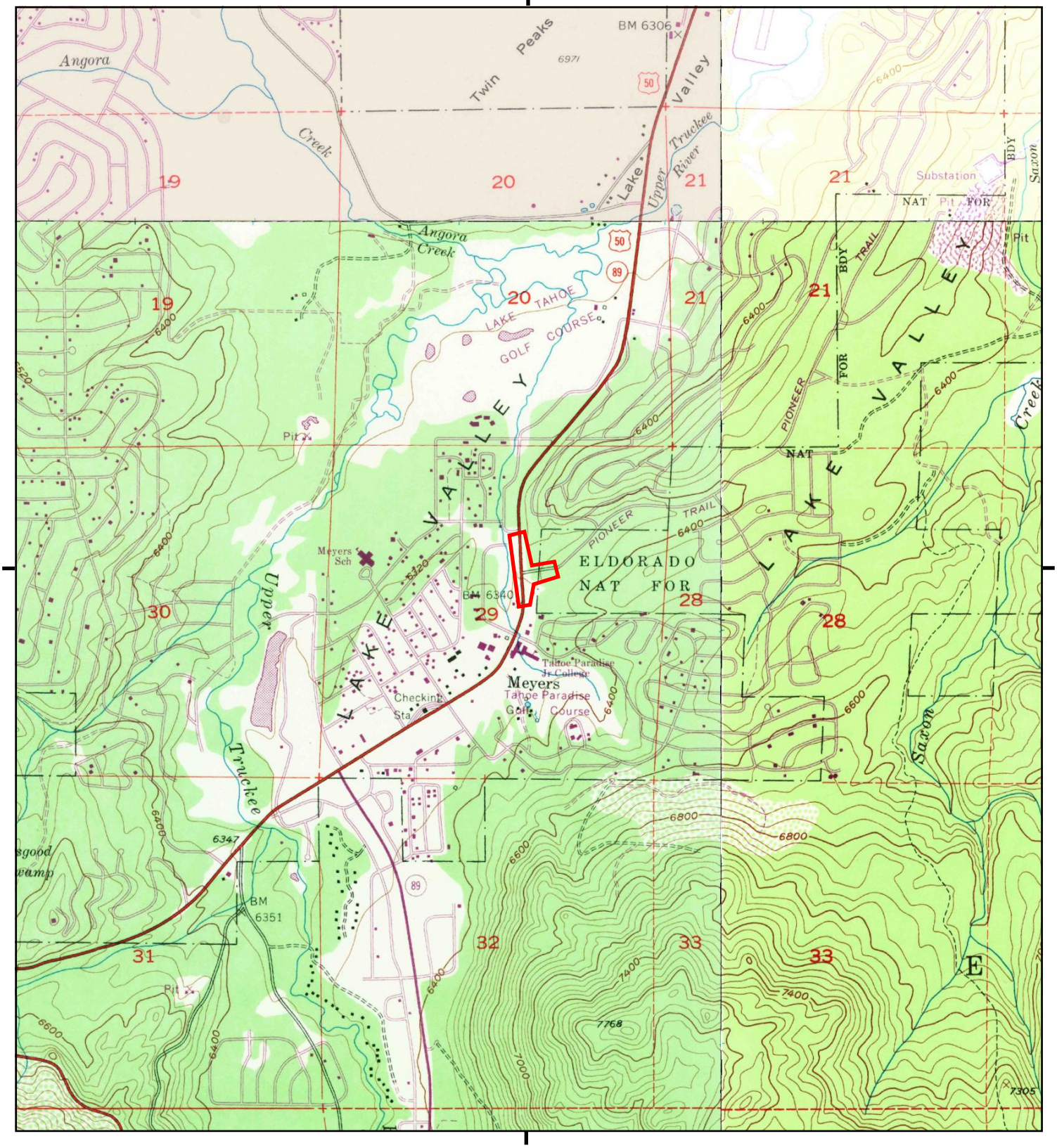
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

NE, South Lake Tahoe, 1980, 7.5-minute
SE, Freel Peak, 1980, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



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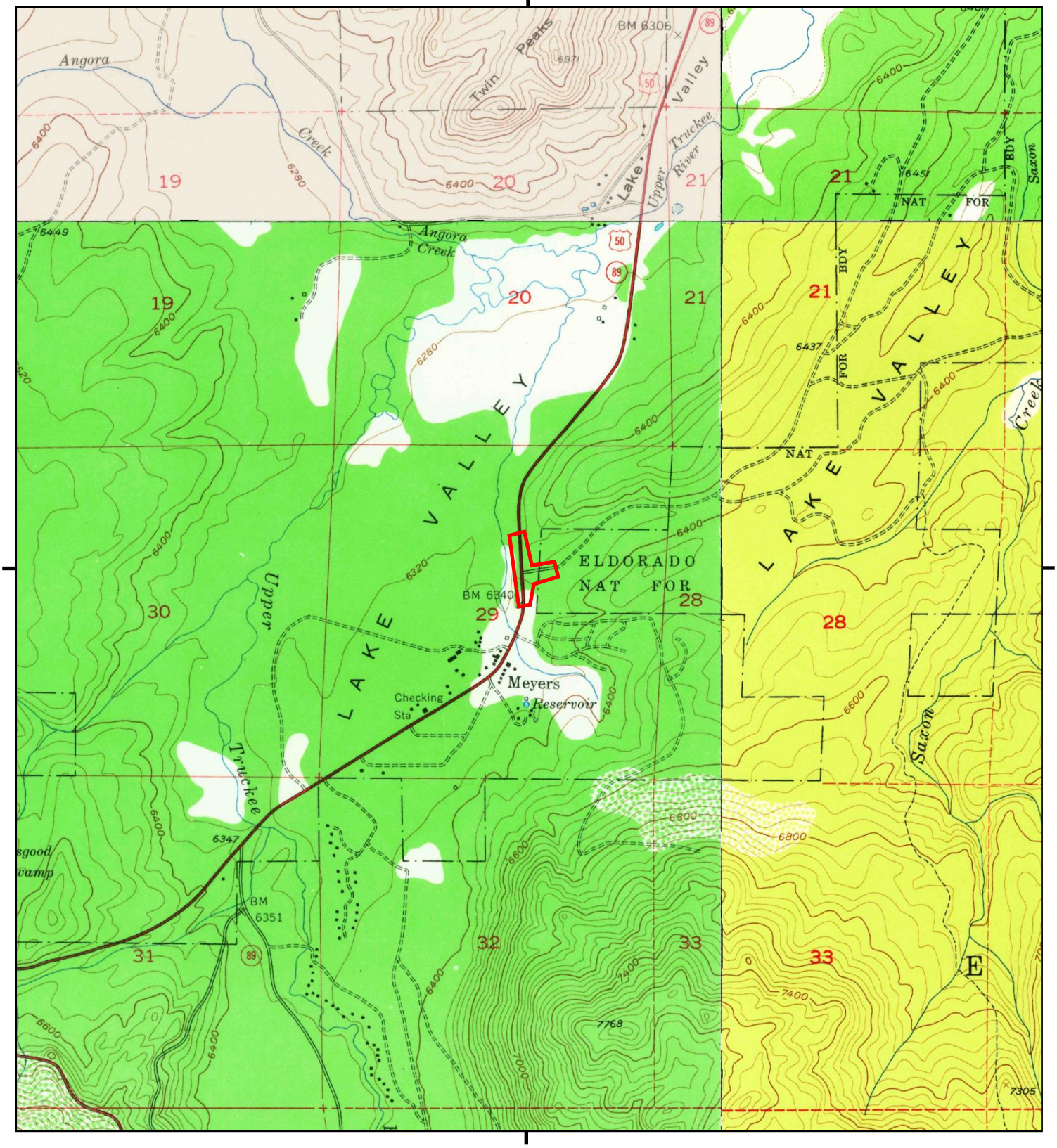
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Echo Lake, 1969, 7.5-minute
NE, South Lake Tahoe, 1969, 7.5-minute
SE, Freel Peak, 1969, 7.5-minute
NW, Emerald Bay, 1969, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



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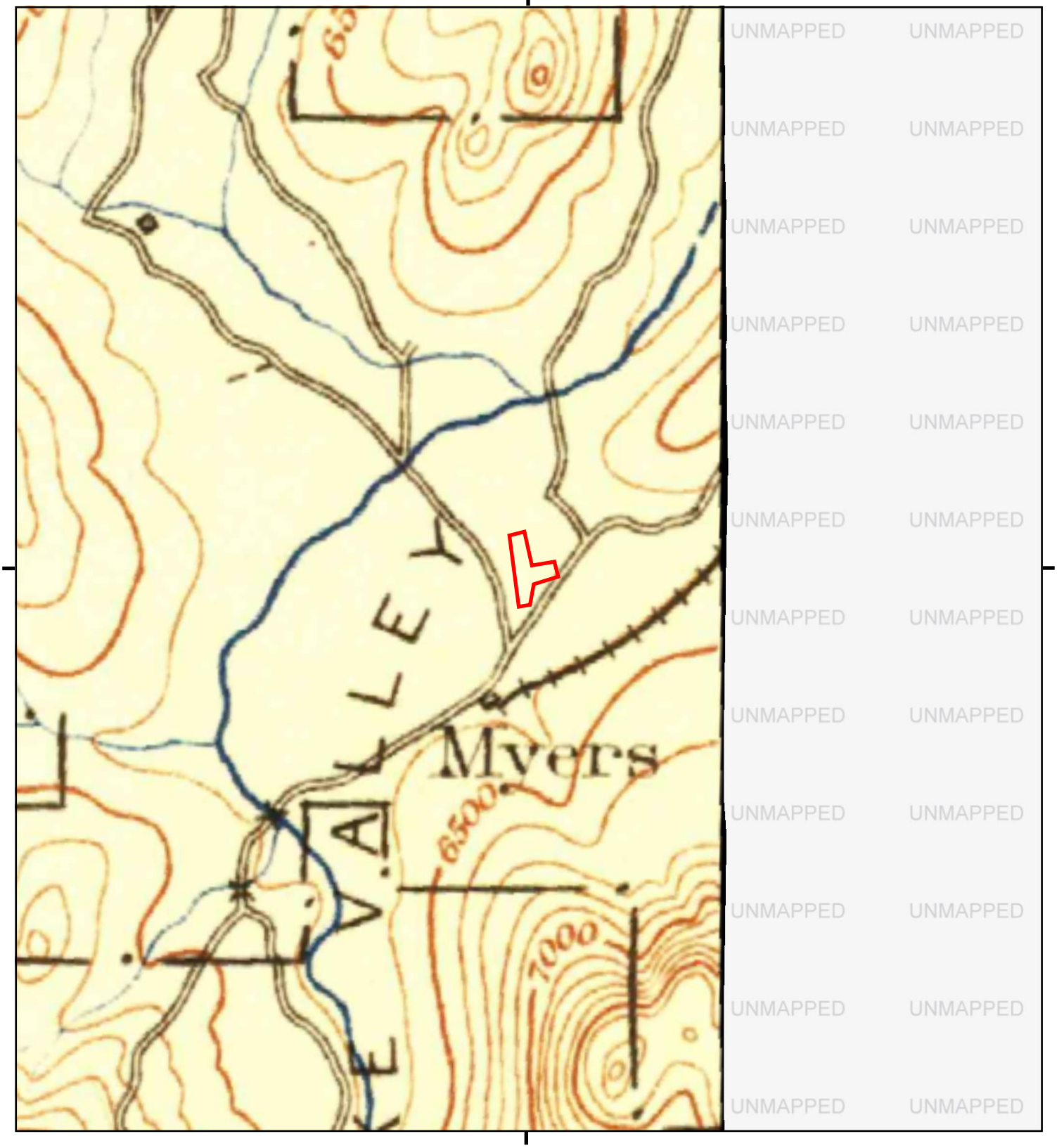
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Echo Lake, 1955, 7.5-minute
NE, Bijou, 1955, 7.5-minute
SE, Freel Peak, 1955, 7.5-minute
NW, Emerald Bay, 1955, 7.5-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



This report includes information from the following map sheet(s).

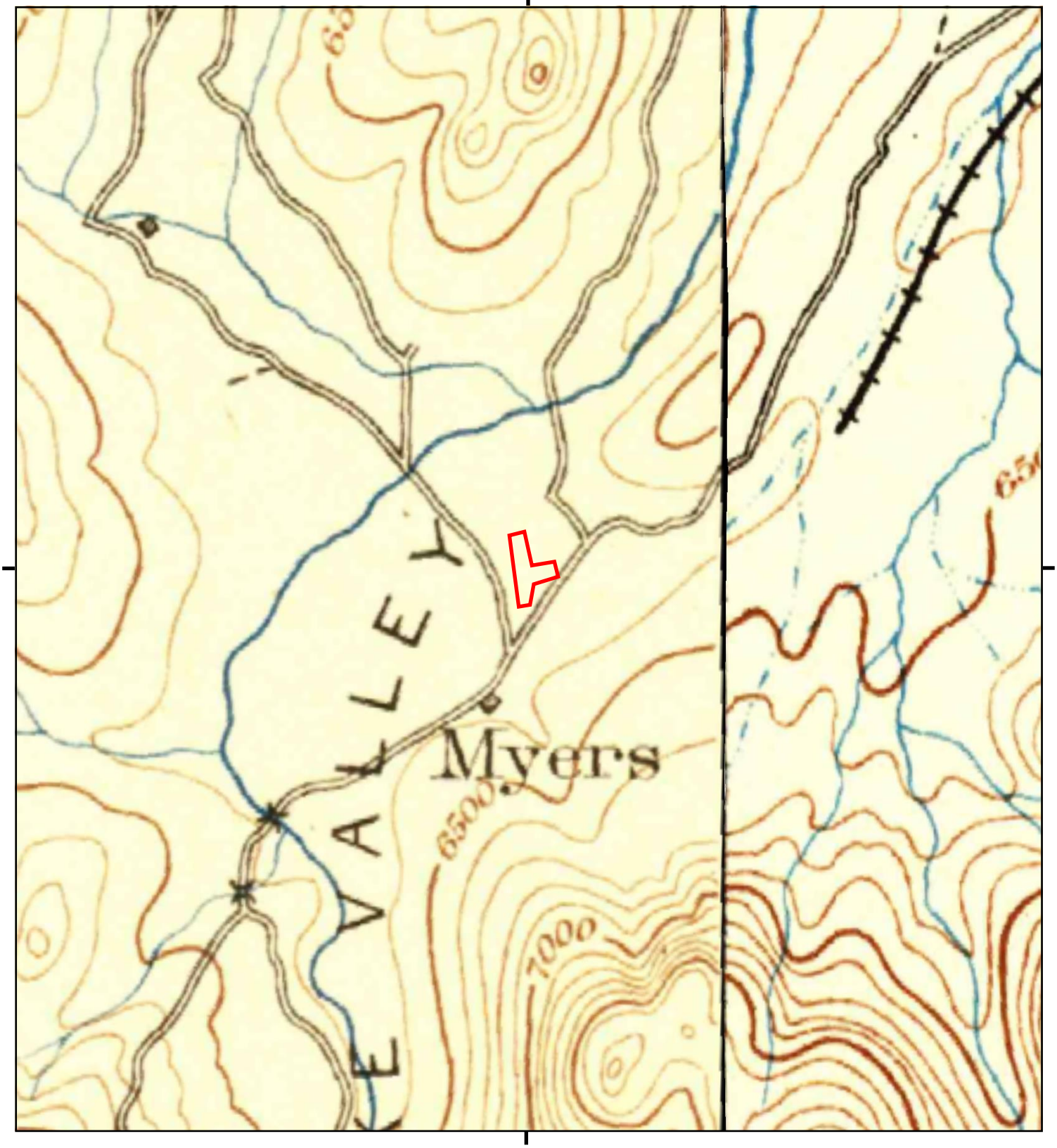
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pyramid Peak, 1896, 30-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



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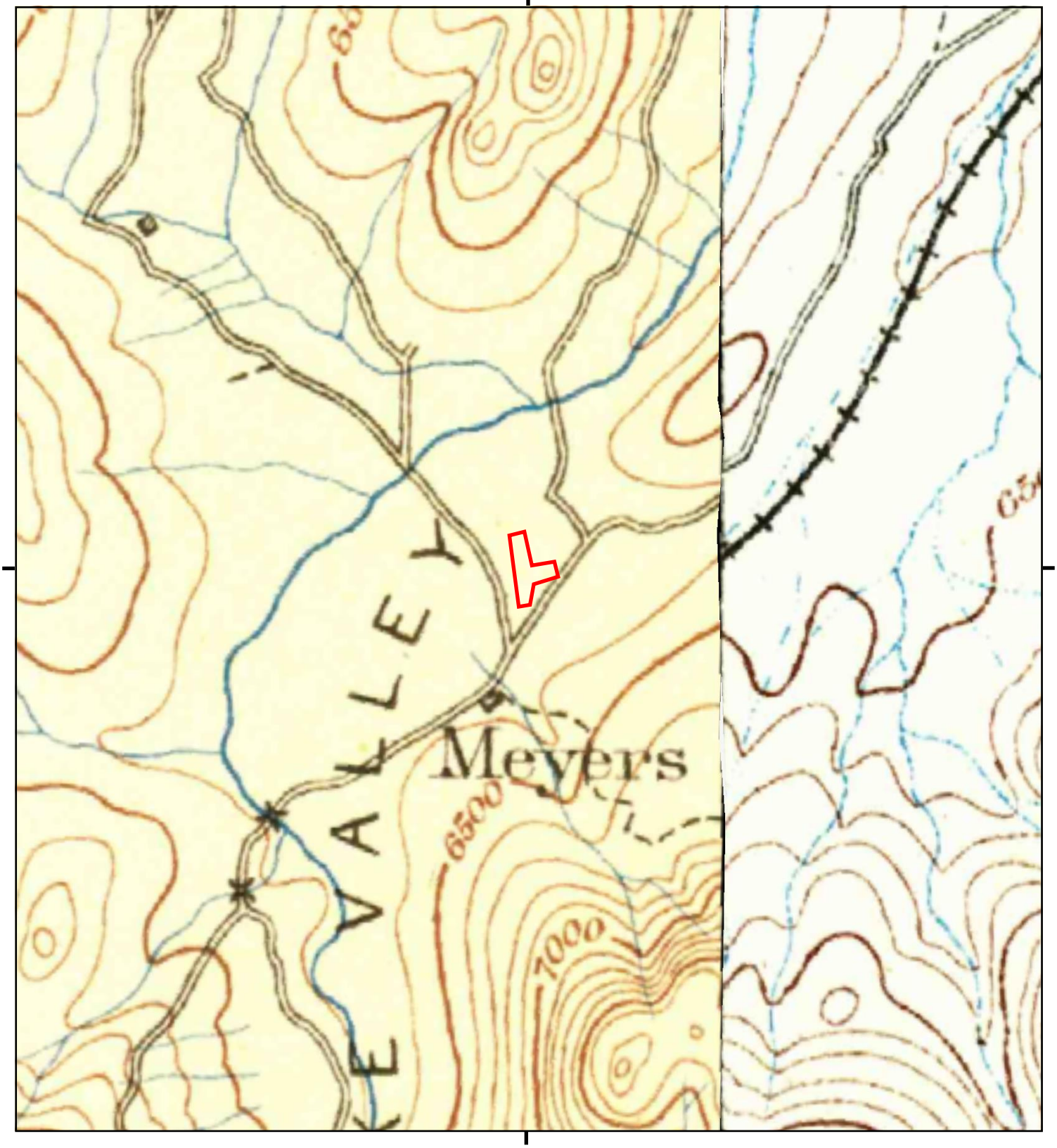
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pyramid Peak, 1895, 30-minute
SE, Markleeville, 1893, 30-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



This report includes information from the following map sheet(s).

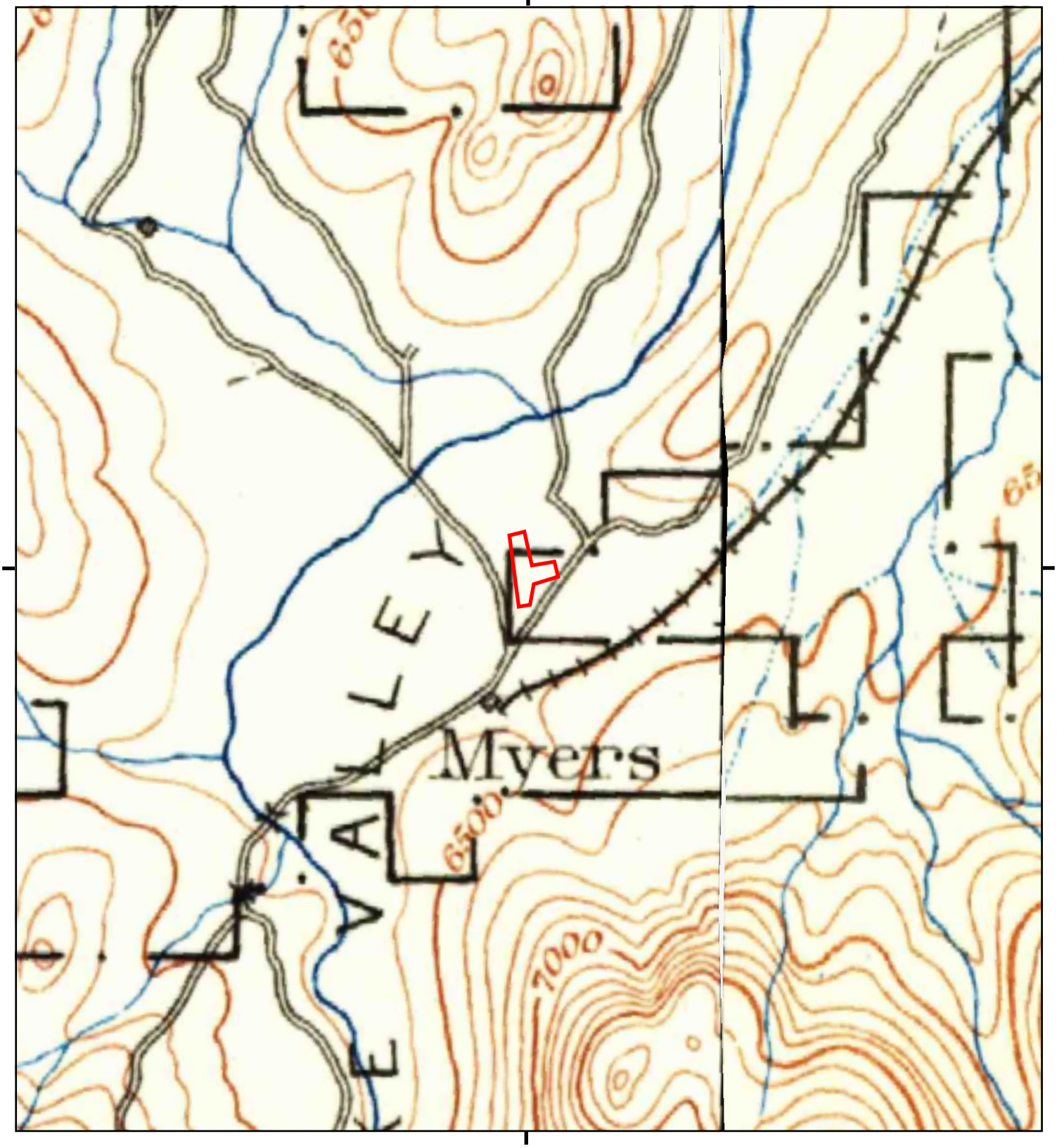
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pyramid Peak, 1891, 30-minute
SE, Markleeville, 1891, 30-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pyramid Peak, 1889, 30-minute
SE, Markleeville, 1889, 30-minute

SITE NAME: Pioneer Trail
ADDRESS: Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
CLIENT: Nichols Consulting Eng.,Chtd.

N

APPENDIX C

HISTORICAL AERIAL PHOTOGRAPHS

Pioneer Trail

Pioneer Trail / US Highway 50

South Lake Tahoe, CA 96150

Inquiry Number: 5990420.11

March 02, 2020

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

03/02/20

Site Name:

Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
EDR Inquiry # 5990420.11

Client Name:

Nichols Consulting Eng.,Chtd.
8795 Folsom Boulevard
Sacramento, CA 95826
Contact: Darcy Hinkley

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.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1998	1"=500'	Acquisition Date: August 25, 1998	USGS/DOQQ
1984	1"=500'	Flight Date: August 20, 1984	USDA
1980	1"=500'	Flight Date: September 03, 1980	USDA
1976	1"=500'	Flight Date: July 01, 1976	USGS
1974	1"=500'	Flight Date: July 11, 1974	USGS
1962	1"=500'	Flight Date: September 09, 1962	USDA
1952	1"=500'	Flight Date: August 14, 1952	USDA
1940	1"=500'	Flight Date: July 13, 1940	USDA

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INQUIRY #: 5990420.11
YEAR: 2016
= 500'
N
EDR



INQUIRY #: 5990420.11

YEAR: 2012

= 500'

N

EDR


INQUIRY #: 5990420.11
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 5990420.11
YEAR: 2005
= 500'
N
EDR



INQUIRY #: 5990420.11

YEAR: 1998

= 500'

N

EDR



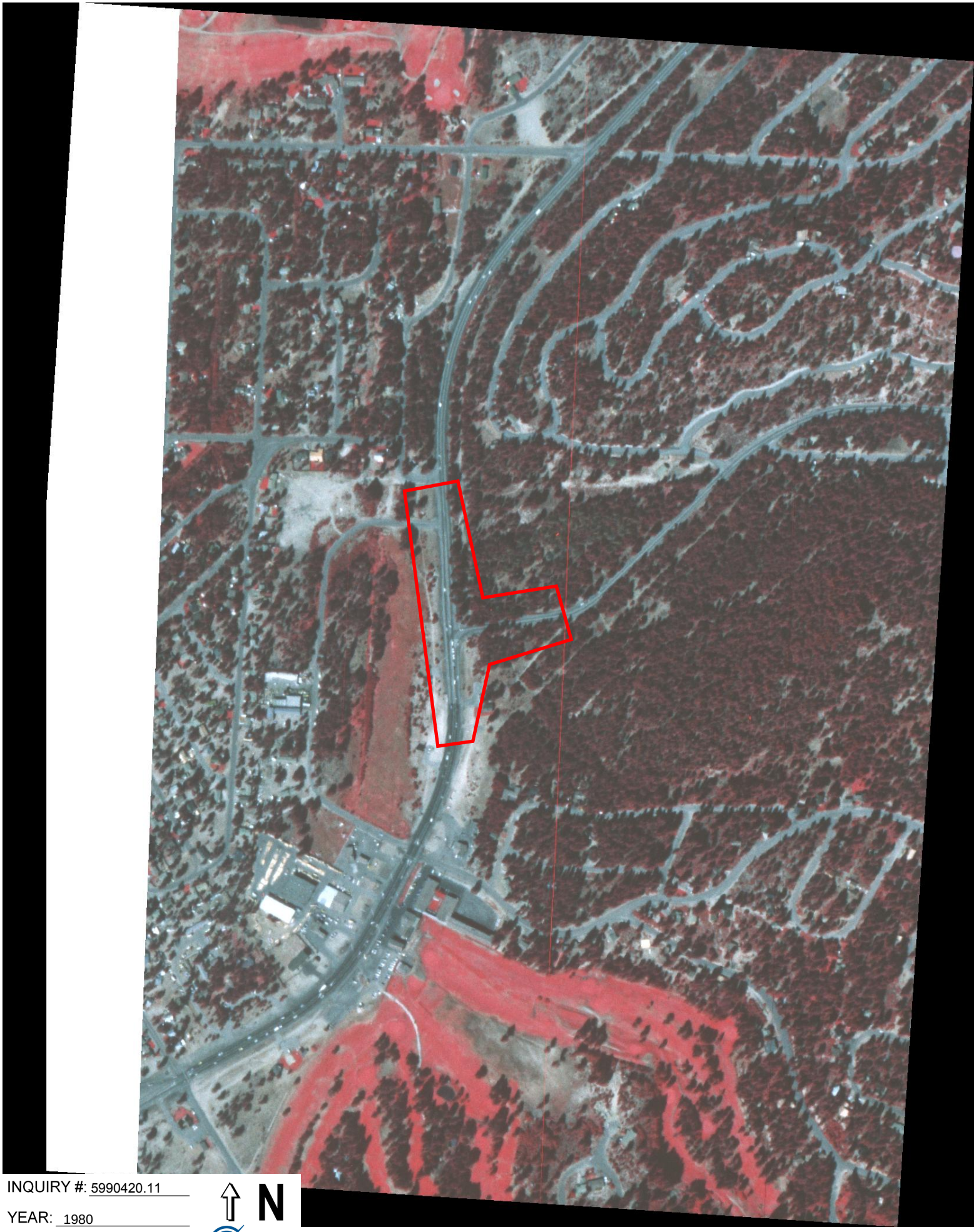
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YEAR: 1984

= 500'

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EDR



INQUIRY #: 5990420.11

YEAR: 1980

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YEAR: 1976

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EDR



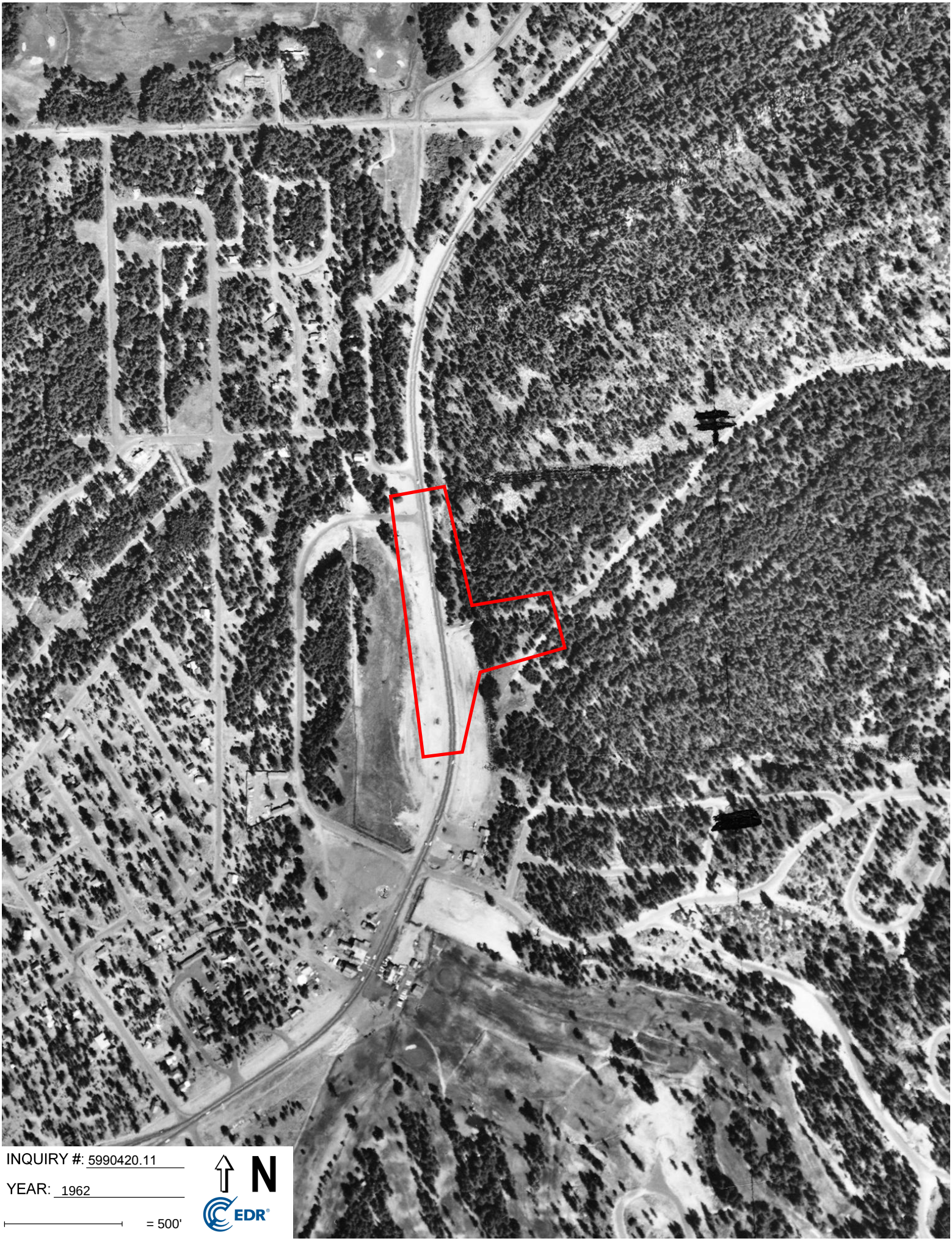
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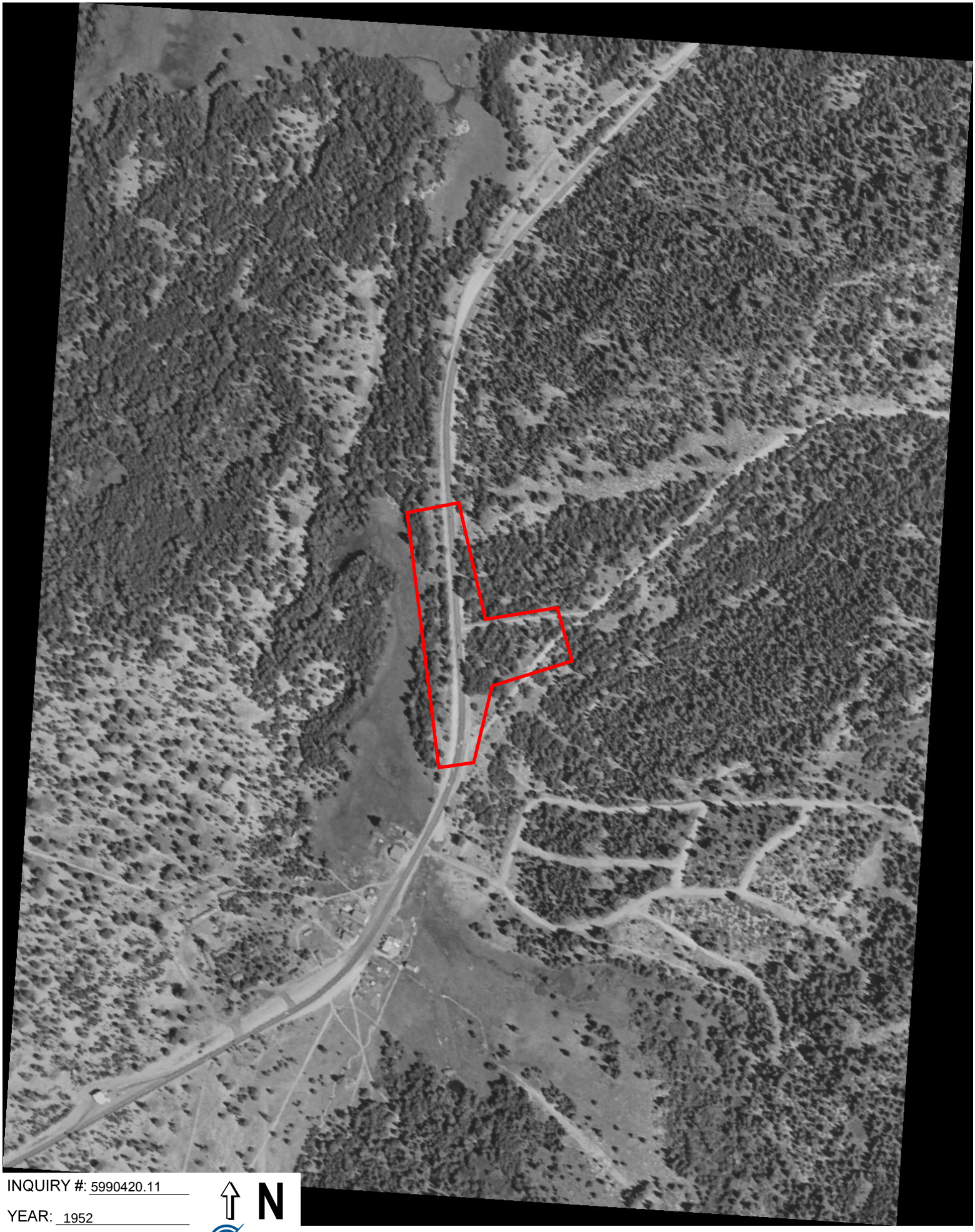
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EDR


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EDR



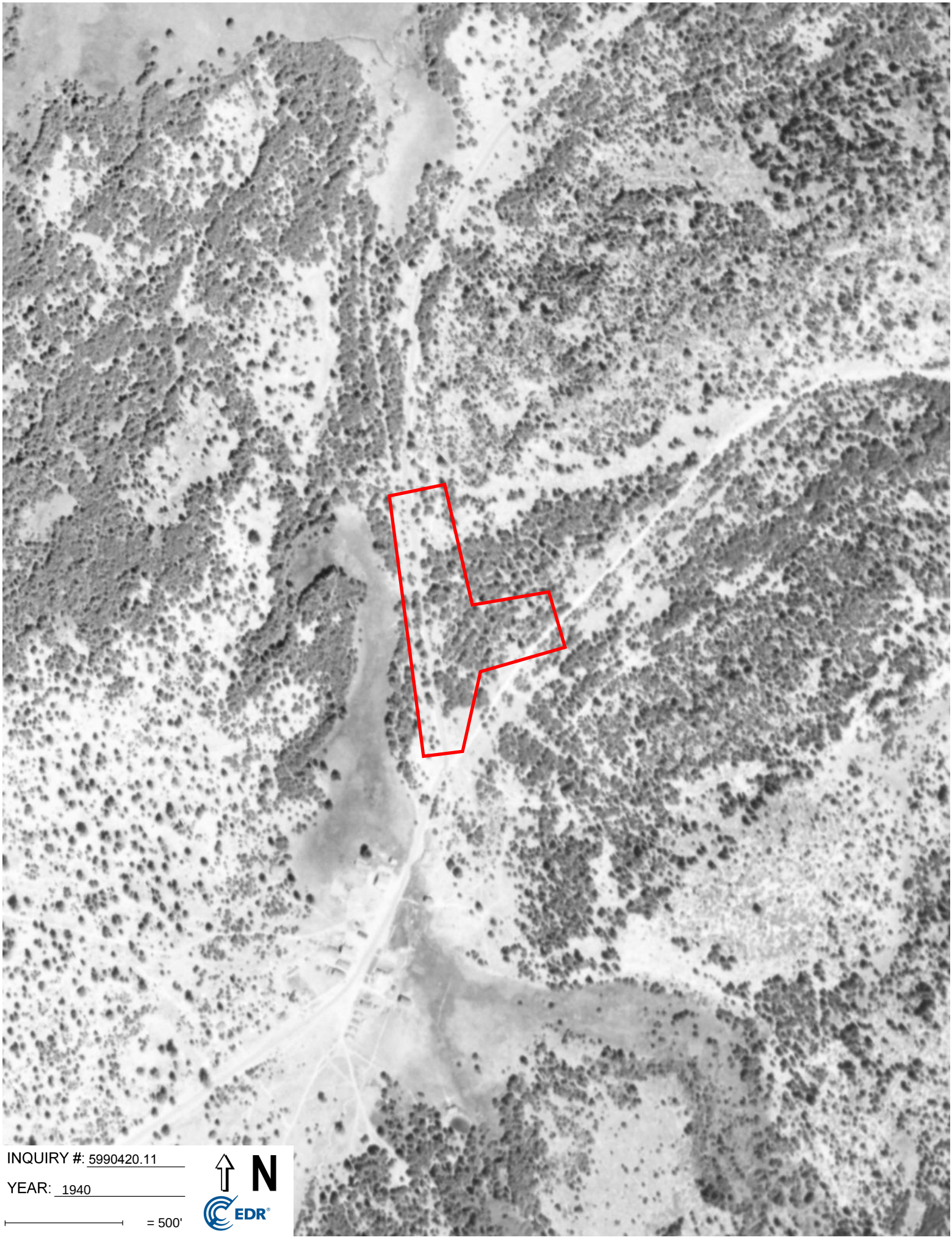
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EDR



INQUIRY #: 5990420.11

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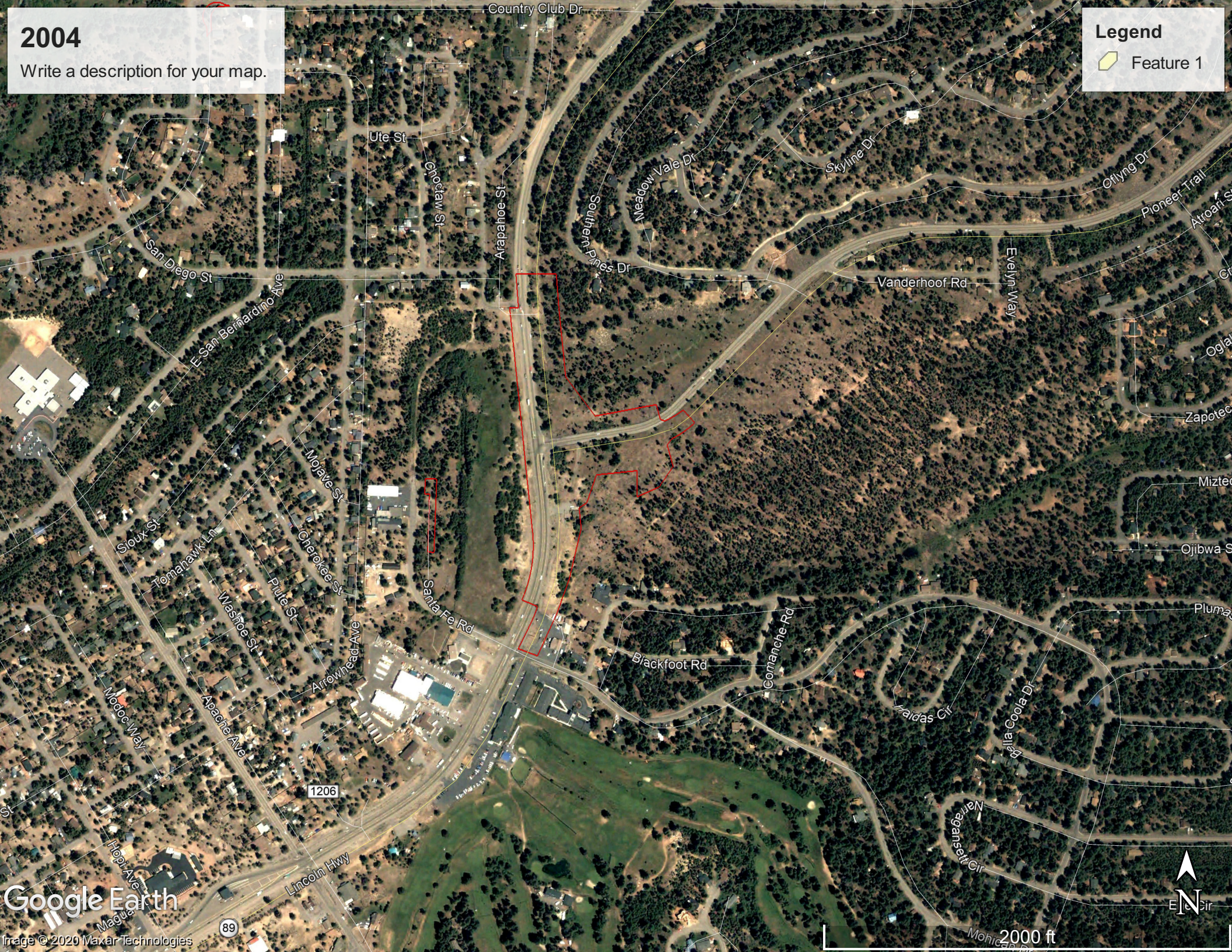
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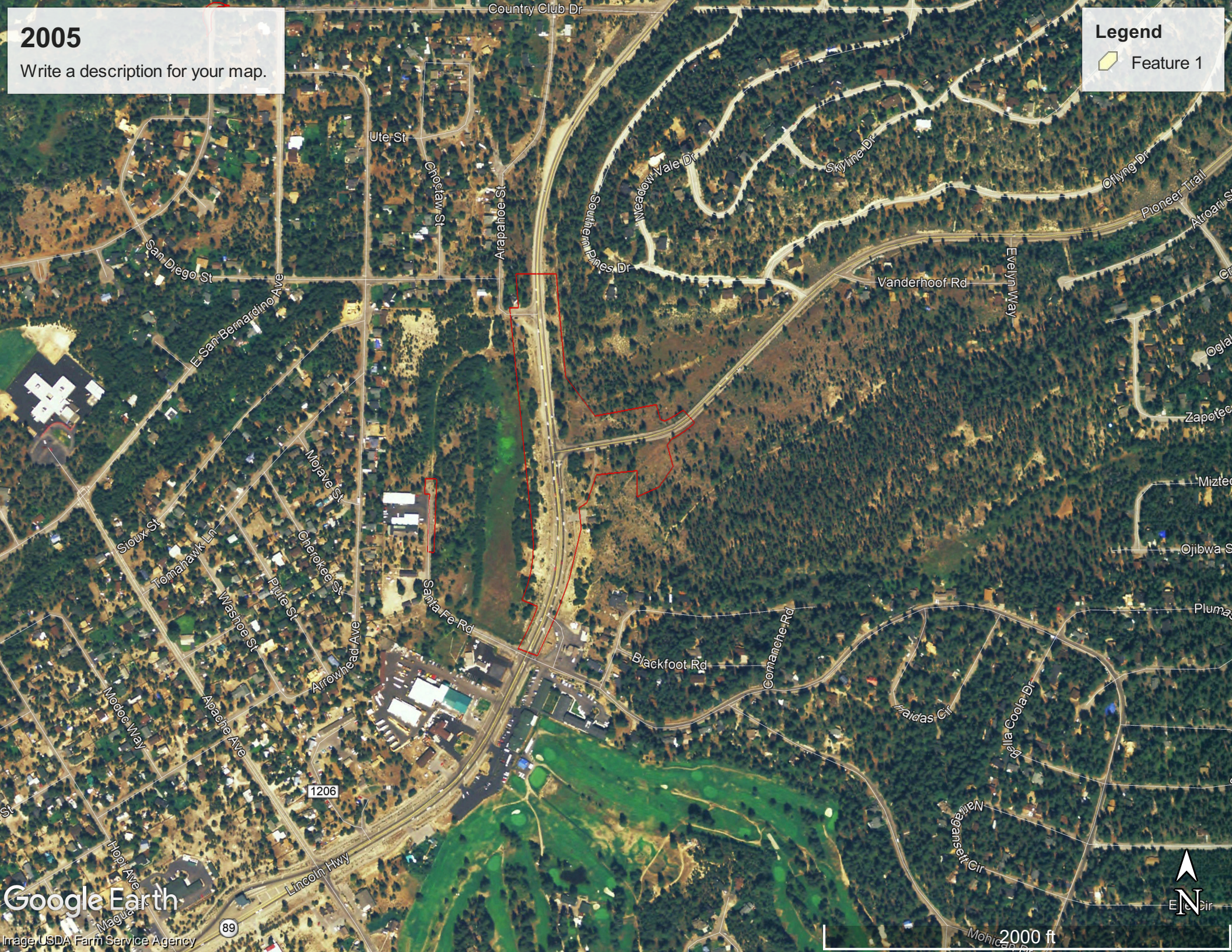
EDR

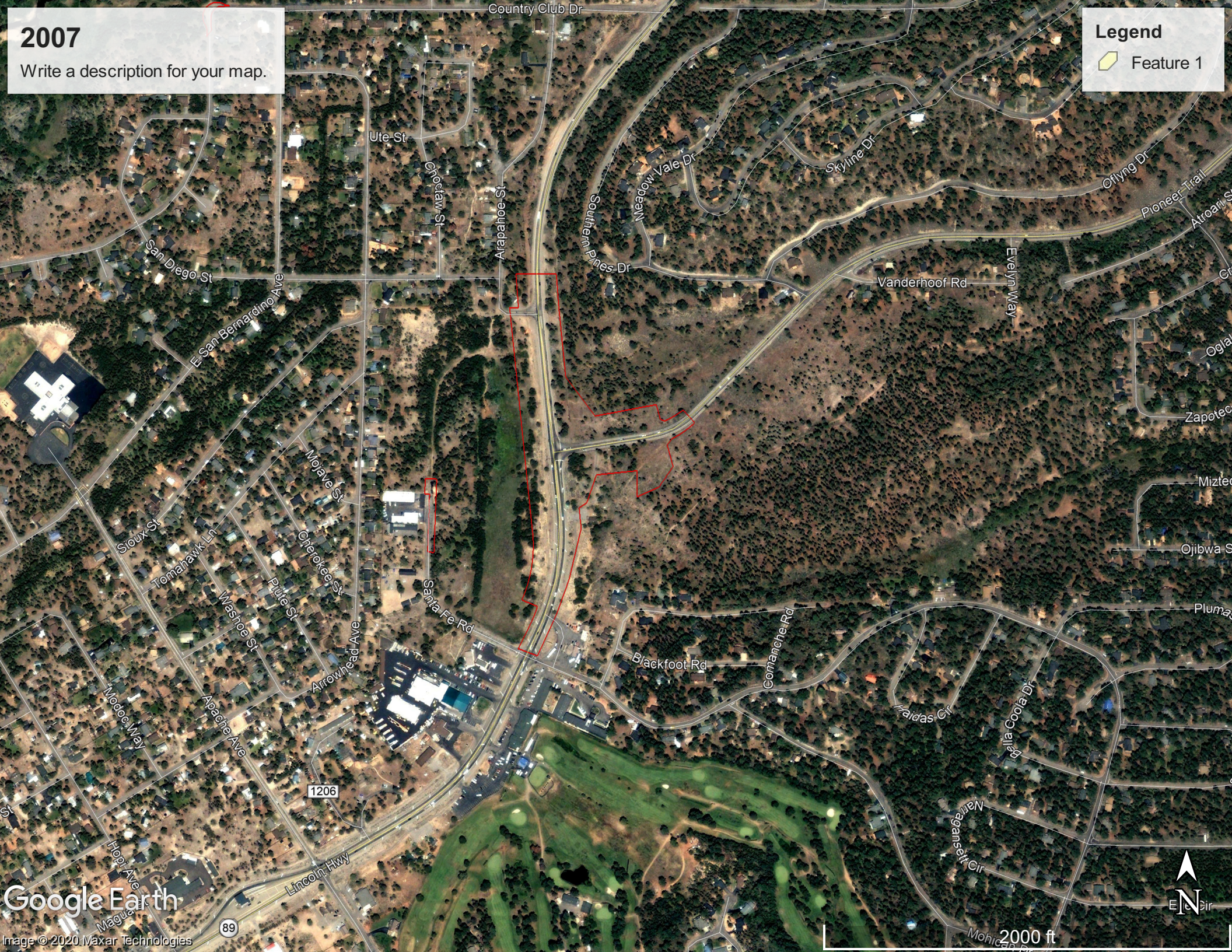

1987
Write a description for your map.
Legend
Feature 1
Country Club Dr
Ute St
Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Ofiyng Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
Modoc Way
Apache Ave
1206
Lincoln Hwy
89
Hopi Ave
Iroquois Cir
Cocopa Dr
Natchez Cir
Google Earth
Image U.S. Geological Survey
2000 ft
N


1992
Write a description for your map.
Legend
Feature 1
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Ute St
Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Oflyng Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
Modoc Way
Apache Ave
1206
Lincoln Hwy
89
Hopi Ave
Google Earth
Image U.S. Geological Survey
2000 ft
N

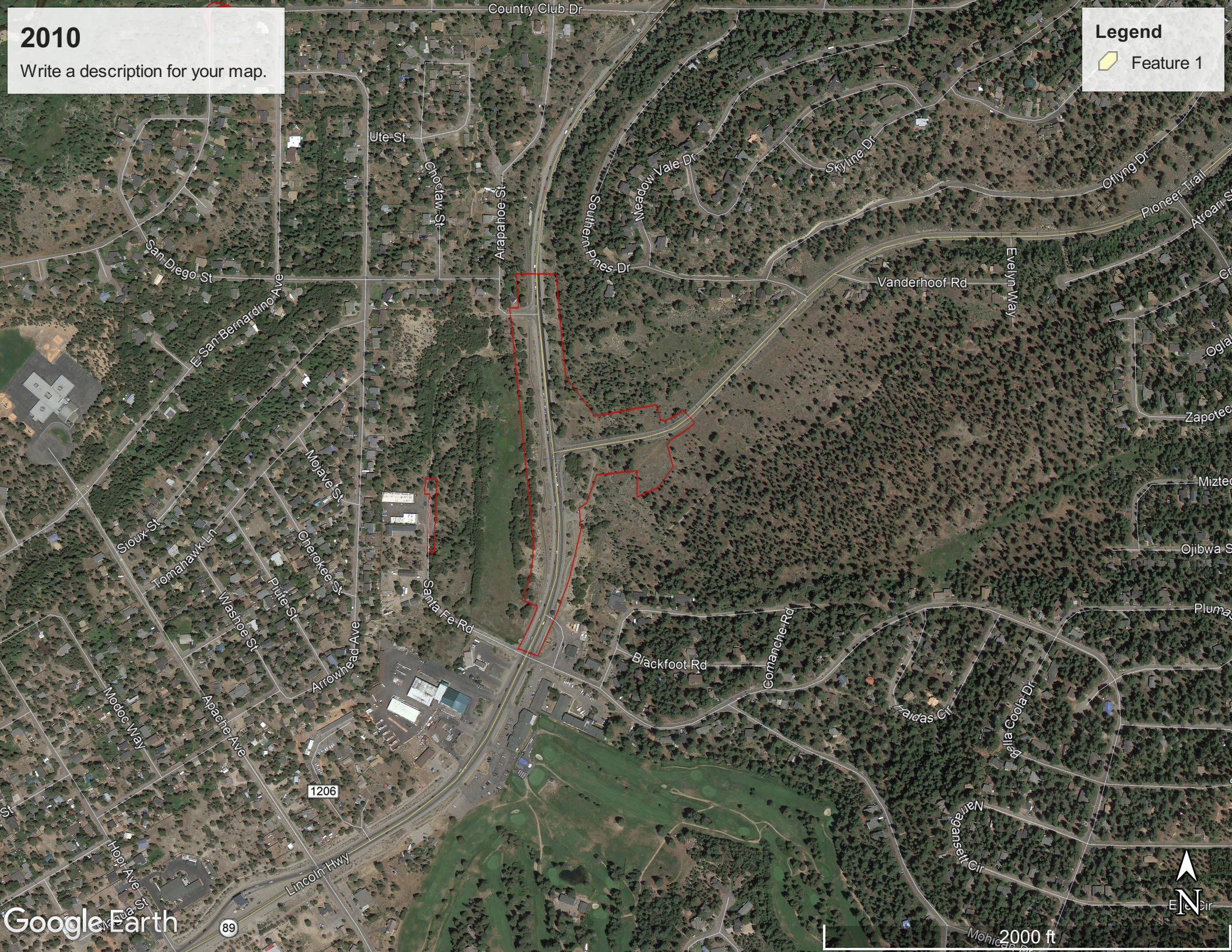

1998
Write a description for your map.
Legend
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Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Oflyng Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
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Image U.S. Geological Survey
2000 ft
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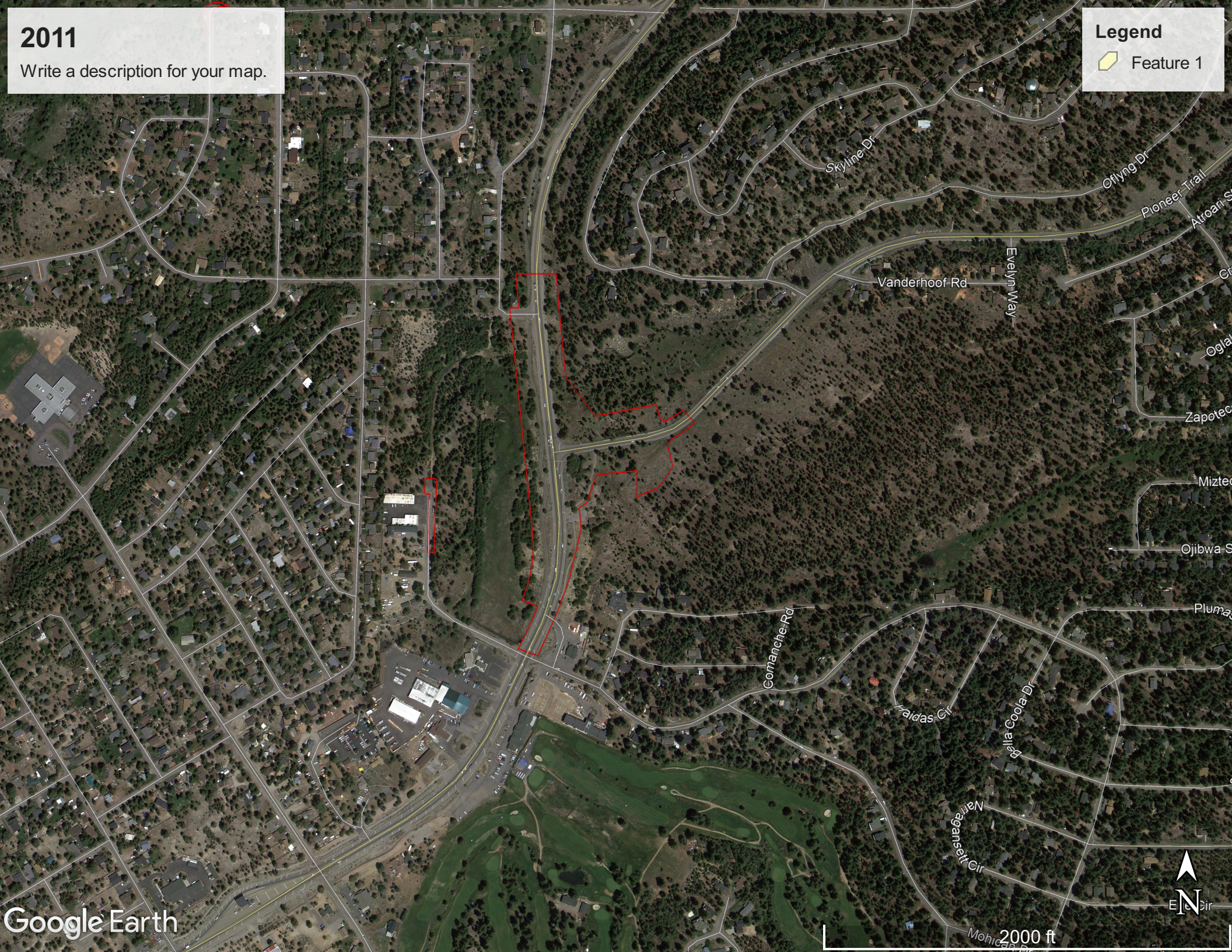

2004
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Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Oflyng Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Zapotec
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Piute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
Modoc Way
Apache Ave
1206
Hopi Ave
Lincoln Hwy
89
Google Earth
Image © 2020 Maxar Technologies
2000 ft
N


2005
Write a description for your map.
Legend
Feature 1
Country Club Dr
Ute St
Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Ofying Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
Haidas Cir
Coola Dr
Modoc Way
Apache Ave
1206
Hopi Ave
Lincoln Hwy
89
Google Earth
Image USDA Farm Service Agency
2000 ft
N

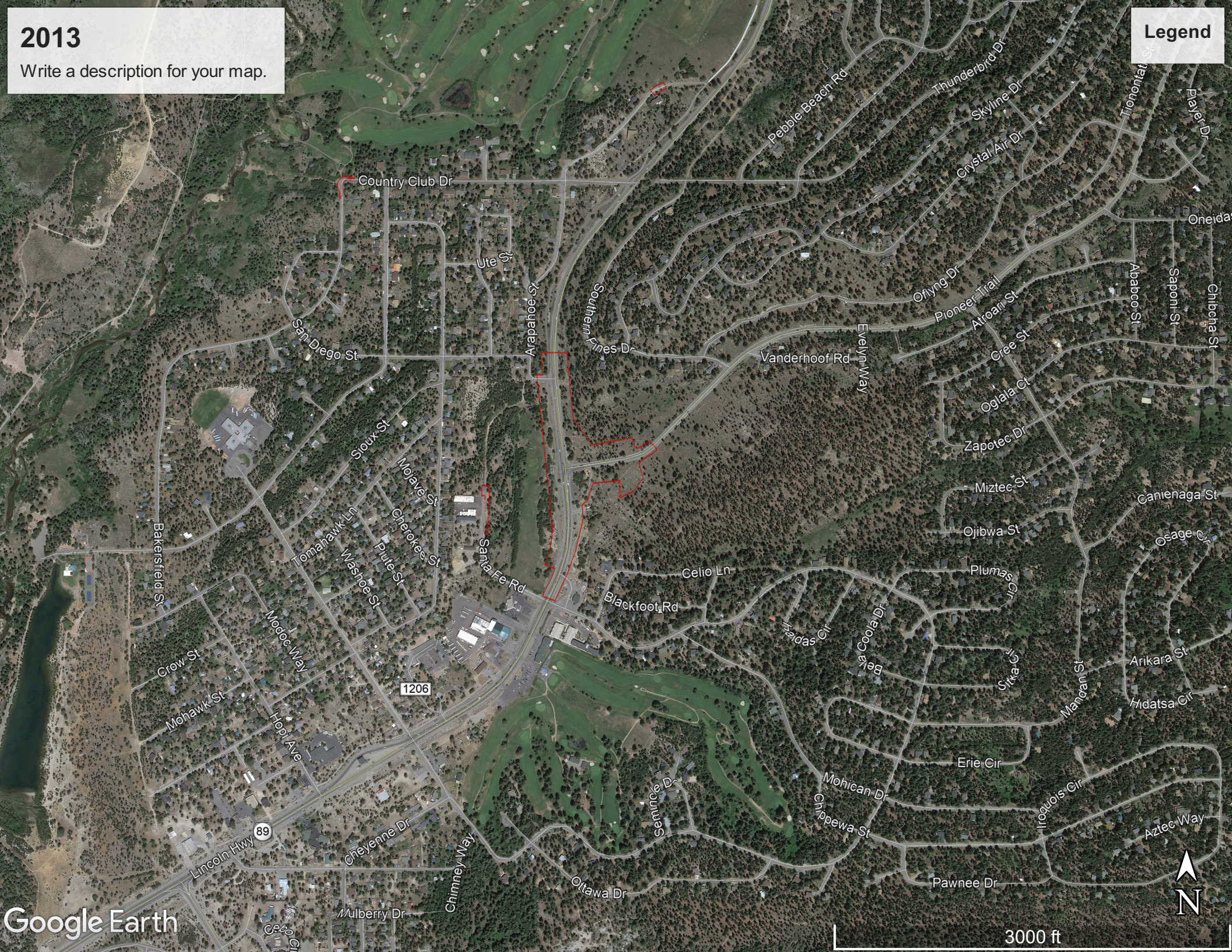

2007
Write a description for your map.
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Choctaw St
Arapahoe St
Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Oflyng Dr
Pioneer Trail
Vanderhoof Rd
Evelyn Way
San Diego St
E San Bernardino Ave
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Blackfoot Rd
Comanche Rd
Haidas Cir
Coola Dr
Apache Ave
Modoc Way
Hopi Ave
Lincoln Hwy
1206
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Google Earth
Image © 2020 Maxar Technologies
2000 ft
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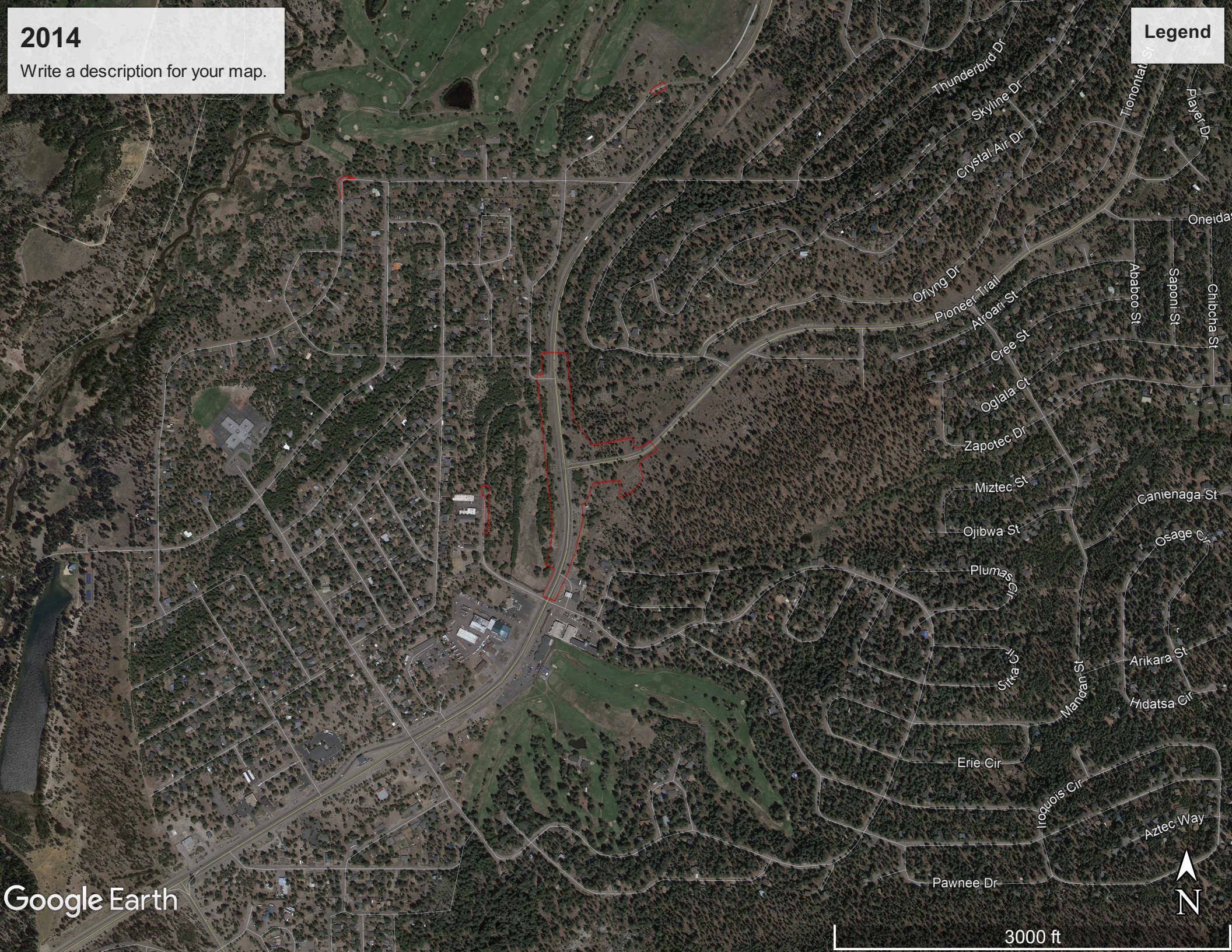

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Feature 1
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Southern Pines Dr
Meadow Vale Dr
Skyline Dr
Oflyng Dr
Pioneer Trail
San Diego St
E San Bernardino Ave
Vanderhoof Rd
Evelyn Way
Zapotec
Mizte
Ojibwa S
Mojave St
Sioux St
Tomahawk Ln
Cherokee St
Paiute St
Washoe St
Arrowhead Ave
Santa Fe Rd
Plumas
Comanche Rd
Blackfoot Rd
Haidas Cir
Bella Coola Dr
Nanaimo Cir
Modoc Way
Apache Ave
1206
Hopi Ave
Lincoln Hwy
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Google Earth
Image USDA Farm Service Agency
2000 ft
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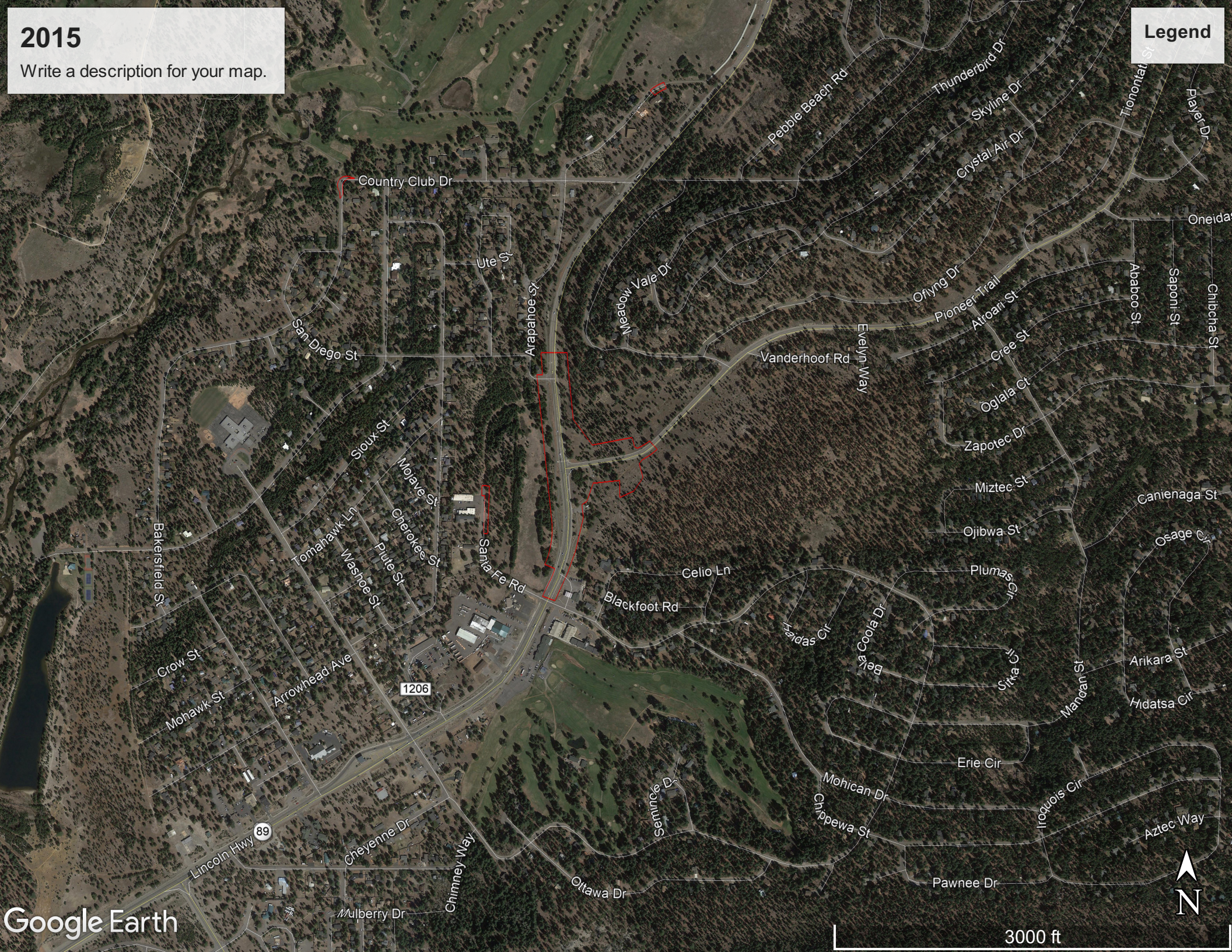

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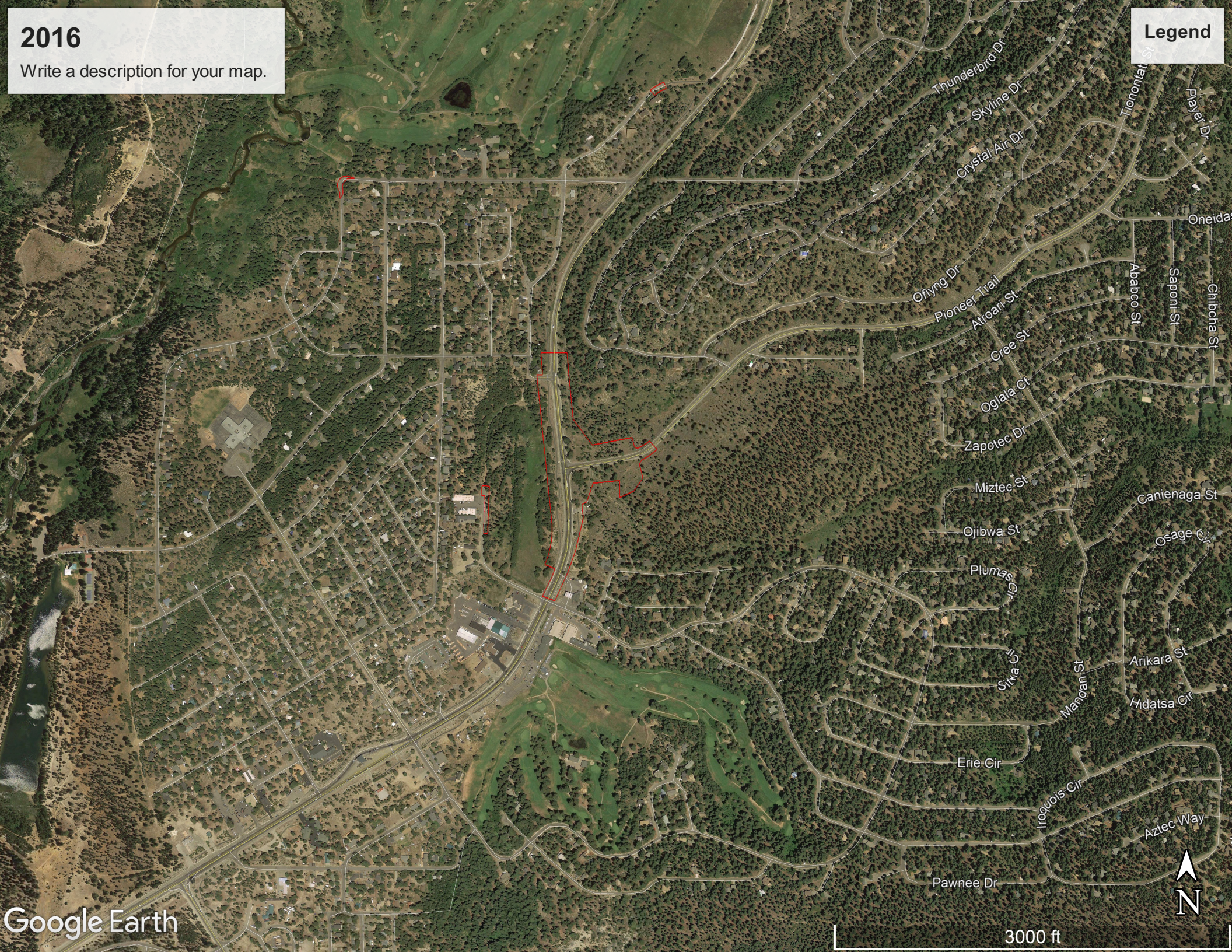

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Legend
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2012
Write a description for your map.
Legend
Country Club Dr
Pebble Beach Rd
Thunderbird Dr
Skyline Dr
Crystal Air Dr
Player Dr
Ute St
Arapahoe St
Southern Pines Dr
Ofiyng Dr
Pioneer Trail
Atroari St
Ababco St
Saponi St
Chibcha St
San Diego St
Vanderhoof Rd
Evelyn Way
Cree St
Ogiala Ct
Zapotec Dr
Miztec St
Canienaga St
Ojibwa St
Osage Ct
Sioux St
Mojave St
Cherokee St
Tomahawk Ln
Washoe St
Paiute St
Santa Fe Rd
Bakersfield St
Celio Ln
Plumas Cir
Blackfoot Rd
Haidas Cir
Bella Coola Dr
Sitka Ct
Arikara St
Hidatsa Cir
Manovan St
Modoc Way
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Mohican Dr
Chippewa St
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Aztec Way
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Google Earth
Image © 2020 Maxar Technologies


2013
Write a description for your map.
Legend
Country Club Dr
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Thunderbird Dr
Skyline Dr
Crystal Air Dr
Player Dr
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Southern Pines Dr
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Ojibwa St
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Haidas Cir
Bela Coola Dr
Sitka Cir
Manoan St
Arikara St
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Zapotec Dr
Miztec St
Canienaga St
Ojibwa St
Osage Cir
Plumas Cir
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2017
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Arapahoe St
Meadow Vale Dr
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Saponi St
Chibcha St
San Diego St
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Evelyn Way
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Ojibwa St
Osage Ct
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Bakersfield St
Santa Fe Rd
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Plumas Ct
Blackfoot Rd
Modoc Way
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Arikara St
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Erie Cir
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Chippewa St
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2018
Write a description for your map.
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Thunderbird Dr
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Tionontati St
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Atroari St
Ababco St
Saponi St
Chibcha St
Cree St
Ogiala Ct
Zapotec Dr
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Sitka Cir
Mandan St
Arikara St
Hidatsa Cir
Erie Cir
Iroquois Cir
Aztec Way
Pawnee Dr
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3000 ft
Google Earth

APPENDIX D

CERTIFIED SANBORN MAP REPORT

Pioneer Trail

Pioneer Trail / US Highway 50

South Lake Tahoe, CA 96150

Inquiry Number: 5990420.3

February 28, 2020

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/28/20

Site Name:

Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150
EDR Inquiry # 5990420.3

Client Name:

Nichols Consulting Eng.,Chtd.
8795 Folsom Boulevard
Sacramento, CA 95826
Contact: Darcy Hinkley

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Nichols Consulting Eng.,Chtd. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 0170-458E-B43E

PO # 501.30.25

Project Pioneer Trial

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 0170-458E-B43E

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX E

EDR PROPERTY TAX MAP REPORT

Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150

Inquiry Number: 5990420.6
February 28, 2020

The EDR Property Tax Map Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

NO COVERAGE

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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APPENDIX F

EDR BUILDING PERMIT REPORT

Pioneer Trail
Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150

Inquiry Number: 5990420.8
February 28, 2020

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting 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.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILDFAX® PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Nichols Consulting Eng.,Chtd. on Feb 28, 2020.

TARGET PROPERTY

Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **NO PERMITS IDENTIFIED**

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Name: JurisdictionName
Years: Years
Source: Source
Phone: Phone

BUILDING DEPARTMENT RECORDS SEARCHED

Name: El Dorado County Unincorporated Area
Years: 1980-2019
Source: El Dorado County, Building Services, PLACERVILLE, CA
Phone: (530) 621-5775

Name: South Lake Tahoe
Years: 1980-2019
Source: City of South Lake Tahoe, Building and Safety Division, SOUTH LAKE TAHOE, CA
Phone: (530) 542-6010

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

Pioneer Trail / US Highway 50
South Lake Tahoe, CA 96150

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Permits Found

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use(s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

APPENDIX G

EDR CITY DIRECTORY IMAGE REPORT

Pioneer Trail
Pioneer Trail & US Highway 50
South Lake Tahoe, CA 96150

Inquiry Number: 5990420.5
March 02, 2020

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

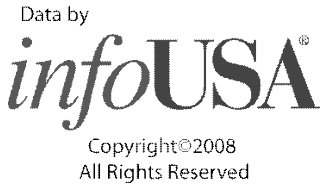
DESCRIPTION

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.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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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
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive

FINDINGS

TARGET PROPERTY STREET

Pioneer Trail & US Highway 50
South Lake Tahoe, CA 96150

Year	*CD Image*	*Source*	
PIONEER TRL			
2014	pg A2	EDR Digital Archive	
2010	pg A7	EDR Digital Archive	
2005	pg A12	EDR Digital Archive	
2000	pg A17	EDR Digital Archive	
1995	pg A21	EDR Digital Archive	
1992	pg A24	EDR Digital Archive	
US HIGHWAY 50			
2014	pg A6	EDR Digital Archive	
2010	pg A11	EDR Digital Archive	
2005	pg A15	EDR Digital Archive	
2000	pg A20	EDR Digital Archive	
1995	pg A23	EDR Digital Archive	
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2014

1461	BROOKS, ROBERT
1487	RICE, JOHN R
1507	VELEZ, LUIS A
1517	RILEY, FERN
1523	OCCUPANT UNKNOWN,
1527	MARTINEZ, MARTHA V
1531	HOWE, LOUIS
1547	OCCUPANT UNKNOWN,
1551	WULSTEIN, WELDON W
1555	OCCUPANT UNKNOWN,
1561	NELSON, SYLVIA
1565	GUERRERO, PETE R
1569	BURRELL, ROBERT R
1573	OCCUPANT UNKNOWN,
1579	CALIFORNIA COLORS
	WOLVERTON, MARK A
1585	PIGNATI, NICOLA
1589	BARNES, THOMAS R
1605	PERRY, JOHN L
1611	BOWMAN, ROBERT P
1772	SCHULLER, KARENINA L
1784	WINKELMAN, ERIK V
1788	WINKELMAN, DENISE
1797	SEIDEL, CHARLES
3025	COLE HAROLD JR
	COLE, CLAY D
3060	CHAVEZ, MARCO
3096	OCCUPANT UNKNOWN,
3159	CIPPA, JAMES
3169	SCHEMBRI, DANIEL
3187	GILMORE, NELLIE
3229	SHADWELL, DALE
3260	TEMPLE BAT YAM
3290	LOWE, ANTHONY
3320	STENSON, MICHAEL E
3326	OCCUPANT UNKNOWN,
3340	FITZSIMMONS, SEAMUS G
3348	VICKERS, JERRY A
3380	CHACON, OMAR
3425	OCCUPANT UNKNOWN,
3443	VAZQUEZ, ANGELICA
3521	JONES, JEFFREY C
	KLECAK, PERRY E
3575	HAUGH, TARA S
3601	ROBINSON, ALEXIS
3602	SANTIAGO, LEAL
3606	CANARDO, DON
3609	DELAVEGA, RONALD
3611	LAFAZIA, M F
3614	SAUNDRA, KOECK

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2014 (Cont'd)

3628	ALVARADO, IGNACIO
	ARGUETA, MARIO
	DIAZ, SONIA
	FLORES, PERES J
	GIL, CRUZ M
	GRAJEDA, ALONSO
	HERNANDEZ-GARCIA, IRMA
	LOPEZ, MILAGROS
	PEREZ, N P
	SALAZAR, FRANCISCO
	TORNERO, IVONNE
3640	BROWN, JOEY
	DIEKHOFF, MACEE
	LOPEZ, INOCENCIO
	MACIAS, RICARDO
	MARICH, DAVID A
	PASCUA, VIOLETA
	SIUDZIK, ANNA
3646	FOLLETTE, GARY G
	FRANCO, DAVID
	HAWKINS, JAYMIE
	HERNANDEZ, RAQUEL
	HOLLINS, JESSE
3650	AGBIDAY, MANUEL
	AGBIGAY, ISAGANI
	BROWN, FORREST
	CALLES, MARIA E
	CHAVEZ, RAUL
	CLARK, MICHAEL D
	DIAZ, GUILLERMO
	FLANAGAN, W
	FLEMING, JUDY
	GARCIA, ZELESTE
	GUERRERO, ANA C
	JACKSON, RITA
	JOAQUIN, ARTURO G
	LARIOS, MAXIMINO
	LUCAS, LAZARA
	MARTINEZ, LAURA
	MEDINA, LUCY M
	MENDEZ, MAURO M
	MOJICA, JESUS
	ORPILLA, MANOLITA
	ORTIZ, ENRIQUE
	PORTILLO, JOSE A
	RAMIREZ, MARIA
	ROMERO, ANTHONY
	SALVACION, MARIA
	SELKOUI, MOHAMED
	TRINIDAD, JUAN

PIONEER TRL 2014 (Cont'd)

3650	WARREN, LINDA
3672	ORBER, MICHAEL A
3710	DOLROES, NOVAGRO
3715	OCCUPANT UNKNOWN,
3716	AGUILAR, LYDIA
	AHUMADA, CARLOS
	CURIEL, AMANDA
	CURIEL, NOEMI
	MEDINA, MARIA
	NAVARRO, GLORIA
3721	EHLERT, DENNIS R
3725	HEFNER, A
3735	JOHNSON, JUDITH L
3741	NUNEZ, ANA M
3746	CABRERA, JOHN
	SCHMALE, PETER M
3754	ZEHREN, RON
3760	OCCUPANT UNKNOWN,
3762	ALVARADO, GABRIEL C
	CAMREN, DEANDA
	JUAN, RODRIGUEZ
	RODRIGUEZ, JUAN
3763	EBLACAS, DARLA
	RAMOS, WILL
3769	THELIN, ERIC
3773	BROWN, JASON
	CASILDO, PAZ R
	GALLAGHER, SHAWN
	MARISCAL, ANN C
	PAEZ, ROSELIA C
3782	CRUZ, ORTIZ
	FAUSTO, JUAN C
	FLEMING, SHIRLEY
	FLEMMINGS, JUDY
	GALICIA, FRANCISCO
3783	GARCIA, CONSUELO
3789	ARCE, CARLOS
	DELARA, ROSEMARIE
	GUILLEN, GREGORIO
3790	GRAY, JORDAN
	MATTHEWS, ROBERT G
3793	MCCREARY, FRANK O
3797	COLE, ROBERT H
3809	AGUILA, ARMANDO C
3816	JENNY FASHION JEWELRY
3830	COLLIN, JASON
	DEBOARD, SALLY M
3840	VACATION RESORTS INTERNATIONAL
3845	AMERICANA VACATION CLUB
	AMERICANA VACATION RESORTS

PIONEER TRL 2014 (Cont'd)

3867	ACEVEDO, JULIAN
	BONIFACIO, MARCOS
	ELOUANNAS, MOHAMED
	GONZALEZ, GUSTAVO
	MEDINA, CARLOS
	PRECIADO, BLANCA
	RODRIGUEZ, JUAN
3870	BASUEL, NEZZIE
	BAYANI, ALELY
	CURIB, FERNANDA C
	CURIE, JOSE
	DAOS, NARCISO
	GALICIA, ALVARO F
	GINES, FELICIANO
	GONZALEZ, ARMANDO
	INDA, MARLON
	JOSE, LUIS
	LATORRE, GRAZEILLE
	MATILLA, MARK
	MELENDREZ, MARION
	OCOLAR, ROSITA F
	ORTEGA, OLGA
	PADILLA, LINDA F
	SANG, EVELYN S
	TORES, EDUARDO S
	UY, JEROME
	VILLA, CYRUS A
	WETZEL, LEEANNE
	YONSON, ZENAIDA
3873	HALL, JR
3879	ALPINE DENTAL CARE
3880	MATA, ADRIANA
3885	MI PUEBLO
3890	YBANEZ, JOSEPH D
3893	CONTRERAS, ISMAEL
	DIAZ, AUSTINE
	JIMINEZ, JOSE
	MOUNTAIN, GREEN
3900	LAKE LEVEL DEVELOPMENT LLC
	TOM, BRADLEY
3901	NATIONAL NINE MOTEL
3918	ELIZABETH LODGE
3920	ESQUIVEL, ROBERT B
3923	7-ELEVEN INC
3930	TRAVELLERS INN SUITES
3935	HAIR & NOW

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 2014

804	POULEN, GREG
1984	VETTER, M R
1986	MERCER, WARREN
2130	TAHOE URGENT CARE
2140	BLOOM, BART W
2933	ROADRUNNER GENERAL STORE
	WATTA BIKE SHOP
2950	STEVES TRANSMISSION SERVICE
2970	CHA-DOR REALTY
2977	LIRAS SUPERMARKET
2986	DAUM ENTERPRISES INC
3008	CROSS FIT 6250
3021	TAHOE PARADISE GOLF COURSE INC
	TAHOE PARADISE SPORTS
3058	LAKE TAHOE HISTORICAL SOCIETY
3071	ARI MAKINEN ENTERPRISES INC
3100	BECKWITH CONSTRUCTION
3120	BITTMAN, STEWART
3140	GUTH, DIANE K
3141	FREEL PERK CAFE SHOP
	VERDE MEXICAN ROTISSERIE
3170	STANTON ALISON E
3208	FOOD & AGRICULTURE CAL DEPT

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2010

1487	OCCUPANT UNKNOWN,
1507	VELEZ, LUIS A
1517	RILEY, DONALD J
1547	OCCUPANT UNKNOWN,
1551	WULSTEIN, WELDON W
1555	CODOLUTO, ANTHONY J
1561	NELSON, SYLVIA
1565	GUERRERO, PETE R
1569	BURRELL, ROBERT R
1573	OCCUPANT UNKNOWN,
1579	WOLVERTON, MARK A
1585	HARDY, JAYMI
1589	BARNES, THOMAS R
1601	WALTHERS, DAVID A
1605	OCCUPANT UNKNOWN,
1607	ROMERO, FRANK V
1611	BOWMAN, ROBERT P
1772	SCHULLER, KARENINA L
1788	WINKELMAN, ERIK V
3025	COLE HAROLD JR
3096	OCCUPANT UNKNOWN,
3159	CHRISTENSEN, KEVIN
3169	SCHEMBRI, DANIEL
3187	SCHULBA, FRANK
3229	LEIPPE, DANI
3290	LOWE, ANTHONY
3320	OCCUPANT UNKNOWN,
3326	CULL, TIM J
3348	VICKERS, JERRY A
3380	FRENCH, DAN
3425	OCCUPANT UNKNOWN,
3443	VAZQUEZ, ANGELICA
3575	WAGNER, JOSHUA
3601	ELLIS
	ROBINSON, A
3602	TAPIA, MARISOL
3606	CANARDO, DON
3611	LAFAZIA, M F
3614	SULLIVAN, DANIEL F
3628	FLORES, PERES J
	GRAJEDA, ALONSO
	TORNERO, IVONNE
3640	BANKS, TONY J
	BLOOM, CATHY
	HERVEY, RANDEE
	PARSLEY, IVAN
	SAVAGE, COZETTE A
	YOUNG, KAIKANE
3646	DAVIDSON, ROBERT
	GARCIA, CELESTE J

PIONEER TRL 2010 (Cont'd)

3650	AGBIDAY, MANUEL
	AGBIGAY, ISAGANI
	ARGUETA, MARIO
	CALLES, MARIA E
	FLANAGAN, W
	GUERRERO, ANA C
	HERNANDEZ, ROGELIO
	MARTINEZ, LAURA
	MENDEZ, MAURO
	MOJICA, JESUS
	OLMOS, SERGIO
	ORPILLA, MANOLITA
	PORTILLO, JOSE A
	RAMIREZ, MARIA
	SALVACION, MARIA
	TAHOE TOWNHOUSE APARTMENTS LLC
	VASQUEZ, ANA
3672	ORBER, MICHAEL A
3708	SMITH, REY
3710	DOLROES, NOVAGRO
3715	PAUOLE, MELODY
3716	AGUILAR, LYDIA
	AHUMADA, CARLOS
	BALLENTINE, JOHN R
	LOPEZ, LETICIA L
	MEDINA, MARIA
	MEDRANO, MARIA D
3721	ADEN, ARDIANA
	EHLERT, DENNIS R
	FISHER, BARBARA E
	GONZALEZ, HIGINIO
	ROSEN, MELISSA
3724	HEAVENLY, VALLEY
3735	BEARDEN, LARK K
	HILL, KEYAWNA L
	ROBERTS, MICHELLE
3741	KOKAB, SAAVIA
	NUNEZ, ANA M
3746	FITZGERALD, MICHAEL
3760	MCCOLLUM, MEREDITH
3762	MARISCAL, ANA
3769	THELIN, ERIC
3770	CATACUTAN, RESTITUTO A
3773	BRENES, NICHOLAS
	CASILDO, PAZ R
	GALLAGHER, SHAWN
	LONG, JASON
	MARISCAL, ANN C
	PAEZ, ROSELIA C
3782	BURKI, JAMES A

PIONEER TRL 2010 (Cont'd)

3782	COLE, CASSANDRA
	FAUSTO, JUAN C
	GOMEZ, RODOLFO
	LLAMAS, VANESSA
	MARURE, A M
	OCHOA, GOMEZ R
	SAKAGUCHI, SHOJI O
	SUREZ, TERESA
	UVALDO, NAVARRO
3783	GUTIERREZ, JOAQUIN
3789	ALVARADO, GABRIEL C
	DELARA, ROSEMARIE
	PLACIDO, DELIA
	YANEZ, ALICIA
3790	BREAK AWAY PLAN
	HERNANDEZ, ARTHUR J
3793	MCCREARY, FRANK O
3809	AGUILA, ARMANDO C
3816	JENNY FASHION JEWELRY
	TAHOE NETWORK TV
3830	BALCOMB, MARK
	BRAVO, S V
	DEBOARD, SALLY M
	MEDINA, JUAN
3840	VACATION RESORTS INTL INC
3843	MOLINA, MARCOS A
3845	AMERICANA VACATION CLUB
	AMERICANA VACATION RESORTS
3848	VIRENE, JOSANNE
3853	OCCUPANT UNKNOWN,
3863	PETERS, PATRICIA
3867	BONIFACIO, MARCOS
	CATES, ELLSWORTH
	CURIB, JOSE
3870	DAOS, NARCISO
	GALICIA, ALVARO F
	GINES, FELICIANO
	GONZALEZ, ARMANDO
	LAGAT, ANTONIO
	LATORRE, GRAZEILLE
	MELENDREZ, ANTHONY W
	OCOLAR, ROSITA F
	SANG, EVELYN S
	TORES, EDUARDO S
	UY, JEROME
	VILLA, AGNES
	YONSON, EUTIQUIO
3873	HALL, JR
3879	ALPINE DENTAL CARE
	TROMBKA JERARD DDS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2010 (Cont'd)

3880	DAPIAOEN, EMMA D
3885	MI PUEBLO
3886	OCCUPANT UNKNOWN,
3890	YBANEZ, JOHN G
3893	DARLUCIO, ISIDRO
	DIAZ, AUSTINE
	ESCANDOR, BENJAMIN
	FEAGLEY, JERRY S
	PLATERO, ANA
	WELECHENKO, ROSE
3894	WILD MAN COFFEE TEA & MORE
3900	LAKE LEVEL DEVELOPMENT LLC
3901	NATIONAL NINE MOTEL
3918	ELIZABETH LODGE
3923	7-ELEVEN INC
3930	TRAVELLERS INN SUITES
3935	HAIR & NOW

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 2010

1984	VETTER, M R
1986	MERCER, WARREN
2014	KENWOOD SILVER COMPANY INC
2040	PHILLIPS-VAN HEUSEN CORP
2060	JOHNSTONES RV
2092	MCKINNEY & ASSOC INC
2110	AMERIGAS PROPANE LP
2130	TAHOE URGENT CARE
2140	PAINT STORE
2933	A VERTICAL SPORT
	ROADRUNNER GENERAL STORE
	WATTA BIKE SHOP
2950	STEVES TRANSMISSION SERVICE
2970	CHA-DOR REALTY
2977	LIRAS SUPERMARKET
2986	DAUM ENTERPRISES INC
3008	ALPACA PETES
3021	TAHOE PARADISE SPORTS
3058	LAKE TAHOE HISTORICAL SOCIETY
3071	ARI MAKINEN ENTERPRISES INC
3095	BURNS, SHARON A
3100	BECKWITH CONSTRUCTION
	DIEHL KRIS ORCHESTRAS
3120	BITTMAN, STEWART
3132	MAYAS MEXICAN GRILL INC
	STONE DEPOT
3151	FRANCIS, PAMELA J
3170	BADGER GROUP LLC
	SWOPE, ELIZABETH M
3180	LYNNS SWEETS & EATS
3202	HEFFNER MARTY
	LAKE TAHOE RENTALS
3208	CALIFORNIA STATE OF FOOD AND A
3214	CASA, DEL R

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2005

1481	HOLST, RANDALL L
1487	OCCUPANT UNKNOWN,
1507	VELEZ, LUIS A
1517	RILEY, DONALD J
1531	MUSSER, DIANE M
1547	SHAFER, CAROLYN A
1551	WULSTEIN, WELDON W
1555	CODOLUTO, ANTHONY J
1561	NELSON, SYLVIA
1565	GUERRERO, PETE R
1569	BURRELL, ROBERT R
1573	OCCUPANT UNKNOWN,
1579	WOLVERTON, MARK A
1589	BARNES, THOMAS R
1605	PASSARELLA, GINA
1607	ROMERO, FRANK V
1611	BOWMAN, ROBERT P
1629	MURRAY, MICHAEL P
1772	SCHULLER, KARENINA L
1784	WINKELMAN, ERIK V
1797	AZIZ, C
3025	COLE HAROLD JR
	COLE, HAROLD E
3096	OCCUPANT UNKNOWN,
3120	ENDRE PETER DARVAS
3159	PETERSON, JONQUIL A
3229	ERICKSON, BRIAN R
3320	DY, NARCISO R
3348	VICKERS, JERRY A
3380	LIEBELT, AUGUST
3425	OCCUPANT UNKNOWN,
	STEPHEN T HEWITT
3443	VAZQUEZ, ANGELICA
3601	ROBINSON, A
3602	KADELSKI, AMY
3606	CANARDO, DON
3609	OCCUPANT UNKNOWN,
3611	LAFAZIA, M F
3614	KOECK, SAUNDRA C
3628	LARA, NICA
3640	AGUILAR, JOSE
	CASIAN, PABLO
	CASTRO, ELOISA
	ESTRADA, JOSE A
	FLORES, ENRIQUE B
	GOMEZ, ELISEO
	JIMENEZ, LUIS
	RODRIGUEZ, ROCIO
	TORRES, PERREZ S
3646	GARCIA, CELESTE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2005 (Cont'd)

3646	JIMENEZ, SAUL C
3650	RAMIREZ, DAISY C
3672	ORBER, MICHAEL A
3715	LEE, GARY L
3716	AGUILAR, LYDIA
3721	DILLING, MELISSA
	FISHER, BARBARA E
	GONZALEZ, HIGINIO
	ROSALES, CONCEPCION
3724	HEAVENLY, VALLEY
3739	FAJAYAN, MARCOS F
3741	KOKAB, SAAVIA
3762	DEPOLA, RITA
3763	ZEPEDA, MOYA J
3769	MARINO, MARIE J
3770	CATACUTAN, RESTITUTO A
3773	BRENES, NICHOLAS
	FLOOD, SPICER
	KARPOW, SHAUN
	MARISCAL, ANN
	MASON, VADA
	MEDINA, JOSE A
	QUINTERO, LUIS C
3778	NYE, WILLIAM T
3782	BURKI, JAMES A
	CAPERS, LOUIS
	COLE, CASSANDRA
	DEPAULA, LUCILA
	FIFE, JASON
	GALICIA, FRANCISCO
3783	GUERRO, MAXIMIL
3789	ALVARADO, GABRIEL C
	DELARA, ROSEMARIE
3790	BREAK AWAY PLAN
	FETTERMANN, JOEL
	HERNANDEZ, ARTHUR J
3809	AGUILA, ARMANDO
3816	BGI INC
3830	DEBOARD, SALLY M
3840	VACATION RESORTS INTERNATIONAL
3843	MOLINA, MARCOS A
3845	AMERICANA INN A CAL LTD PART
	AMERICANA VACATION CLUB
	AMERICANA VACATION RESORTS
3848	VIRENE, JOSANNE
3863	PIONEER INN MOTEL
3867	MAQUILAN, MELY
3873	LOMELI, M
3879	ALPINE DENTAL CARE
	TROMBKA JERARD DDS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2005 (Cont'd)

3880	YAGO, ALFONSO
3885	MI PUEBLO
3890	YBANEZ, JOHN G
3893	ARIAS, MIGUEL A
3901	NATIONAL NINE MOTEL
3918	ELIZABETH LODGE
3923	7-ELEVEN INC
3929	PATEL, ANISH R
3930	TRAVELLERS INN SUITES
3935	HAIR & NOW
3970	FORMAN, JAYME

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 2005

700	KELLY, TIMOTHY
710	BUBAR, BARRY G
730	DELGRANDE, RUTH D
740	CARLES, LOUIS J
760	DALTON, DONALD J
	ZEPHYR COVE SPORTFISHING
1984	VETTER, M R
1986	MERCER, WARREN
2014	KENWOOD SILVER COMPANY INC
2040	PHILLIPS-VAN HEUSEN CORP
2060	JOHNSTONES RV
2068	COOMES, RONALD
2074	ADVANCED FAMILY FOOT CARE
2110	AMERIGAS PROPANE LP
2130	TAHOE URGENT CARE
2140	PAINT STORE
2568	ASPEN REALTY
2933	JT ROADRUNNER INC
	ROADRUNNER GENERAL STORE
2950	STEVES TRANSMISSION SERVICE
2971	D G G ASSOCIATES
	MCDONOUGH LAWRENCE J
	TAHOE PARADISE VIDEO
	WASHINGTON MUTUAL HOME LOANS
	YANKS MOTEL
2977	LIRAS SUPERMARKET
2986	DAUM ENTERPRISES INC
3008	ALPACA PETES
3021	19TH HOLE RESTAURANT
3025	ALPINE MEADOW WEDDING CHAPEL
	GIOVACCHINI ENTERPRISES
3030	DYER, MELISSA
3058	LAKE TAHOE HISTORICAL SOCIETY
3071	MAKINEN ARI ENTERPRISES INC
3095	BURNS, SHARON A
	SHARON BURNS DVM
3097	ALTAHOE LIQUOR & WINE COMPANY
3120	BITTMAN, STEWART
3132	EMPEROR WENS PIT STOP
3140	CHRIS CAFE
3141	COFFEE THYME
	GADOMSKI, WALTER
	SOUERS, DON
3151	FRANCIS, PAMELA J
3170	BADGER GROUP LLC
	BARNETT & ASSOCS ACCTNCY CORP
	CHARTER ADVERTISING DESIGN INC
3200	DIVIDED SKY
	MEYERS DOWNTOWN CAFE
3202	HEFFNER MARTY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 2005 (Cont'd)

3208 PRESCOTT ROBERT J
ULTRAMAR INC
3214 CASA, DEL R

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 2000

1507	VELEZ, LUIS
1517	OCCUPANT UNKNOWN,
1531	OCCUPANT UNKNOWN,
1547	WILLIAMS, VICTOR H
1551	WULSTEIN, WELDON W
1555	OCCUPANT UNKNOWN,
1561	NELSON, SYLVIA
1565	GUERRERO, PETE R
1569	BURRELL, ROBERT R
1573	OCCUPANT UNKNOWN,
1579	WOLVERTON, NANCY E
1589	BARNES, TOMMY
1605	NEWPORT, CHUCK
1607	ROMERO, FRANK
1611	BOWMAN, ROBERT
1629	LAWRENCE, WAYNE P
	MURRAY, JACK L
1772	NAPOLITANO, CHRIS
1784	ERWIN, JOSH
3025	COLE HAROLD JR
	COLE, HAL
3060	OCCUPANT UNKNOWN,
3096	OCCUPANT UNKNOWN,
3205	MEBIUS, JOHN J
3229	ERICKSON, TYLER
3231	FIRANZI, JACK H
3326	CULL, TIM
3380	LIEBELT, AUGUST
3574	ZEHRENS LANDSCAPE NURSERY
3575	CSITOS, JAMES
3600	ROBINSON, A
3601	ROBINSON, A
3602	LEINEN, MARK
3609	OCCUPANT UNKNOWN,
3611	LAFAZIA, M F
3614	SULLIVAN, DAN
3628	CLAROS, ROSA
	LARA, NICA
3640	COLIMA, LUIS E
	CRUZ, HECTOR A
	GUTIERREZ, ANSELMO
	MENDEZ, B
	RIVAS, MARIA
	YEPEZ, L
3646	JIMENEZ, SAUL
	VALDEZ, J
3650	ALVAREZ, MARIA K
	BLAHA, I G
	CHAVEZ, JAIME
3715	MORALES, A T

PIONEER TRL 2000 (Cont'd)

3716	AGUILAR, LYDIA
	PADILLA, NOEMI
	RODRIGUEZ, FRANCIS
3735	FAJAYAN, MARCOS F
3739	FAJAYAN, MARCOS F
3746	SORENSENKELLY, ANNA
3763	IKOMA, YOSHI H
3769	MARINO, M J
3773	HINES, DAYNA L
3778	NYE, WILLIAM
3782	BELASCO, TINO N
	VELA, SARA
3783	ALSEREZ, ARMANDO
	JACKSON, RYAN
	SANCHEZ, JOSE M
3790	OCCUPANT UNKNOWN,
3793	OCCUPANT UNKNOWN,
3797	OCCUPANT UNKNOWN,
3809	OCCUPANT UNKNOWN,
3816	ARLEQUIN PRODUCTIONS
	B G I INC
	MARTHAS INCOME TAX SERVICE
	TAMARACK RENTALS & REALTY
3830	WALDVOGEL, JASON
3840	VACATION RESORTS INTL
3845	AMERICANA VACATION CLUB
	AMERICANA VACATION RESORTS
3863	PIONEER INN MOTEL
3867	HAGOPIT, PHILIPE B
	MALOLOT, EMERSON
3870	AGBIGAY, JOANNA
	AQUI, ROGERIO S
	CURIB, F
	FLORES, G
	IBARRA, ROGELIO I
	IBARRA, VILMA
	OCOLAR, ROSITA F
	SAMSON, RAY B
3875	OCCUPANT UNKNOWN,
3879	ALPINE DENTAL CARE
	TROMBKA JERARD DDS
3880	ARRIETA, DIVINE I
	DAYOAN, MANUEL
	IBEA, VICENTE
	YAGO, ALFONSO
3882	OCCUPANT UNKNOWN,
3885	IBEA, VICENTE
3886	OCCUPANT UNKNOWN,
3888	WITHERSPOON, TROY C
3890	YBANEZ, EUGENIO L

PIONEER TRL 2000 (Cont'd)

3893	FEAGLEY, JERRY
	LOPEZ, ARSELIA
3894	LEOS TATTOO
3900	BOBMARK ENTERPRISES LTD
3901	NATIONAL NINE MOTEL
3918	ELIZABETH LODGE
3923	7-ELEVEN INC
3935	HAIR & NOW

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 2000

760	SMITHMIER, MATT
1970	STEVES TRANSMISSION SERVICE
1984	VETTER, M R
1986	MERCER, WARREN
2016	ONEIDA LTD
2026	PFALTZGRAFF CO THE
2034	ANDERSON, JAMES
2040	PHILLIPS-VAN HEUSEN CORP
2058	COOMES, RON
2060	JOHNSTONES RV
2068	COOMES, RON
2074	OCCUPANT UNKNOWN,
2110	AMERIGAS PROPANE LP
2130	MEHRENS HENNING MD
2140	BOWMAN ROBERT
	BOWMAN, ROBERT
2971	D G G ASSOCIATES
	YANKS MOTEL
2986	DAUM ENTERPRISES INC
3008	ALPACA PETES
3021	19TH HOLE
3058	LAKE TAHOE HISTORICAL SOCIETY
3071	MAKINEN ARI ENTERPRISES INC
3131	WILLIAMS SPORTS RENTALS INC
3141	COFFEE THYME

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 1995

1471	REYNOLDS, J B
1507	VELEZ, LUIS A
1527	YAMADA, HARRY M
1551	WILLIAMS, M
1569	BURRELL, ROBERT R
1579	WOLVERTON, NANCY E
1589	BARNES, TOMMY
1629	LAWRENCE, WAYNE P
	MURRAY, JACK L
1772	WINKELMAN, KARL
1794	YOUNG, ROD
3025	COLE HAROLD JR
3096	BAUNHAUSSER, BOB
3187	DOWNEY, DON
3205	MEBIUS, JOHN J
3216	DACAYANAN, ALBERTO I
3326	CULL, TIM
3380	LIEBELT, AUGUST
3574	ZEHRENS LANDSCAPE NURSERY
3584	CANARDO, DON
3609	QUIGG, TIMOTHY M
3611	LAFAZIA, M F
3614	THESENVITZ, IRVIN
3628	FAGAYAN, LORETO
3640	AGUILAR, LOPEZ M
	BARBOSA, MARIA
	CRUZ, ALEX
	CRUZ, HECTOR A
	FLORES, OSCAR
	JIMENEZ, SAUL
	LARA, NICA
	LEMUS, JOSE
	OLVERA, CARLOS
	RENTERIACARDENA, C
	SALINAS, LETICIA
3650	BLAHA, I G
	LAGOC, I T
	MARISCAL, E
	SALVACION, MARIA
3672	CHEATHAM, TONY
	ORBER, MICHAEL A
3716	AGUILAR, LYDIA
	CORTES, T
	DUARTE, ANTONIO M
	GONZALES, LEONCIO
	MOYA, SANTOS J
	RODRIQUEZ, ANTONIO
3733	FERGUSON, CHARLES G
3735	FAJAYAN, MARCOS F
3746	SIGALA, MARIA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 1995 (Cont'd)

3769	MARINO, M J
3773	HINES, LESTER
3778	ZIMMERMANN, EDWARD
3783	COVARRUBIAS, GILBERT
	GONZALEZ, C
	MELINIS, JERRY
	PEREZ, RENE L
	ZEPEDA, RAUL
3816	B G I INC
	TAHOE PROPERTY MANAGEMENT
	TAMARACK RENTALS & REALTY
3845	AMERICANA VACATION CLUB
3863	PIONEER INN MOTEL
3870	CABALONA, MEDION
	FLORES, G
	LA, TORRE P
	LICUDO, F N
	NAGAL, F
3880	IBEA, VICENTE
	INDA, LEONORA
	YAGO, ALFONSO
3888	HATFIELD, RICHARD
3890	LABRADOR, LIGAYA
3893	FEAGLEY, JERRY
	GUERRERO, JOSE F
3894	LUERKEN MATT DDS
3901	NATIONAL NINE MOTEL
	PATEL, JAGDISH
3918	ELIZABETH LODGE PARTNERS
3923	SOUTHLAND CORPORATION
3930	PIONEER TRAIL MOTEL
3935	HAIR & NOW

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

US HIGHWAY 50 1995

2540	LAKE TAHOE TRAVEL STATION
2568	ASPEN REALTY
2970	SUPPLY ONE INC
2986	DAUM ENTERPRISES INC
3008	ALPACA PETES INC
3053	B & C MORTGAGE INC
3071	MAKINEN ARI ENTERPRISES INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 1992

1471	REYNOLDS, J B
1507	VELEZ, LUIS A
1551	WILLIAMS, M
1561	DENNISON, T
1589	BARNES, TOMMY
1629	LAWRENCE, WAYNE P
	MURRAY, JACK L
1772	WINKELMAN, KARL
1794	YOUNG, ROD
3096	BAUNHAUSSER, BOB
3168	MEAGHER, BRIAN
3205	MEBIUS, JOHN J
3216	DACAYANAN, ALBERTO I
3326	CULL, TIM
3380	LIEBELT, AUGUST
3443	STRAHAN, BRUCE L
3575	GRAY, KENNETH E
3584	CANARDO, DON
3611	LAFAZIA, M F
3614	THESENVITZ, IRVIN
3625	SALETRERO, M
3628	ARGEL, V
	ESTRADE, ERVIL
	FAGAYAN, LORETO
	FAJAYAN, MARTIN
3640	BARBOSA, MARIA
	BERTAGNOLLI, RUDOLPH
	CRUZ, HECTOR A
	HERNANDEZ, MARI
	JIMENEZ, RICARDO
	MESA, M H
	REYES, RUBEN
	SALAZAR, JESUS
3646	GONZALEZ, LIVIER R
	LAGOC, I T
	MEDINA, FELIZA M
	SALVACION, G
3672	ORBER, MICHAEL A
3716	GONZALES, LEONCIO
	MOYA, SANTOS J
3735	FAJAYAN, MARCOS F
3746	LAMANGAN, EDGARDO C
3769	ESTRADA, JESUS
	GARZA, O T
	MARINO, M J
3773	AVALOS, CARLOS
	HINES, LESTER
3783	MELINIS, JERRY
	PACKER, ARNOLD
	PEREZ, RENE L

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIONEER TRL 1992 (Cont'd)

3783	RAMOS, JUAN J
	ZAIN, ABADIN U
3789	VEGA, MARIA D
3808	IBEA, VICENTE
3853	DAPIAOEN, JOHNNY
3879	FRIER, JAMES W
3880	INDA, LEONORA
3884	BUGAYONG, M
	BUSACAY, D
	LICUDO, F N
	MALOLOT, JESUS
	OLIVAR, FLORO
	PAGADO, JAIME C
3893	ESCOBEDO, CARLOS
	FEAGLEY, JERRY
	GUILLEN, JOSE
	KELLY, S
	LOPEZ, EUSEBIO
	MARTINEZ, MARIO
	NUNEZ, MARTA
	VENTURA, IRMA M
3901	OLYMPIC MOTEL
	PATEL, JAGDISH
3923	SOUTHLAND CORPORATION

APPENDIX H

ENVIRONMENTAL LIEN AND AUL SEARCH

PIONEER TRAIL
PIONEER TRAIL / US HIGHWAY 50
SOUTH LAKE TAHOE, CA

Inquiry Number: 5990420.7S
MARCH 4, 2020

EDR Environmental Lien and AUL Search

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

PIONEER TRAIL
PIONEER TRAIL / US HIGHWAY 50
SOUTH LAKE TAHOE, CA

RESEARCH SOURCE

Source 1: EL DORADO COUNTY RECORDER'S OFFICE

Source 2: CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Source 3: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PROPERTY INFORMATION

Deed 1

Type of Deed:	NO DEED FOUND 1980 - PRESENT
Title is vested in:	STATE OF CALIFORNIA
Title received from:	NA
Date Executed:	NA
Date Recorded:	NA
Book:	NA
Page:	NA
Volume:	NA
Instrument#:	NA
Docket:	NA
Land Record Comments:	NA
Miscellaneous Comments:	NO DEED IMAGE

Legal Description: PTN NE4 SEC 29 T12N R18E

Current Owner: STATE OF CALIFORNIA

Property Identifiers: UN133954

Comments: NA

EDR Environmental Lien and AUL Search

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If Found:

1st Party:	NA
2nd Party:	NA
Dated:	NA
Recorded:	NA
Book:	NA
Page:	NA
Docket:	NA
Volume:	NA
Instrument #:	NA
Comments:	NA
Miscellaneous:	NA

OTHER ACTIVITY AND USE LIMITATIONS (AULS)

Other AUL's: Found ☐ Not Found ☒

If Found:

1st Party:	NA
2nd Party:	NA
Dated:	NA
Recorded:	NA
Book:	NA
Page:	NA
Docket:	NA
Volume:	NA
Instrument #:	NA
Comments:	NA
Miscellaneous:	NA

EDR Environmental Lien and AUL Search

MISCELLANEOUS

Type of Instrument: NONE IDENTIFIED
First Party:
Second Party:
Date Executed:
Date Recorded:
Instrument #:
Book:
Page:
Comments:

APPENDIX I

PRE-SURVEY QUESTIONNAIRE

8795 Folsom Blvd, Suite 250
Sacramento, California 95826
(916) 388-5655 (tel)
(916) 388-5676 (fax)

Pre-Survey Questionnaire & Disclosure Statement

Please provide written responses to this questionnaire and upon completion fax it to NCE. For those questions, which are not applicable or you do not know the answer, please respond with an "N/A" or "U/K", respectively. If you have any questions, please call NCE or ask the NCE Project Manager at the time of their site visit. If additional pages for response are necessary, please attach hereto and reference same to the appropriate question number. Upon completion, please return by fax to the above number. This document along with you written responses will be included as exhibits within our reports.

Name of Property:	Pioneer Trail/US HWY 50	**NCE Project No.:**	501.30.25
Address:	Intersection of US-50 and Pioneer Trail Meyers, CA	**NCE ESA Project Manager:**	Angela Hueftle
Age of Property:	N/A	**Tax I.D.# (Sec, Lot, Block):**	
No. of Guestrooms:	N/A	**Size of Building(s) (SF):**	N/A
Number of Buildings:	0	**Property Management Co.:**	N/A
Number of Stories:	N/A	**Tel:**	N/A
Ownership Entity:	El Dorado County and Caltrans	**Fax:**	N/A
Borrower's/Owner's Representative:	Donaldo Palaroan	**Duration of Current Management:**	N/A
Tel:	(530) 573-7920	**Prepared and Submitted by:**	
Fax:	(530) 541-7049	**Signature:**	
Site Contact:	N/A	**Date:**	
Tel:	N/A	**Date Sent to Recipient:**	
Fax:	N/A		

A. GENERAL

1. Property Owner/Occupant Information

Owner's Name
County of El Dorado

Owner's Address
2850 Fairlane Court, Placerville, CA 95667

Occupant's Name

Occupant's Address

2. Previous Property Owners / Occupants

Please Provide the names and contact information for any known previous property owners:

Owner/ Name of Occupant	Contact Information	Dates of Ownership

3. Valuation Reduction

Was/is the purchase price of the Subject property significantly Less than the purchase price of comparable properties due to Environmental conditions? Yes □ No □ U/K ☒

If yes, please explain below.

B. PROPERTY DESCRIPTION

1. Land

a. Size of Parcel? Acres

b. Parcel Number (s)

c. Shape of Parcel? □ Rectangular ☒ Irregular □ Other

Please provide a copy of site survey or site plans, if available.

d. Are there any surface waters or wetlands on the site? Yes ☒ No □ U/K □
If "Yes," please provide any information as to the size and location of these areas.

e. Has fill been imported onto the Subject Property? Yes ☒ No □ U/K □

f. Are there currently or has there previously been waste treatment or disposal pits ponds, or lagoons on the site? Yes □ No □ U/K ☒

2. Product Mix _____ N/A

What is the tenant's name and size of their space? Use back of sheet if additional space is required.

Tenant Name	Area (SF):

3. Utilities

a. Providers

Who provides the following utilities to the subject?

Utility	Provider
Water:	South Tahoe PUD
Sanitary Sewer:	South Tahoe PUD
Storm Drainage:	Caltrans
Electric:	Liberty Utilities
Gas/Oil:	N/A
Steam:	N/A
Chilled Water:	N/A

Are there any problems or tenant complaints regarding the site's drinking water? Yes □ No □ U/K ☒

To the best of your knowledge, are there any problems with the underground utilities at the Subject, such as leaks, periodic breaks, etc? If yes, please list the problem areas. Yes □ No □ U/K ☒

b. Septic Systems

Was or is there a septic system on the property? Yes □ No □ U/K ☒

If so, is the septic system currently in use? Yes □ No □

If "Yes", any problems (explain below)? Yes □ No □

What is the date of the last septic tank pumping/cleaning?

c. Stormwater Management and Floor Drains

Is there an underground stormwater retention or detention system? Yes □ No ☒

If "Yes", please provide any information as to its capacity, location, construction and whether it functions as a sediment control basin.

Where is the site's stormwater discharged to? Runoff into roadside ditches, drainage inlets and adjacent meadow to the west of the site

Are there any floor drains on the site? Yes □ No ☒ U/K □
If so, where do they discharge to?

d. Wells

Is there a well on the site? Yes □ No □ U/K ☒

If so, what type of well is it?

Drinking Water	□	Irrigation	□
Monitoring	□	Dry Well	□

Have contaminants in excess of governmental guidelines been identified in the water? Yes □ No □

4. Roofing System – N/A

To the best of your knowledge, does the system contain asbestos? Yes □ No □ U/K ☒

When was the roofing system installed? Yes □ No □ U/K □

Was the old roofing material serviced? Yes □ No □ U/K □

5. Building Conditions – N/A

To the best of your knowledge, does the building have any of the following conditions? If so, describe the type and location of the problem and if any repairs or replacements been made within the last three(3) years to alleviate same?

a.	Roof leakage?	Yes □	No □	
b.	Exterior façade (Including penetrations and windows) Water/moisture infiltration problems?	Yes □	No □	
c.	Exterior Insulation Finish System (“EIFS”) water/moisture infiltration?	Yes □	No □	
d.	Structural problems such as excessive floor framing deflection, sidewall or foundation cracks?	Yes □	No □	
e.	Cellar/Basement water/moisture infiltration?	Yes □	No □	
f.	Heating capacity, distribution or equipment deficiencies?	Yes □	No □	
g.	Domestic hot water capacity, distribution or equipment deficiencies?	Yes □	No □	
h.	Air conditioning capacity, distribution or equipment deficiencies?	Yes □	No □	
i.	Inadequate domestic water pressure, disclosed potable water, or drain line problems?	Yes □	No □	
j.	Presence of phenolic roof insulation?	Yes □	No □	U/K □
k.	Galvanized iron, lead or brass water supply piping?	Yes □	No □	U/K □

6. Work Orders

What are the 10 most common work orders related to the Subject?

7. Flooding?

Has any portion of the site incurred flooding? Yes □ No ☒

If "Yes", please explain and identify location.

Is any portion of the site located in a flood plain? Yes □ No ☒

8. Capital Improvements

Have there been any additions made to the property? Yes □ No ☒

If "Yes", please explain and identify location and the date of the improvements.

9. Tenant Responsibilities – N/A

Please identify the following components or systems where tenants are solely responsible for repair, servicing/maintenance, and replacement under the terms of their lease:

a.	Domestic Hot Water Heaters	□
b.	Rooftop Air Conditioning Units	□
c.	Air-cooled DX Condensers/Compressors	□
d.	Kitchen Equipment	□
e.	Ballroom/Meeting Room Furnishings	□
f.	Other _____	□

C. REGULATORY

1. Has the property ever been subject to any environmental enforcement action by the federal, state or local government? Yes □ No □ U/K ☒
   If so, please explain.

2. Do you have any knowledge of pending or contemplated environmental actions against the Subject or neighborhood properties Yes □ No □ U/K ☒
   If so, please state the circumstances.

3. Has there been any citizen or tenant complaints regarding environmental or health matters in connection with Subject? Yes □ No □ U/K ☒

   If so, please explain.

4. Are you in receipt of any notices of code violations from the municipality's building department, zoning and/or planning department, fire department, or health department? Yes □ No ☒

   If "Yes", please disclose the nature of the violations, attach copies of the violations to this statement and explain what actions are being undertaken to comply.

5. Are you aware of notice from any government agency regarding potential condemnation or right-of-way widening? Yes □ No ☒

   If "Yes", please explain:

6. Are you aware of any local, state, or federal environmental permits issued for the site or site operation?

   If "Yes", please explain: Yes □ No ☒

D. SITE HISTORY and PREVIOUS REPORTS

1. Were there any buildings or other improvements on the property prior to the existing improvements? Yes ☒ No □ U/K □
   If so, what were they? Various roadway improvements, including, but not limited to: drainage, paving roadway striping, roadway signing, electrical/signal upgrades, etc.

2. Is or has the property been used for industrial or agricultural purposes, or as a gasoline station, auto repair, dry cleaner, junkyard, or landfill? Yes □ No □ U/K ☒
   If so, please describe.

3. Site Operations

To the best of your knowledge, do any of the following operations take place on the Subject or have ever taken place on the Subject:

- Dry Cleaning: Yes □ No ☒
- Petroleum Storage/Sales: Yes □ No ☒
- Photo or X-Ray Finishing: Yes □ No ☒
- Electronic Equipment Assembly or Manufacturing: Yes □ No ☒
- Paint or Solvent Storage: Yes □ No ☒
- Chemical Manufacturing: Yes □ No ☒
- Automobile Storage, Repair, or Disposal: Yes □ No ☒
- Agriculture: Yes □ No ☒

4. Previous Studies/Documentation

a. **Environmental Reports**

Do you have any knowledge of previously prepared Environmental Site Assessment Reports, asbestos surveys, lead-based paint studies or testing (soil, groundwater, tank tightness testing, lead-based paint testing, asbestos testing, indoor air quality, mold (bacteria and fungi testing), etc.) conducted on the site? If so, please either provide copies of the reports or list the title, date, preparer and recipient of such report(s) below:

□ I have no knowledge of any environmental related studies or reports prepared on the Subject

b. Title Reports and Engineering/Architectural Drawings

Are you in possession of a title report, site drawings, soils reports or geotechnical investigations, building drawings and specifications and/or a survey for the site? Yes ☒ No □

If so, please provide copies of same.

Copy of Exploration Summary and as-builts provided. Topographic survey for the site also exists. A copy of the El Doradoy 50, Segment 1 – Johnson Pass Road to Incline Road Water Quality Improvements Project was also provided.

Please provide all available environmental information from yours or your Client's records including, but not limited to, documentation in connecting with any pending or threatened public or private proceedings or litigation with respect to environmental liability, environmental permits and permit applications, underground and aboveground tank registration and information (including removal and testing of such tanks), environmental reports, asbestos, lead-based paint or indoor air quality studies, sill information and compliance information and programs.

c. Property Condition Reports

To the best of your knowledge, has the building(s), any portion thereof, been subject to a property condition survey during the last three (3) years to opine on the subject's physical condition?

If "Yes", please provide a copy. Yes □ No ☒

E. SURROUNDING PROPERTIES

1. Has any adjoining properties been used for industrial purposes, or as a gasoline station, auto repair shop, junkyard, dry cleaner or landfill? If so, please explain. Yes ☒ No □ U/K □

2. Are you aware of any contamination conditions on adjoining or nearby properties? Yes □ No □ U/K ☒

3. Are you aware of any active or former waste treatment or disposal pits, ponds, or lagoons on adjacent or nearby sites? Yes □ No □ U/K ☒

F. ASBESTOS

1. Do you have knowledge of any materials or substances on the site that are known or suspected to contain asbestos? Yes □ No ☒ U/K □

   If so, what materials and where are they located?

2. Has an inspection for asbestos ever been performed on the Subject? Yes □ No □ U/K ☒

3. Has asbestos been removed from the Subject? Yes □ No □ U/K ☒

4. Does the building have:

   - Spray-on or troweled-on fireproofing, insulation or finishes? Yes □ No ☒ U/K □
   - Insulation on piping, boilers, tanks, chillers, or other mechanical equipment? Yes □ No ☒ U/K □
   - Transite used in cooling towers, exterior walls, ceilings fascia panels, etc? Yes □ No ☒ U/K □
   - Resilient floor tile? Yes □ No ☒ U/K □

- Suspended acoustical ceiling tiles? Yes □ No ☒ U/K □
- A built-up or rolled roofing system? Yes □ No ☒ U/K □

G. PCBs

1. Are there any on-site electrical transformers or electrical switchgear? Yes ☒ No □ U/K □
   If so, do they contain PCBs? Yes ☒ No □ U/K □

   Who owns the transformers and where are they located? Caltrans

2. Did any on-site transformers formerly contain PCBs, but later had the dielectric fluid replaced? Yes □ No □ U/K ☒

4. Is there any hydraulic equipment such as elevators or automotive lifts on-site? Yes □ No ☒ U/K □

   If so, who services the equipment?

   Are you aware of any hydraulic fluid leaks in connection with the hydraulic equipment? Yes □ No □ U/K ☒

H. STORAGE TANKS

1. Are there any (active or inactive) Underground Storage Tanks ("UST") or Aboveground Storage Tanks ("AST") on the site? Yes □ No □ U/K ☒

   If so, please fill out the following schedule:

Active or Inactive Tanks

Location of Tank	Size of Tank (Gallons)	AST or UST	Tank Contents	Ag of Tank (Years)	Does the Tank Have Corrosion Protection? (Yes/No)	Does the Tank Have Leak Detection? (Yes/No)	Is the Tank In-Use? (Yes/No)

Have any of the tanks been tightness tested? Yes □ No □ U/K ☒

2. Do you have any knowledge of tanks that were either removed or closed in-place at the site? Yes □ No □ U/K ☒

   If so, please fill out the following schedule:

Tanks Removed or Closed In-Place

Location of Former Tank	Size of Tank (Gallons)	AST or UST	Tank Contents	Tank Removal Company	Year Tank Was Removed

I. LEAD

1.	Are you aware of any lead-based paint ("LBP") applications on the site?	Yes □ No ☒ U/K □
2.	Has LBP testing been conducted?	Yes □ No □ U/K ☒
3.	Have there been any reported incidences of children with elevated blood lead levels residing at the site?	Yes □ No ☒ U/K □
4.	Are there any children younger than 7 years old residing at the site or frequenting the site on a daily basis?	Yes □ No ☒ U/K □
5.	Have any LBP abatements been conducted?	Yes □ No □ U/K ☒
6.	Has the water been tested for lead? If so, please provide a copy of the results	Yes □ No □ U/K ☒

J. HAZARDOUS MATERIALS

1.	Are hazardous materials or chemicals stored or used on-site?	Yes □ No □ U/K ☒
2.	Are there any hazardous or medical waste or fluids or used that employ an outside service for their periodic supply and removal?	Yes □ No □ U/K ☒

If so, please provide the name, address, & telephone number of the disposal company and the facility generating the waste.

K. INDOOR AIR QUALITY – N/A

1.	Have strong mold odors and/or mold straining been observed on-site?	Yes □ No □ U/K ☒
2.	Have there been any employee or tenant reports of symptoms consistent with mold contaminations or other indoor air quality concerns?	Yes □ No □ U/K ☒
3.	Are you aware of elevated radon gas concentrations on-site?	Yes □ No □ U/K ☒

L. AAI USER QUESTIONNAIRE

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments"), the following information must be provided (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

1. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? Yes □ No □ U/K ☒

2. Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, slate or local law? Yes □ No □ U/K ☒

3. Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of chemicals and processes used by this type of business? Yes □ No ☒ U/K □

4. Does/Did the purchase price paid for this property reasonably reflect the fair market value of the property? Yes □ No □ U/K ☒

   If you conclude that there is a difference, have you considered whether the lower purchase price is because of contamination is known or believed to be present at the property? Yes □ No □ U/K ☒

5. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example:

   (a.) Do you know the past uses of the property? Yes ☒ No □ U/K □

   (b.) Do you know of specific chemicals that are present or once were present at the property? Yes □ No ☒ U/K □

   (c.) Do you know of spills or other chemical releases that have taken place at the property? Yes □ No □ U/K ☒

   (d.) Do you know of any environmental cleanups that have taken place at the property? Yes □ No □ U/K ☒

6. Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? Yes □ No ☒ U/K □

Document Request List

The following documents are being requested to assist NCE with the preparation of our Property Condition Assessment. Please provide the available documents to the NCE Project Manager prior to or during the site visit.

Plans, Specs and Miscellaneous Documents:

- Geotechnical/Soils Report
- As-Built Plans and Specifications
- Architect's Certificate of Substantial Completion

Warranty Documents:

- Roof System
- Sidewall Systems
- Plaza/Terrace Systems
- Parking Garage/Deck Coating Systems

Municipal Department Documents:

- Certificate of Occupancy, Completion or Compliance
- Schedule of Building Code Violations
- Elevator, Boiler, Electrical, or other Inspection Certificate(s)

Promotional/Leasing Information:

- Copy of the Most Recent Appraisal
- Promotional Leasing Literature
- Tenant SFR Schedule
- Schedule of Floor Area Measurements Gross, Usable and Rentable SF
- Location Map

Building Maintenance History:

- Tenant Complaint Log
- Names and Telephone Numbers of Service Firms:
  - Facade Repairs/Restoration
  - Roofing
  - Plumbing
  - Water Tower
  - Heating
  - Boiler Water Treatment
  - Air Conditioning
  - Cooling Tower
  - Electrical
  - Sprinkler/Standpipe System
  - Life/Safety Alarm System
  - Elevator
- HVAC System Operating Reports such as: Eddy Current, Oil Analysis and Vibration Analysis
- Schedule of Capital Expenditures for Previous Five (5) Years.

Miscellaneous Studies:

- Roof Condition Survey
- Previously Prepared Replacement Reserve Studies
- ADA Survey & Compliance Report
- Sprinkler System/Standpipe Survey Prepared by Insurance Company

APPENDIX J

CALTRANS ENCROACHMENT PERMIT

Reed

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
NOTICE OF COMPLETION
TR-0128 (REV 06/01) CT #7541-5529-1

RECEIVED JUL 07 2020

0320NSV0585
PERMIT NO.
ED 50 71.3-71.65
Co. Rte P.M.

mit No.
320-NSV0585
t/Co/Rte/PM
-ED-50 PM 71.3 to ED-50 PM 71.65
e
ne 30, 2020

Paid	Deposit
Exempt	$ N/A
ormance Bond Amount (1)	Payment Bond Amount (2)
N/A	$ N/A

d Company

d Number (1)	Bond Number (2)

Dear Sir or Madam:

All work authorized by the above-numbered permit was completed on DATE

SIGNATURE OF PERMITTEE

FM 92 1546 M

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Attn: Kiri Ando
818-233-2517

, PERMITTEE

and subject to the following, PERMISSION IS HEREBY GRANTED to:

Perform soil sampling in unpaved areas down to approximately 4 feet below grade using a hand-powered auger for the analysis of aerially deposited lead along US Highway 50 at Pioneer Trail in the city of South Lake Tahoe as shown in the attached plans received on May 19, 2020. In addition to the General and Special Provisions, the following conditions apply:

1. Permittee must arrange the onsite pre-construction meeting with the Caltrans representative a minimum of two (2) weeks prior to the start of work to discuss scope of work, schedule, and Traffic Control Plans (TCP).

----------Continued on Page 2----------

THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NOT TRANSFER WITH THE PROPERTY TO A NEW OWNER.

The following attachments are also included as part of this permit *(Check applicable)*:

☒ Yes	☐ No	General Provisions
☐ Yes	☒ No	Utility Maintenance Provisions
☐ Yes	☒ No	Special Provisions
☐ Yes	☒ No	A Cal-OSHA permit, if required: Permit No. _____
☐ Yes	☒ No	As-Built Plans Submittal Route Slip for Locally Advertised Projects
☐ Yes	☒ No	Storm Water Pollution Protection Plan

In addition to fee, the permittee will be billed actual costs for:

☐ Yes	☒ No	Review
☐ Yes	☒ No	Inspection
☒ Yes		Field work

(If any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before January 1, 2021

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized. No project work shall be commenced until all other necessary permits and environmental clearances have been obtained

Al Reed, Permit Inspector

cc: Darrell Taylor, Nevada City Maint. Station

APPROVED:

AMARJEET BENIPAL, District Director

BY:

HIKMAT BSAIBESS, District Permit Engineer

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FM91 1436

RECEIVED JUL 07 2020

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
ENCROACHMENT PERMIT
TR-0120 (REV 6/2012)

Permit No.	
0320-NSV0585	
Dist/Co/Rte/PM	
03-ED-50 PM 71.3 to ED-50 PM 71.65	
Date	
June 30, 2020	
Fee Paid	Deposit
$ Exempt	$ N/A
Performance Bond Amount (1)	Payment Bond Amount (2)
$ N/A	$ N/A
Bond Company	
Bond Number (1)	Bond Number (2)

In compliance with (Check one):

☒ Your application of May 28, 2020

☐ Utility Notice No. _____ of _____

☐ Agreement No. _____ of _____

☐ R/W Contract No. _____ of _____

TO: El Dorado County Department of Transportation
c/o Kiri Ando
NCE
8795 Folsom Blvd. Suite 250
Sacramento CA. 95826
Attn: Kiri Ando
818-233-2517

, PERMITTEE

and subject to the following, PERMISSION IS HEREBY GRANTED to:

Perform soil sampling in unpaved areas down to approximately 4 feet below grade using a hand-powered auger for the analysis of aerially deposited lead along US Highway 50 at Pioneer Trail in the city of South Lake Tahoe as shown in the attached plans received on May 19, 2020. In addition to the General and Special Provisions, the following conditions apply:

1. Permittee must arrange the onsite pre-construction meeting with the Caltrans representative a minimum of two (2) weeks prior to the start of work to discuss scope of work, schedule, and Traffic Control Plans (TCP).

----------Continued on Page 2----------

THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NOT TRANSFER WITH THE PROPERTY TO A NEW OWNER.

The following attachments are also included as part of this permit *(Check applicable)*:

☒ Yes	☐ No	General Provisions
☐ Yes	☒ No	Utility Maintenance Provisions
☐ Yes	☒ No	Special Provisions
☐ Yes	☒ No	A Cal-OSHA permit, if required: Permit No. _____
☐ Yes	☒ No	As-Built Plans Submittal Route Slip for Locally Advertised Projects
☐ Yes	☒ No	Storm Water Pollution Protection Plan

In addition to fee, the permittee will be billed actual costs for:

☐ Yes	☒ No	Review
☐ Yes	☒ No	Inspection
☒ Yes		Field work

(If any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before January 1, 2021

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.
No project work shall be commenced until all other necessary permits and environmental clearances have been obtained

Al Reed, Permit Inspector

cc: Darrell Taylor, Nevada City Maint. Station

APPROVED:

AMARJEET BENIPAL, District Director

BY:

HIKMAT BSAIBESS, District Permit Engineer

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FM91 1436

PERMISSIONS Conditions Continued:

2. A qualified applicant-supplied biologist must perform surveys for special status plant species within proposed project limits of unpaved shoulder. If special status plant species are found, they must be restricted from access by the use of Environmentally Sensitive Area high visibility fencing for the entirety of the project and removed directly following the end of work activities to avoid impacting the plants.

3. Caltrans is not member of USA (Underground Service Alert). It is the responsibility of the permittee to locate and protect all Caltrans' facilities, including, but not limited to, traffic loops within the project limits. Your attention is directed to Provision #31 for restoration and repair of any damages to Caltrans' facilities.

4. Permittee must reuse the soil within the work limits in the immediate area from which it was excavated. If any excess soil is generated, it becomes the property of the permittee. Permittee must transport all excess soil outside of Caltrans' right-of-way, and dispose of it in accordance with all applicable environmental laws and regulations.

5. If the work for this permit is to be performed by other than the permittee's forces, the following requirement is in full force and effect: Notwithstanding General Provision #4, your contractor is required to apply for and obtain an encroachment permit (double permit) prior to starting work. A deposit of $492.00 is required at the time of application.

The Caltrans representative's contact information is:
Al Reed - Cell: (530) 755-6688, Email: albert.l.reed@dot.ca.gov

STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
ENCROACHMENT PERMIT GENERAL PROVISIONS
TR-0045 (REV. 01/2020)

1. **AUTHORITY:** The California Department of Transportation ("Department") has authority to issue encroachment permits under Division 1, Chapter 3, Article 1, Sections 660 through 734 of the Streets and Highways Code.
2. **REVOCATION:** Encroachment permits are revocable on five (5) business days' notice unless otherwise stated on the permit and except as provided by law for public corporations, franchise holders, and utilities. Notwithstanding the foregoing, in an emergency situation as determined by the Department, an encroachment permit may be revoked immediately. These General Provisions and any applicable Special Provisions are subject to modification or abrogation by the Department at any time. Permittees' joint use agreements, franchise rights, reserved rights or any other agreements for operating purposes in State of California ("State") highway right-of-way may be exceptions to this revocation.
3. **DENIAL FOR NONPAYMENT OF FEES:** Failure to pay encroachment permit fees when due may result in rejection of future applications and denial of encroachment permits.
4. **ASSIGNMENT:** This encroachment permit allows only the Permittee or Permittee's authorized agent to work within or encroach upon the State Highway System, and the Permittee may not assign this permit.
5. **ACCEPTANCE OF PROVISIONS:** Permittee understands and agrees to accept and comply with these General Provisions, the Special Provisions, any and all terms and/or conditions contained in or incorporated into the encroachment permit, and all attachments to the encroachment permit (collectively "the Permit Conditions"), for any encroachment, work, and/or activity to be performed under this encroachment permit and/or under color of authority of this encroachment permit. Permittee understands and agrees the Permit Conditions are applicable to and enforceable against Permittee as long as the encroachment remains in, under, or over any part of the State Highway System.
6. **BEGINNING OF WORK:** When traffic is not impacted (see General Provision Number 35), the Permittee must notify the Department's representative two (2) business days before starting permitted work. Permittee must notify the Department's representative if the work is to be interrupted for a period of five (5) business days or more, unless otherwise agreed upon. All work must be performed on weekdays during regular work hours, excluding holidays, unless otherwise specified in this encroachment permit.
7. **STANDARDS OF CONSTRUCTION:** All work performed within State highway right-of-way must conform to all applicable Departmental construction standards including but not limited to: Standard Specifications, Standard Plans, Project Development Procedures Manual, Highway Design Manual and Special Provisions.

   Other than as expressly provided by these General Provisions, the Special Provisions, the Standard Specifications, Standard Plans, and other applicable Departmental standards, nothing in these General Provisions is intended to give any third party any legal or equitable right, remedy, or claim with respect to these General Provisions or any provision herein. These General Provisions are for the sole and exclusive benefit of the Permittee and the Department.

   Where reference is made in such standards to "Contractor" and "Engineer," these are amended to be read as "Permittee" and "Department's representative," respectively, for purposes of this encroachment permit.
8. **PLAN CHANGES:** Deviations from plans, specifications, and/or the Permit Conditions as defined in General Provision Number 5 are not allowed without prior approval from the Department's representative.
9. **INSPECTION AND APPROVAL:** All work is subject to monitoring and inspection. Upon completion of work, Permittee must request a final inspection for acceptance and approval by the Department. The local public agency Permittee must not give final construction approval to its contractor until final acceptance and approval by the Department is obtained.
10. **PERMIT AT WORKSITE:** Permittee must keep the permit package or a copy thereof at the work site at all times and must show it upon request to any Department representative or law enforcement officer. If the permit package, or a copy thereof, is not kept and made available at the work site at all times, the work must be suspended.
11. **CONFLICTING ENCROACHMENTS:** Permittee must yield start of work to ongoing, prior authorized work adjacent to or within the limits of the Permittee's project site. When existing encroachments conflict with Permittee's work, the Permittee must bear all cost for rearrangements (e.g., relocation, alteration, removal, etc.).
12. **PERMITS FROM OTHER AGENCIES:** This encroachment permit is invalidated if the Permittee has not obtained all permits necessary and required by law, including but not limited to permits from the California Public Utilities Commission (CPUC), California Occupational Safety and Health Administration (Cal-OSHA), or any other public agency having jurisdiction. Permittee warrants all such permits have been obtained before beginning work under this encroachment permit.
13. **PEDESTRIAN AND BICYCLIST SAFETY:** A safe minimum continuous passageway of four (4) feet must be maintained through the work area at existing pedestrian or bicycle facilities. At no time must pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where safe alternate passageways cannot be provided, appropriate signs and barricades must be installed at the limits of construction and in advance of the limits of construction at the nearest

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crosswalk or intersection to detour pedestrians to facilities across the street. Attention is directed to Section 7-1.04, Public Safety, of the Department's Standard Specifications.

14. **PUBLIC TRAFFIC CONTROL:** As required by law, the Permittee must provide traffic control protection, warning signs, lights, safety devices, etc., and take all other measures necessary for the traveling public's safety. While providing traffic control, the needs of all road users, including but not limited to motorists, bicyclists and pedestrians, including persons with disabilities in accordance with the Americans with Disabilities Act, must be an essential part of the work activity.
    Lane and/or shoulder closures must comply with the Department's Standard Specifications and Standard Plans for traffic control systems, and with the applicable Special Provisions. Where issues are not addressed in the Standard Specifications, Standard Plans, and/or Special Provisions, the California Manual on Uniform Traffic Control Devices (Part 6, Temporary Traffic Control) must be followed.
15. **MINIMUM INTERFERENCE WITH TRAFFIC:** Permittee must plan and conduct work so as to create the least possible inconvenience to the traveling public, such that traffic is not unreasonably delayed.
16. **STORAGE OF EQUIPMENT AND MATERIALS:** The storage of equipment or materials is not allowed within State highway right-of-way, unless specified within the Special Provisions of this encroachment permit. If encroachment permit Special Provisions allow for the storage of equipment or materials within the State highway right-of-way, the equipment and material storage must also comply with Section 7-1.04, Public Safety, of the Department's Standard Specifications.
17. **CARE OF DRAINAGE:** Permittee must provide alternate drainage for any work interfering with an existing drainage facility in compliance with the Department's Standard Specifications, Standard Plans, and/or as directed by the Department's representative.
18. **RESTORATION AND REPAIRS IN STATE HIGHWAY RIGHT-OF-WAY:** Permittee is responsible for restoration and repair of State highway right-of-way resulting from permitted work (Streets and Highways Code, section 670 et seq.).
19. **STATE HIGHWAY RIGHT-OF-WAY CLEAN UP:** Upon completion of work, Permittee must remove and dispose of all scraps, refuse, brush, timber, materials, etc. off the State highway right-of-way. The aesthetics of the highway must be as it was before work started or better.
20. **COST OF WORK:** Unless stated otherwise in the encroachment permit or a separate written agreement with the Department, the Permittee must bear all costs incurred for work within the State highway right-of-way and waives all claims for indemnification or contribution from the State, the Department, and from the Directors, officers, and employees of the State and/or the Department.
21. **ACTUAL COST BILLING:** When specified in the permit, the Department will bill the Permittee actual costs at the currently set Standard Hourly Rate for encroachment permits.
22. **AS-BUILT PLANS:** When required, Permittee must submit one (1) set of folded as-built plans within thirty (30) calendar days after completion and acceptance of work in compliance with requirements listed as follows:
    a) Upon completion of the work provided herein, the Permittee must submit a paper set of As-Built plans to the Department's representative.
    b) All changes in the work will be shown on the plans, as issued with the permit, including changes approved by Encroachment Permit Rider.
    c) The plans are to be prominently stamped or otherwise noted "AS-BUILT" by the Permittee's representative who was responsible for overseeing the work. Any original plan that was approved with a Department stamp, or by signature of the Department's representative, must be used for producing the As-Built plans.
    d) If construction plans include signing or striping, the dates of signing or striping removal, relocation, or installation must be shown on the As-Built plans when required as a condition of the encroachment permit. When the construction plans show signing and striping for staged construction on separate sheets, the sheet for each stage must show the removal, relocation, and installation dates of the appropriate staged striping and signing.
    e) As-Built plans must contain the Encroachment Permit Number, County, Route, and Post Mile on each sheet.
    f) The As-Built Plans must not include a disclaimer statement of any kind that differs from the obligations and protections provided by sections 6735 through 6735.6 of the California Business and Professions Code. Such statements constitute non-compliance with Encroachment Permit requirements and may result in the Department retaining Performance Bonds or deposits until proper plans are submitted. Failure to comply may also result in denial of future encroachment permits or a provision requiring a public agency to supply additional bonding.
23. **PERMITS FOR RECORD PURPOSES ONLY:** When work in the State highway right-of-way is within an area under a Joint Use Agreement (JUA) or a Consent to Common Use Agreement (CCUA), a fee exempt encroachment permit is issued to the Permittee for the purpose of providing a notice and record of work. The Permittee's prior rights must be preserved without the intention of creating new or different rights or obligations. "Notice and Record Purposes Only" must be stamped across the face of the encroachment permit.
24. **BONDING:** The Permittee must file bond(s), in advance, in the amount(s) set by the Department and using forms acceptable to the Department. The bonds must name the

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Department as obligee. Failure to maintain bond(s) in full force and effect will result in the Department stopping all work under this encroachment permit and possibly revoking other encroachment permit(s). Bonds are not required of public corporations or privately-owned utilities unless Permittee failed to comply with the provisions and/or conditions of a prior encroachment permit. The surety company is responsible for any latent defects as provided in California Code of Civil Procedure section 337.15. A local public agency Permittee also must comply with the following requirements:

a) In recognition that project construction work done on State property will not be directly funded and paid by State, for the purpose of protecting stop notice claimants and the interests of State relative to successful project completion, the local public agency Permittee agrees to require the construction contractor to furnish both a payment and performance bond in the local public agency's name with both bonds complying with the requirements set forth in Section 3-1.05 Contract Bonds of the Department's Standard Specifications before performing any project construction work.

b) The local public agency Permittee must defend, indemnify, and hold harmless the State and the Department, and the Directors, officers, and employees of the State and/or Department, from all project construction related claims by contractors, subcontractors, and suppliers, and from all stop notice and/or mechanic's lien claimants. The local public agency also agrees to remedy, in a timely manner and to the Department's satisfaction, any latent defects occurring as a result of the project construction work.

25. **FUTURE MOVING OF INSTALLATIONS:** Permittee understands and agrees to relocate a permitted installation upon notice by the Department. Unless under prior property right or agreement, the Permittee must comply with said notice at the Permittee's sole expense.

26. **ENVIRONMENTAL:**

a) ARCHAEOLOGICAL/HISTORICAL: If any archaeological or historical resources are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified archaeologist who must evaluate the site at Permittee's expense, and make recommendations to the Department's representative regarding the continuance of work.

b) HAZARDOUS MATERIALS: If any hazardous waste or materials (such as underground storage tanks, asbestos pipes, contaminated soil, etc.) are identified or encountered in the work vicinity, the Permittee must immediately stop work, notify the Department's representative, retain a qualified hazardous waste/material specialist who must evaluate the site at Permittee's expense, and make recommendations to the Department's representative regarding the continuance of work.

Attention is directed to potential aerially deposited lead (ADL) presence in unpaved areas along highways. It is the Permittee's responsibility to take all appropriate measures to protect workers in conformance with California Code of Regulations Title 8, Section 1532.1, "Lead," and with Cal-OSHA Construction Safety Orders, and to ensure roadway soil management is in compliance with Department of Toxic Substances Control (DTSC) requirements.

27. **PREVAILING WAGES:** Work performed by or under an encroachment permit may require Permittee's contractors and subcontractors to pay appropriate prevailing wages as set by the California Department of Industrial Relations. Inquiries or requests for interpretations relative to enforcement of prevailing wage requirements must be directed to the California Department of Industrial Relations.

28. **LIABILITY, DEFENSE, AND INDEMNITY:** The Permittee agrees to indemnify and save harmless the State, the Department, and the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind, and description, including but not limited to those brought for or on account of property damage, invasion of privacy, violation or deprivation of a right under a state or federal law, environmental damage or penalty, or injury to or death of any person including but not limited to members of the public, the Permittee, persons employed by the Permittee, and/or persons acting on behalf of the Permittee, arising out of or in connection with: (a) the issuance and/or use of this encroachment permit; and/or (b) the encroachment, work, and/or activity conducted pursuant to this encroachment permit, or under color of authority of this encroachment permit but not in full compliance with the Permit Conditions as defined in General Provision Number 5 ("Unauthorized Work or Activity"); and/or (c) the installation, placement, design, existence, operation, and/or maintenance of the encroachment, work, and/or activity; and/or (d) the failure by the Permittee or anyone acting on behalf of the Permittee to perform the Permittee's obligations under any part of the Permit Conditions as defined in General Provision Number 5, in respect to maintenance or any other obligation; and/or (e) any change to the Department's property or adjacent property, including but not limited to the features or conditions of either of them, made by the Permittee or anyone acting on behalf of the Permittee; and/or (f) a defect or obstruction related to or caused by the encroachment, work, and/or activity whether conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constituting Unauthorized Work or Activity, or from any cause whatsoever. The duty

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of the Permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code.

It is the intent of the parties that except as prohibited by law, the Permittee will defend, indemnify, and hold harmless as set forth in this General Provision Number 28 regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of: the State; the Department; the Directors, officers, employees, agents and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors; the Permittee; persons employed by the Permittee; and/or persons acting on behalf of the Permittee.

The Permittee waives any and all rights to any type of expressed or implied indemnity from or against the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors.

The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the encroachment, work, and/or activity whether conducted pursuant to this encroachment permit or constituting Unauthorized Work or Activity, and further agrees to defend, indemnify, and save harmless the State, the Department, and the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, penalties, liability, suits, or actions of every name, kind, and description arising out of or by virtue of the Americans with Disabilities Act.

The Permittee understands and agrees the Directors, officers, employees, agents, and/or contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, are not personally responsible for any liability arising from or by virtue of this encroachment permit.

For the purpose of this General Provision Number 28 and all paragraphs herein, "contractors of the State and/or of the Department" includes contractors and their subcontractors under contract to the State and/or the Department.

This General Provision Number 28 and all paragraphs herein take effect immediately upon issuance of this encroachment permit, and apply before, during, and after the encroachment, work, and/or activity contemplated under this encroachment permit, whether such work is in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, except as otherwise provided by California law. The Permittee's obligations to defend, indemnify, and save harmless under this General Provision Number 28 take effect immediately upon issuance of this encroachment permit and have no expiration date, including but not limited to situations in which this encroachment permit expires or is revoked, the work or activity performed under this encroachment permit is accepted or not accepted by the Department, the encroachment, work, and/or activity is conducted in compliance with the Permit Conditions as defined in General Provision Number 5 or constitutes Unauthorized Work or Activity, and/or no work or activity is undertaken by the Permittee or by others on the Permittee's behalf.

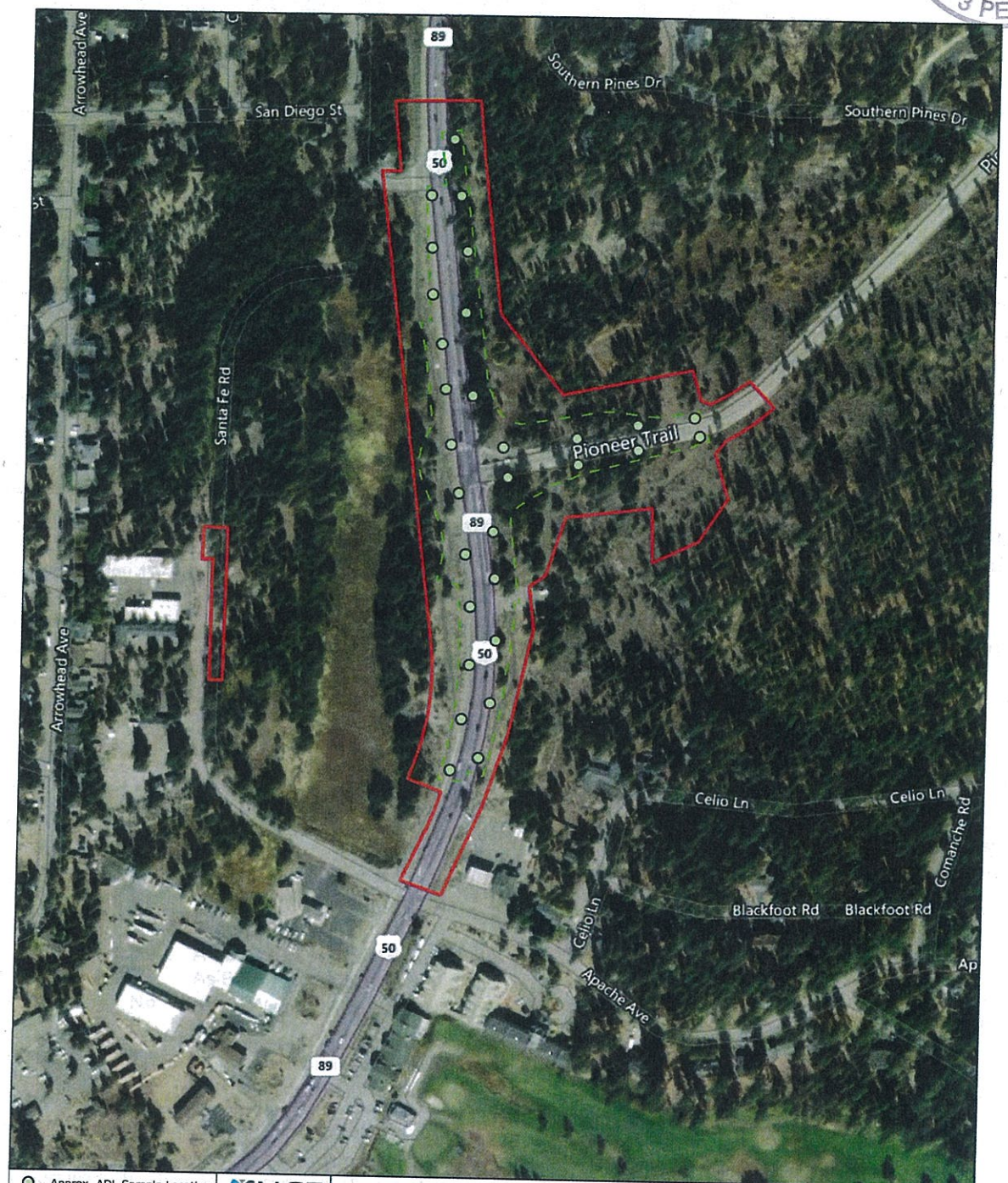
29. **NO PRECEDENT ESTABLISHED:** This encroachment permit is issued with the understanding that it does not establish a precedent.
30. **FEDERAL CIVIL RIGHTS REQUIREMENTS FOR PUBLIC ACCOMMODATION:**
    a) As part of the consideration for being issued this encroachment permit, the Permittee, on behalf of Permittee and on behalf of Permittee's personal representatives, successors in interest, and assigns, does hereby covenant and agree that:
        i) No person on the grounds of race, color, or national origin may be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
        ii) That in connection with the construction of any improvements on said lands and the furnishings of services thereon, no discrimination must be practiced in the selection and retention of first-tier subcontractors in the selection of second-tier subcontractors.
        iii) That such discrimination must not be practiced against the public in their access to and use of the facilities and services provided for public accommodations (such as eating, sleeping, rest, recreation), and operation on, over, or under the space of the State highway right-of-way.
        iv) That the Permittee must use the premises in compliance with all other requirements imposed pursuant to Title 15, Code of Federal Regulations, Commerce and Foreign Trade, Subtitle A. Office of the Secretary of Commerce, Part 8 (15 C.F.R. Part 8) and as said Regulations may be amended.
    b) That in the event of breach of any of the above nondiscrimination covenants, the State and the Department have the right to terminate this encroachment permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said permit had never been made or issued.
31. **MAINTENANCE OF HIGHWAYS:** By accepting this encroachment permit, the Permittee agrees to properly maintain any encroachment. This assurance requires the Permittee to provide inspection and repair any damage, at Permittee's expense, to State facilities resulting from the encroachment.

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32. **SPECIAL EVENTS:** In accordance with subdivision (a) of Streets and Highways Code section 682.5 and 682.7, the Department is not responsible for the conduct or operation of the permitted activity, and the applicant agrees to defend, indemnify, and hold harmless the State, the Department, and the Directors, officers, employees, agents, and contractors of the State and/or of the Department, including but not limited to the Director of Transportation and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of any activity for which this encroachment permit is issued.
The Permittee is required, as a condition of this encroachment permit, for any event that awards prize compensation to competitors in gendered categories, for any participant level that receives prize compensation, to ensure the prize compensation for each gendered category is identical at each participant level. (Streets and Highways Code, section 682.7.)
The Permittee understands and agrees to comply with the obligations of Titles II and III of the Americans with Disabilities Act in the conduct of the event, and further agrees to defend, indemnify, and save harmless the State and the Department, and the Directors, officers, and employees of the State and/or Department, including but not limited to the Director of the Department and the Deputy Directors, from any and all claims, demands, damages, costs, liability, suits, or actions of every name, kind and description arising out of or by virtue of the Americans with Disabilities Act.
33. **PRIVATE USE OF STATE HIGHWAY RIGHT-OF-WAY:** State highway right-of-way must not be used for private purposes without compensation to the State. The gifting of public property uses and therefore public funds is prohibited under the California Constitution, Article XVI, Section 6.
34. **FIELD WORK REIMBURSEMENT:** Permittee must reimburse the Department for field work performed on Permittee's behalf to correct or remedy hazards or damaged facilities, or to clear refuse, debris, etc. not attended to by the Permittee.
35. **LANE CLOSURE REQUEST SUBMITTALS AND NOTIFICATION OF CLOSURES TO THE DEPARTMENT:** Attention is directed to Section 12-4.02A(3) Submittals, of the Department's Standard Specifications, for lane closure requests submittals requirements and schedules. The Permittee must notify the Department's representative and the Traffic Management Center (TMC) before initiating a lane closure or conducting an activity that may cause a traffic impact. In emergency situations when the corrective work or the emergency itself may affect traffic, the Department's representative and the TMC must be notified as soon as possible.
36. **SUSPENSION OF TRAFFIC CONTROL OPERATION:** The Permittee, upon notification by the Department's representative, must immediately suspend all lane closure operations and any operation that impedes the flow of traffic. All costs associated with this suspension must be borne by the Permittee.
37. **UNDERGROUND SERVICE ALERT (USA) NOTIFICATION:** Any excavation requires compliance with the provisions of Government Code section 4216 et. seq., including but not limited to notice to a regional notification center, such as Underground Service Alert (USA). The Permittee must provide notification to the regional notification center at least forty-eight (48) hours before performing any excavation work within the State highway right-of-way.
38. **COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA):** All work within the State highway right-of-way to construct and/or maintain any public facility must be designed, maintained, and constructed strictly in accordance with all applicable Federal Access laws and regulations (including but not limited to Section 504 of the Rehabilitation Act of 1973, codified at 29 U.S.C. § 794), California Access laws and regulations relating to ADA, along with its implementing regulations, Title 28 of the Code of Federal Regulations Parts 35 and 36 (28 C.F.R., Ch. I, Part 35, § 35.101 et seq., and Part 36, § 36.101 et seq.), Title 36 of the Code of Federal Regulations Part 1191 (36 C.F.R., Ch. XI, Part 1191, § 1119.1 et seq.), Title 49 of the Code of Federal Regulations Part 37 (49 C.F.R., Ch. A, Part 37, § 37.1 et seq.), the United States Department of Justice Title II and Title III for the ADA, and California Government Code section 4450 et seq., which require public facilities be made accessible to persons with disabilities.
Notwithstanding the requirements of the previous paragraph, all construction, design, and maintenance of public facilities must also comply with the Department's Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects."
39. **STORMWATER:** The Permittee is responsible for full compliance with the following:
    a) For all projects, the Department's Storm Water Program and the Department's National Pollutant Discharge Elimination System (NPDES) Permit requirements under Order No. 2012-0011-DWQ, NPDES No CAS000003; and
    b) In addition, for projects disturbing one acre or more of soil, with the California Construction General Permit Order No. 2009-0009-DWQ, NPDES No CAS000002; and
    c) In addition, for projects disturbing one acre or more of soil in the Lahontan Region with Order No. R6T-2016-0010, NPDES No CAG616002.
    d) For all projects, it is the Permittee's responsibility to install, inspect, repair, and maintain all facilities and devices used for water pollution control practices (Best Management Practices/BMPs) before performing daily work activities.

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RECEIVED
MAY 17 2020
CALTRANS
DIST 3 PERMITS



Approx. ADL Sample Location
Grading Area
Site

NCE

Proposed ADL Sample Locations

Pioneer Trail Highway 50 Intersection
Phase I Initial Site Assessment
El Dorado County, California

N
0 150 300
feet

PLATE

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Hybrid Basemap, El Dorado County	501.30.25	kando	3/23/20	4/6/20	--

APPENDIX K

LABORATORY REPORT

Date of Report: 08/11/2020

Kiri Ando

Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Client Project:	501.30.25 Task 4
BCL Project:	Pioneer Trail
BCL Work Order:	2021312
Invoice ID:	B387188, B388385

Enclosed are the results of analyses for samples received by the laboratory on 7/24/2020. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1001054956

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Technical Director

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2021312-02 - PT1-1.5
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2021312-04 - PT2-0
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2021312-06 - PT2-2.5
Total Concentrations (TTLC) 46
2021312-07 - PT3-0
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2021312-08 - PT3-1.5
Total Concentrations (TTLC) 49
2021312-09 - PT3-2.5
Total Concentrations (TTLC) 50
2021312-10 - PT4-0
Total Concentrations (TTLC) 51
2021312-11 - PT4-1.5
Total Concentrations (TTLC) 52
2021312-12 - PT4-2.5
Total Concentrations (TTLC) 53
2021312-13 - PT5-0
Total Concentrations (TTLC) 54
2021312-14 - PT5-1.5
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2021312-15 - PT5-2.5
Total Concentrations (TTLC) 56
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Total Concentrations (TTLC) 63
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WET Test (STLC) 65
Total Concentrations (TTLC) 66
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Total Concentrations (TTLC)..... 85
2021312-41 - PT14-1.5
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Chain of Custody and Cooler Receipt Form for 2021312 Page 1 of 20

NCE Chain of Custody/Laboratory Analysis Request Form Page 1 of 10

NCE Project Number: 501.30.25 Task 4

Bill to: Attn: Kiri Ando
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield, CA
Phone: (661) 327-4911

NCE Project/Site: Pioneer Treble
Contractor/Project Manager: Angie Huffle
Firm: NCE
Address: 8795 Folsom Blvd. Ste. #250 Sacramento, CA 95826
Phone & Fax: (916) 388-5625
Sampler's Signature: Kiri Ando

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	EPA 8260B	Lead by 6020	REMARKS:
1	PT1-0	7/21/20	1110		Soil					/		
2	PT1-1.5	7/21/20	1115							/		
3	PT1-2.5	7/21/20	1120							/		
4	PT2-0	7/21/20	1130							/		
5	PT2-1.5	7/21/20	1135							/		
6	PT2-2.5	7/21/20	1140							/		
7	PT3-0	7/21/20	1195							/		
8	PT3-1.5	7/21/20	1200							/		
9	PT3-2.5	7/21/20	1205							/		
10	PT4-0	7/21/20	1210		V					/		

CHK BY DISTRIBUTION
MAIN/LIVE EX
SUB OUT

Relinquish by/date/time: [illegible] 1723rd 1900 hrs
Received by/date: Billy Bogan 7/23/20 1900 hrs
Relinquish by/date: Billy Bogan 7/23/20 2200 hrs
Received by/date: [illegible] 7-24-20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ___Yes X No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. X 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

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NCE

RUSH!

NCE Chain of Custody/Laboratory Analysis Request Form

Page 2 of 10

Bill to: Attn: Kiki Ardo
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

20-21312
NCE Project Number: 501.30.25

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Huepple
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature: Kiki Ardo

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCL	EPA 8260B – Lead by 6020	REMARKS:
-11	PT4-1.5	7/21/20	1215		SOIL					/	
-12	PT4-2.5	7/21/20	1220							/	
-13	PT5-0	7/21/20	1345							/	
-14	PT5-1.5	7/21/20	1350							/	
-15	PT5-2.5	7/21/20	1355							/	
-16	PT6-0	7/21/20	1405							/	
-17	PT6-1.5	7/21/20	1410							/	
-18	PT6-2.5	7/21/20	1415							/	
-19	PT7-0	7/21/20	1425							/	
-20	PT7-1.5	7/21/20	1430							/	

Relinquish by/date/time: Kiki Ardo 7/23/20 1900 hrs
Received by/date: Bill Boehm 7/23/2020 1900 hrs
Relinquish by/date: Bill Boehm 7/23/2020 2000 hrs
Received by/date: 7-24-20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

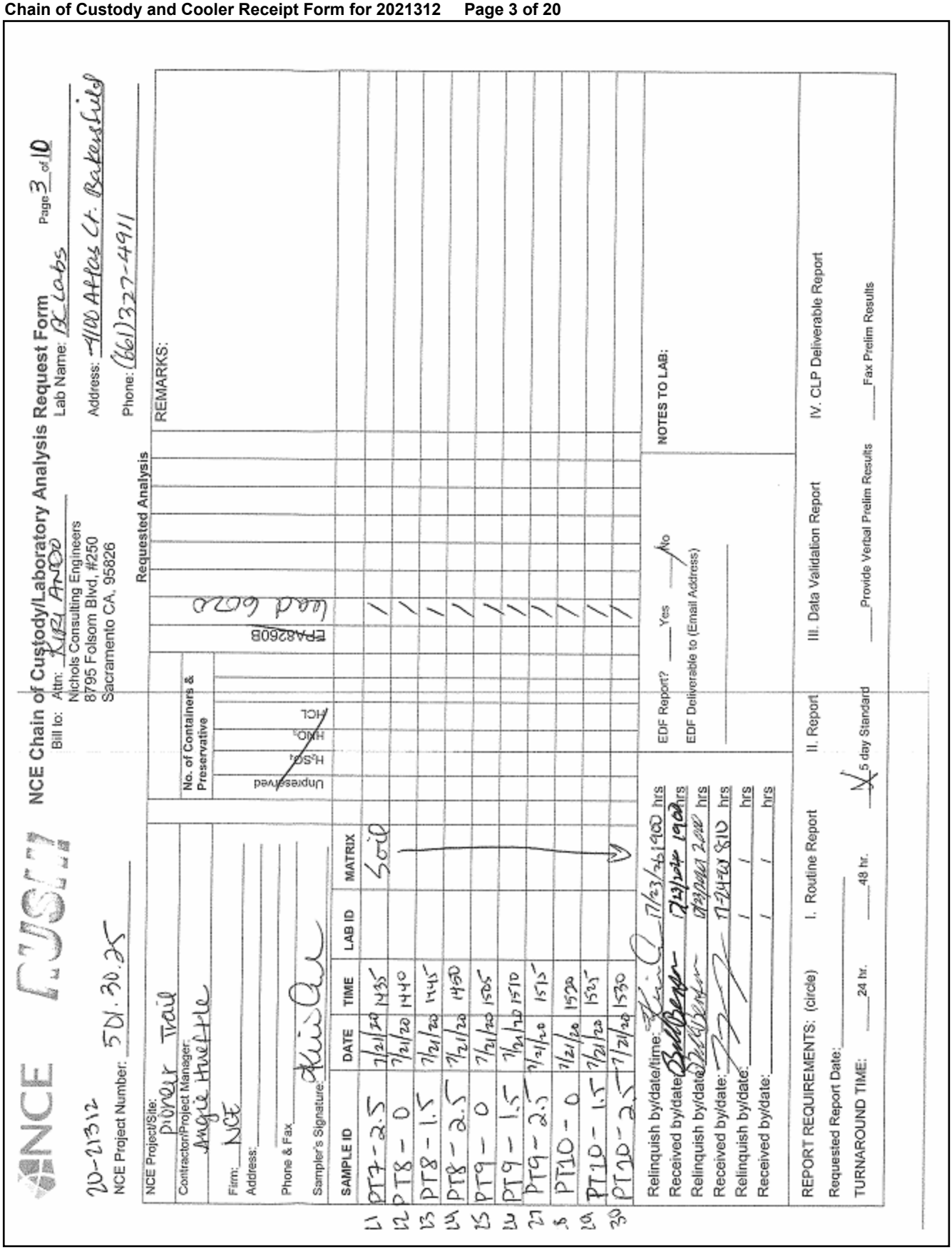
EDF Report? ____Yes / ____No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ____24 hr. ____48 hr. X 5 day Standard ____Provide Verbal Prelim Results ____Fax Prelim Results

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Chain of Custody and Cooler Receipt Form for 2021312 Page 3 of 20



NCE Chain of Custody/Laboratory Analysis Request Form — Page 3 of 10

Bill to: Attn: Kurt Anoe
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

NCE Project Number: 20-21312

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Huffle
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature: Kurt Anoe

No. of Containers & Preservative: Unpreserved; H_2SO_4; HNO_3; HCl

Requested Analysis: EPA 8260B; Lead 6020

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX											REMARKS:
1	PT7-2.5	7/21/20	1435		Soil											
2	PT8-0	7/21/20	1440													
3	PT8-1.5	7/21/20	1445													
4	PT8-2.5	7/21/20	1450													
5	PT9-0	7/21/20	1505													
6	PT9-1.5	7/21/20	1510													
7	PT9-2.5	7/21/20	1515													
8	PT10-0	7/21/20	1520													
9	PT10-1.5	7/21/20	1525													
10	PT10-2.5	7/21/20	1530		V											

Relinquish by/date/time: [illegible] 7/23/20 1400 hrs
Received by/date: [illegible] 7/23/20 1908 hrs
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Received by/date: [illegible] hrs
Relinquish by/date: [illegible] hrs
Received by/date: [illegible] hrs

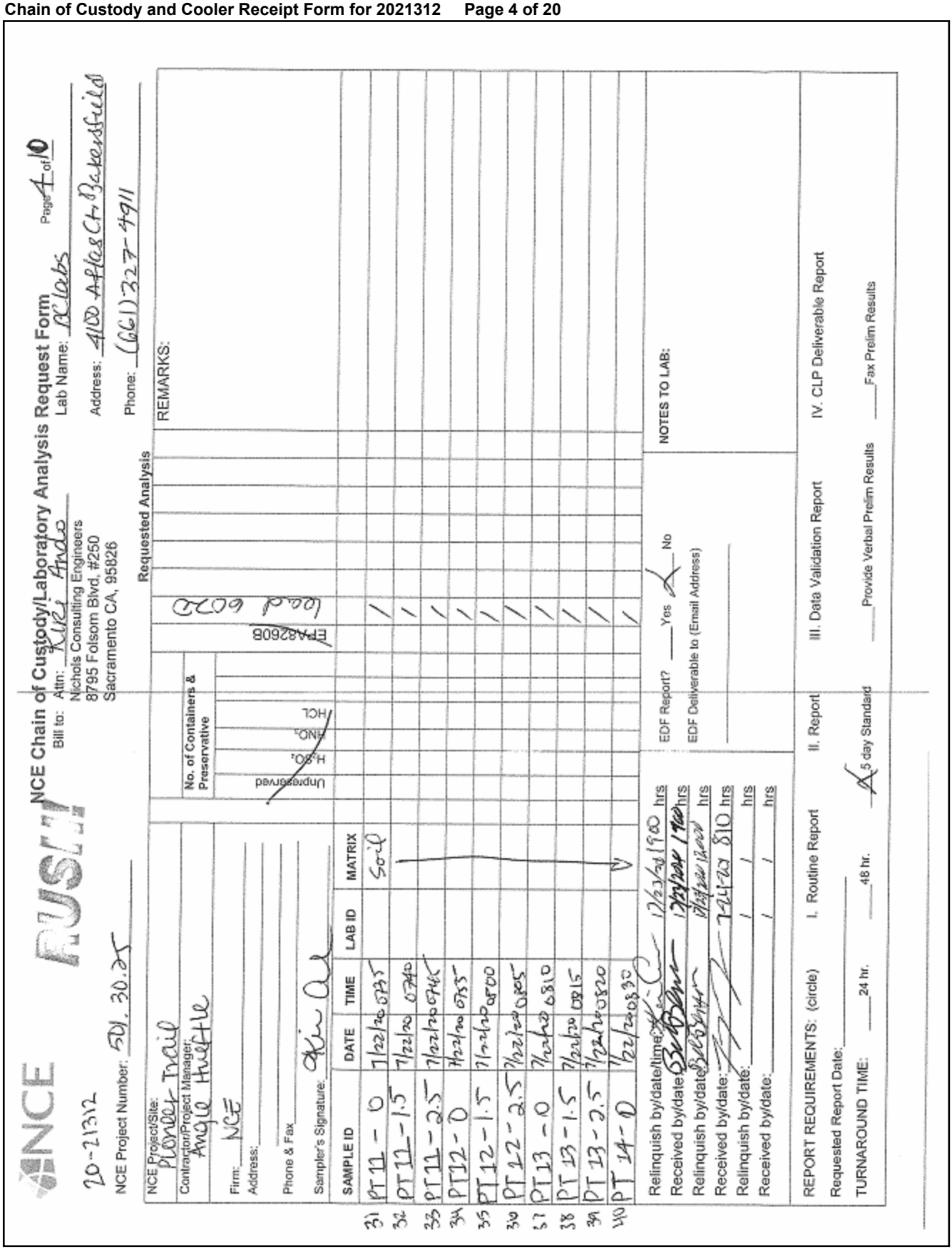
EDF Report? ___Yes ___No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. X 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

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Chain of Custody and Cooler Receipt Form for 2021312 Page 4 of 20



NCE Chain of Custody/Laboratory Analysis Request Form — Page 1 of 10

NCE RUSH

Bill to: Attn: Kurt Ander
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct Bakersfield
Phone: (661) 327-4911

NCE Project Number: 20-21312
NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Hulette
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature: Kim Ale

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	Requested Analysis	REMARKS:
31	PT 11 - 0	7/22/20	0735		Soil					1	
32	PT 11 - 1.5	7/22/20	0740							1	
33	PT 11 - 2.5	7/22/20	0745							1	
34	PT 12 - 0	7/22/20	0755							1	
35	PT 12 - 1.5	7/22/20	0800							1	
36	PT 12 - 2.5	7/22/20	0805							1	
37	PT 13 - 0	7/22/20	0810							1	
38	PT 13 - 1.5	7/22/20	0815							1	
39	PT 13 - 2.5	7/22/20	0820							1	
40	PT 14 - 0	7/22/20	0830		V					1	

EFA82608

Lead 209

Relinquish by/date/time: 7/23/20 1900 hrs
Received by/date: 7/23/20 1900 hrs
Relinquish by/date: 7/24/20 0800 hrs
Received by/date: 7/24/20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ___Yes X No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. X 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

Chain of Custody and Cooler Receipt Form for 2021312 Page 5 of 20

NCE Chain of Custody/Laboratory Analysis Request Form Page 5 of 10

NCE Project Number: 20-21312

Bill to: Attn: Kevin Andre
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Hueffle
Firm: NCE
Address:
Phone & Fax
Sampler's Signature: Kevin Andre

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCL	EPA8260B	Lead 6020	REMARKS:
41	PT 14-1.5	7/22/20	0835		Soil						/	
42	PT 14-2.5	7/22/20	0840								/	
43	PT 15-0	7/22/20	1030								/	
44	PT 15-1.5	7/22/20	1035								/	
45	PT 15-2.5	7/22/20	1040								/	
46	PT 16-0	7/22/20	1020								/	
47	PT 16-1.5	7/22/20	1025								/	
48	PT 16-2.5	7/22/20	1030								/	
49	PT 17-0	7/22/20	1005								/	
50	PT 17-1.5	7/22/20	1010		V						/	

Relinquish by/date/time: Kevin Andre 7/23/20 1400 hrs
Received by/date: Bill Bergen 7/23/20 1400 hrs
Relinquish by/date: Bill Bergen 7/24/20 1000 hrs
Received by/date: [illegible] 7/24/20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ___Yes ___No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. X 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

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Chain of Custody and Cooler Receipt Form for 2021312 Page 6 of 20

NCE Chain of Custody/Laboratory Analysis Request Form

Page 6 of 10

Bill to: Attn: Kim Agee
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

NCE Project Number: 20-21312

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Huepple
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature: Kim Agee

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCL	EPA 8260B	Gas BTEX
51	PT 17-2.5	7/22/20	1015		Soil					/	
52	PT 18-0	7/22/20	0950							/	
53	PT 18-1.5	7/22/20	0955							/	
54	PT 18-2.5	7/22/20	1000							/	
55	PT 19-0	7/22/20	1420							/	
56	PT 19-1.5	7/22/20	1425							/	
57	PT 19-2.5	7/22/20	1430							/	
	PT 19										
58	PT 20-0	7/22/20	1435							/	
59	PT 20-1.5	7/22/20	1455							/	

REMARKS:

Relinquish by/date/time: [illegible] 17/22/20 1900 hrs
Received by/date: [illegible] hrs
Relinquish by/date: [illegible] hrs
Received by/date: [illegible] hrs
Relinquish by/date: [illegible] hrs
Received by/date: [illegible] hrs

EDF Report? ___Yes ✓ No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. ✓ 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

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Chain of Custody and Cooler Receipt Form for 2021312 Page 7 of 20

NCE Chain of Custody/Laboratory Analysis Request Form

Page 7 of 10

Bill to: Attn: Kurt Arlo
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: Attn: Atlas Ct. Bakersfield
Phone: (661) 327-4911

NCE Project Number: 21-2131 2

NCE Project/Site: Florin Trail
Contractor/Project Manager: Kyle Hurtle
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature:

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	EPA 8260B	Total 6 Oxy	REMARKS:
90	PT20-2.5	7/22/20	1500		Soil					/		
91	PT21-D	7/22/20	1505							/		
92	PT21-1.5	7/22/20	1510							/		
93	PT21-2.5	7/22/20	1515							/		
94	PT22-D	7/22/20	1520							/		
95	PT22-1.5	7/22/20	1525							/		
96	PT22-2.5	7/22/20	1530							/		
97	PT23-D	7/23/20	0805							/		
98	PT23-1.5	7/23/20	0815							/		
	PT23-2.5											

Relinquish by/date/time: [illegible] 7/23/20 0930 hrs
Received by/date: [illegible] 7/23/20 1930 hrs
Relinquish by/date: [illegible] 7/23/20 2200 hrs
Received by/date: [illegible] 7-24-20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ___Yes ___No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. ___5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

NCE RUSH!

NCE Chain of Custody/Laboratory Analysis Request Form

Page 8 of 10

Bill to: Attn: Tina Ando
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

20-21312
NCE Project Number: 501.30.25

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Huepple
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature:

Requested Analysis

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	EPA 8260B	Lead 6020	REMARKS:
69	PT24-0	7/23/20	0745		Soil						/	
	[illegible]	7/23/20									/	
	[illegible]	7/23/20									/	
	[illegible]	7/23/20									/	
70	PT 25-0	7/23/20	0720								/	
71	PT 25-1.5	7/23/20	0725								/	
72	PT 25-2.5	7/23/20	0735								/	
73	PT 26-0	7/22/20	1350								/	
74	PT 26-1.5	7/22/20	1355								/	
75	PT 26-2.5	7/22/20	1400								/	
76	PT 27-0	7/24/20	1315								/	

Relinquish by/date/time: 7/23/20 1900 hrs
Received by/date: 7/23/2020 1900 hrs
Relinquish by/date: 7/24/2020 1200 hrs
Received by/date: 7/24/2020 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ____Yes / No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ____24 hr. ____48 hr. /5 day Standard ____Provide Verbal Prelim Results ____Fax Prelim Results

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Chain of Custody and Cooler Receipt Form for 2021312 Page 9 of 20

NCE

NCE Chain of Custody/Laboratory Analysis Request Form

Page 9 of 10

Bill to: Attn: Kurt Ardo
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct Bakersfield
Phone: (661) 327-4911

20-21312

NCE Project Number: DI. 30.25

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angie Huffle
Firm: NCE
Address:
Phone & Fax:
Sampler's Signature: Kurt Ardo

	SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCL	Requested Analysis: EPA8260B	REMARKS:
77	PT27-1.5	7/22/20	1320		Soil					/	
78	PT27-2.5	7/22/20	1345							/	
79	PT28-0	7/22/20	1330							/	
80	PT28-1.5	7/22/20	1305							/	
81	PT28-2.5	7/22/20	1310							/	
82	PT29-0	7/22/20	1350							/	
83	PT29-1.5	7/22/20	1355							/	
84	PT29-2.5	7/22/20	1300							/	
85	PT30-0	7/22/20	1335							/	
86	PT30-1.5	7/22/20	1340		V					/	

Relinquish by/date/time: [illegible] 7/23/20 1900 hrs
Received by/date: [illegible] 7/23/20 1900 hrs
Relinquish by/date: [illegible] 7/24/20 810 hrs
Received by/date: [illegible] 7/24/20 810 hrs
Relinquish by/date: / / hrs
Received by/date: / / hrs

EDF Report? ___Yes ___No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date:
TURNAROUND TIME: ___24 hr. ___48 hr. ___5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

Chain of Custody and Cooler Receipt Form for 2021312 Page 10 of 20

NCE Chain of Custody/Laboratory Analysis Request Form

Page 10 of 10

NCE Project Number: 10-21312

Bill to: Attn: Kurt Carell
Nichols Consulting Engineers
8795 Folsom Blvd, #250
Sacramento CA, 95826

Lab Name: BC Labs
Address: 4100 Atlas Ct. Bakersfield
Phone: (661) 327-4911

NCE Project/Site: Pioneer Trail
Contractor/Project Manager: Angela Huffstutler
Firm: NCE
Address:
Phone & Fax
Sampler's Signature:

Requested Analysis

SAMPLE ID	DATE	TIME	LAB ID	MATRIX	No. of Containers & Preservative: Unpreserved	H_2SO_4	HNO_3	HCL	EPA 8260B	Hold	REMARKS:
PT30-2.5	7/24/20	1245	-87	SOIL							
PT31-0	7/23/20	0900	-88								
PT31-1.5	7/23/20	0905	-89								
PT31-2.5	7/23/20	0915	-90								
PT32-0	7/23/20	0915	-91								
PT32-1.5	7/23/20	0920	-92								
PT32-2.5	7/23/20	0925	-93								
PT33-0	7/23/20	1105	-94								

Relinquish by/date/time: Kurt Carell 7/23/20 1720 hrs
Received by/date: [illegible] 7/24/20 1140 hrs
Relinquish by/date: [illegible] 7/24/20 [illegible] hrs
Received by/date: [illegible] 7/24/20 810 hrs
Relinquish by/date: ____ / ____ hrs
Received by/date: ____ / ____ hrs

EDF Report? ___Yes ___No
EDF Deliverable to (Email Address)

NOTES TO LAB:

REPORT REQUIREMENTS: (circle) I. Routine Report II. Report III. Data Validation Report IV. CLP Deliverable Report
Requested Report Date: ____
TURNAROUND TIME: ___24 hr. ___48 hr. X 5 day Standard ___Provide Verbal Prelim Results ___Fax Prelim Results

Chain of Custody and Cooler Receipt Form for 2021312 Page 11 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TKW

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
oz / 16oz / 32oz AMBER										
oz /16oz / 32oz JAR	A	A	A	A	A	A	A	A	A	A
OIL SLEEVE										
CB VIAL										
LASTIC BAG										
EDLAR BAG										
ERROUS IRON										
NCORE										
ART KIT										
MMA CANISTER										

nments:

nple Numbering Completed By: Date/Time: 7/24/20 1445

= Actual / C = Corrected

Rev 21 05/23/2016

Chain of Custody and Cooler Receipt Form for 2021312 Page 12 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init JW

SAMPLE CONTAINERS	SAMPLE NUMBERS									-20
	11	12	13	14	15	16	17	18	19	
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL - 504										
T EPA 508/608/8080										
T EPA 515.1/8150										
T EPA 525										
T EPA 525 TRAVEL BLANK										
ml EPA 547										
ml EPA 531.1										
EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
16oz / 32oz AMBER										
16oz / 32oz JAR	A	A	A	A	A	A	A	A	A	A
SLEEVE										
VIAL										
STIC BAG										
LAR BAG										
ROUS IRON										
ORE										
RT KIT										
6A CANISTER										

ents:

Numbering Completed By: [illegible] 7/24 VP Date/Time: 7/24/20 1445

ctual / C = Corrected

Rev 21 05/23/2016

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Chain of Custody and Cooler Receipt Form for 2021312 Page 13 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 3 Of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 1-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TW

SAMPLE CONTAINERS	SAMPLE NUMBERS 21	22	23	24	25	26	27	28	29	-30 ~~10~~
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
0 ml VOA VIAL- 504										
YT EPA 508/608/8080										
)T EPA 515.1/8150										
'T EPA 525										
T EPA 525 TRAVEL BLANK										
)ml EPA 547										
'ml EPA 531.1										
z EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
~~16oz/32oz AMBER~~ X10 4oz Jar										
)16oz / 32oz JAR	A	A	A	A	A	A	A	A	A	A
L SLEEVE										
3 VIAL										
STIC BAG										
LAR BAG										
ROUS IRON										
ORE										
RT KIT										
MA CANISTER										

ments:

Ice Numbering Completed By: [illegible] Date/Time: 1/23/20 1445

Actual / C = Corrected

Rev 21 05/23/2016

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Chain of Custody and Cooler Receipt Form for 2021312 Page 14 of 20

BC LABORATORIES INC.

COOLER RECEIPT FORM

Page 4 of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TK

SAMPLE CONTAINERS	SAMPLE NUMBERS									-40
	31	32	33	34	35	36	37	38	39	-40
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
8oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
T CHEMICAL OXYGEN DEMAND										
IA PHENOLICS										
0ml VOA VIAL TRAVEL BLANK										
0ml VOA VIAL										
T EPA 1664										
ODOR										
DIOLOGICAL										
CTERIOLOGICAL										
ml VOA VIAL - 504										
EPA 508/608/8080										
EPA 515.1/8150										
EPA 525										
EPA 525 TRAVEL BLANK										
EPA 547										
EPA 531.1										
PA 548										
PA 549										
PA 8015M										
PA 8270										
16oz / 32oz AMBER 40z Jar	A	A	A	A	A	A	A	A	A	AB
16oz / 32oz JAR ~~8oz~~	A	A	A	A	A	A	A	A	A	A
SLEEVE										
IAL										
IC BAG										
R BAG										
US IRON										
E										
KIT										
CANISTER										

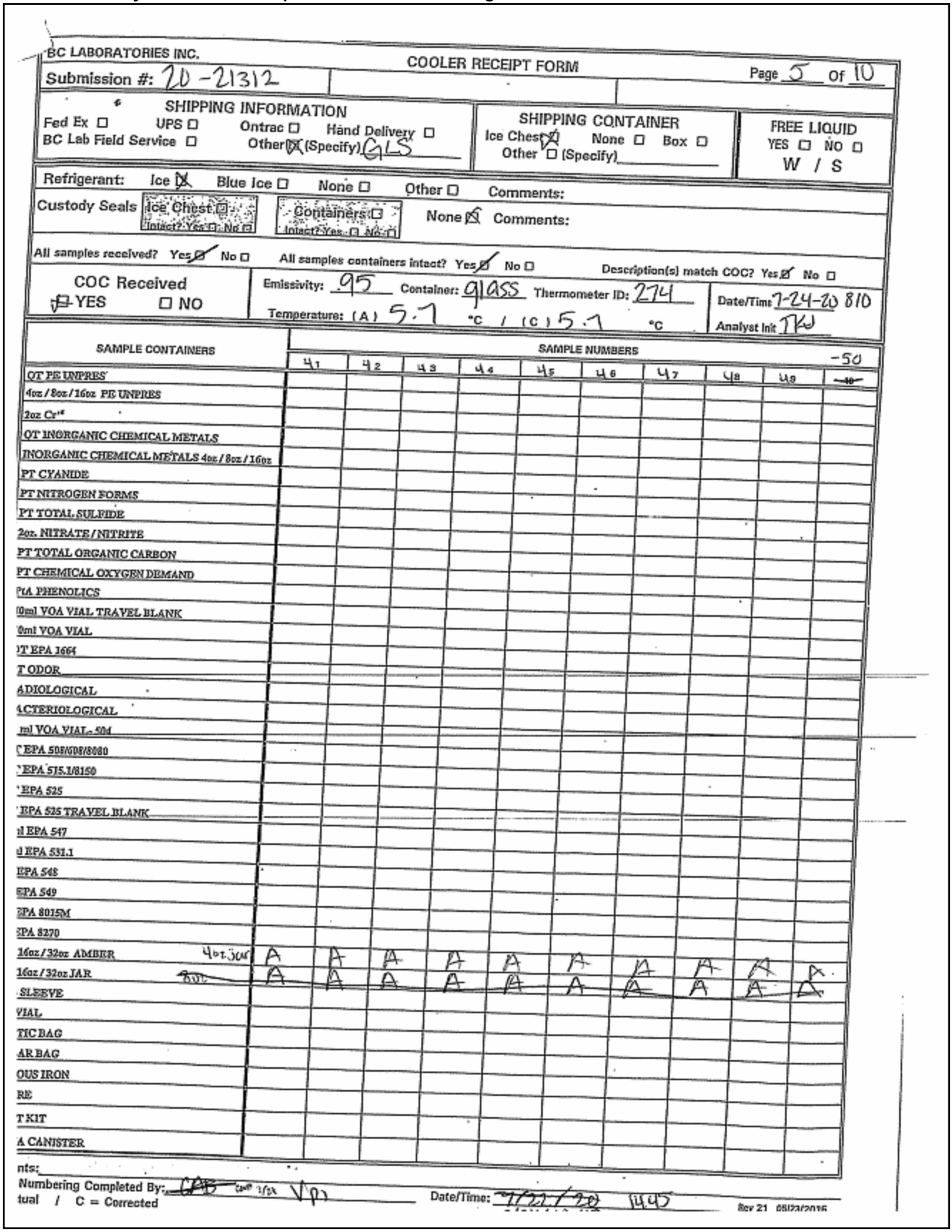
nts: -40B received empty.

Numbering Completed By: ~~CAS~~ and VP Date/Time: ~~7/23/20~~ 7/24/20 1445

ual / C = Corrected

Rev 21 05/23/2016

Chain of Custody and Cooler Receipt Form for 2021312 Page 15 of 20



BC LABORATORIES INC.

COOLER RECEIPT FORM

Page 5 of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time: 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init: TW

SAMPLE CONTAINERS	SAMPLE NUMBERS 41	42	43	44	45	46	47	48	49	-50
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
0ml VOA VIAL TRAVEL BLANK										
0ml VOA VIAL										
PT EPA 1664										
T ODOR										
ADIOLOGICAL										
ACTERIOLOGICAL										
ml VOA VIAL- 504										
EPA 505/608/8080										
EPA 515.1/8150										
EPA 525										
EPA 525 TRAVEL BLANK										
l EPA 547										
d EPA 531.1										
EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
16oz / 32oz AMBER 40z.504	A	A	A	A	A	A	A	A	A	A
16oz / 32oz JAR 8oz	A	A	A	A	A	A	A	A	A	A
SLEEVE										
VIAL										
TIC BAG										
AR BAG										
OUS IRON										
RE										
T KIT										
A CANISTER										

nts:

Numbering Completed By: [illegible] Date/Time: 7/22/20 1445

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Rev 21 08/23/2016

Chain of Custody and Cooler Receipt Form for 2021312 Page 16 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 10 Of 10

Submission #: 20-21312

SHIPPING INFORMATION: Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER: Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)

FREE LIQUID: YES ☐ NO ☐ W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TKW

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	S1	S2	S3	S4	S5	S6	S7	S8	S9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
IA PHENOLICS										
0ml VOA VIAL TRAVEL BLANK										
0ml VOA VIAL										
T EPA 1664										
T ODOR										
ADIOLOGICAL										
ACTERIOLOGICAL										
ml VOA VIAL 504										
EPA 508/608/8080										
EPA 515.1/8150										
EPA 525										
EPA 525 TRAVEL BLANK										
l EPA 547										
l EPA 531.1										
EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
16oz / 32oz AMBER 402 Jar	A	A	A	A	A	A	A	A	A	A
16oz / 32oz JAR 402	A	A	A	A	A	A	A	A	A	A
SLEEVE										
VIAL										
TIC BAG										
AR BAG										
OUS IRON										
RE										
T KIT										
A CANISTER										

nts:

Numbering Completed By: CAB 7/24/20 VM Date/Time: 7/24/20 1545

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Rev 21 05/23/2016

Chain of Custody and Cooler Receipt Form for 2021312 Page 17 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 7 Of 10

Submission #: 20-21312

SHIPPING INFORMATION: Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER: Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)

FREE LIQUID: YES ☐ NO ☐ W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TW

SAMPLE CONTAINERS	SAMPLE NUMBERS 01	02	03	04	05	06	07	08	09	-10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
~~0-ml VOA VIAL 504~~										
T EPA 508/608/8080										
T EPA 515.1/8150										
T EPA 525										
T EPA 525 TRAVEL BLANK										
ml EPA 547										
ml EPA 531.1										
EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
~~16oz / 32oz AMBER~~ 4oz jar	A	A	A	A	A	A				
16oz / 32oz JAR 8oz							A	A	A	A
L SLEEVE metal						A				
VIAL										
STIC BAG										
LAR BAG										
ROUS IRON										
ORE										
RT KIT										
MA CANISTER										

ments:

le Numbering Completed By: ~~EMS~~ VM VM Date/Time: 7/24/20 1445

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Chain of Custody and Cooler Receipt Form for 2021312 Page 18 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM Page 8 Of 10

Submission #: 20-21312

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐
W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 95 Container: glass Thermometer ID: 274 Date/Time: 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init: TK

SAMPLE CONTAINERS	SAMPLE NUMBERS									-80
	71	72	73	74	75	76	77	78	79	80
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
8oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
T CHEMICAL OXYGEN DEMAND										
IA PHENOLICS										
0ml VOA VIAL TRAVEL BLANK										
1ml VOA VIAL										
T EPA 1664										
ODOR										
DIOLOGICAL										
CTERIOLOGICAL										
ml VOA VIAL- 504										
EPA 508/608/8080										
EPA 515.1/8150										
EPA 525										
EPA 525 TRAVEL BLANK										
EPA 547										
EPA 531.1										
PA 548										
PA 549										
PA 8015M										
PA 8270										
6oz / 32oz AMBER										
6oz / 32oz JAR UNPRES 40z	A	A	A	A	A	A	A	A	A	A
SLEEVE										
IAL										
IC BAG										
R BAG										
US IRON										
E										
KIT										
CANISTER										

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Numbering Completed By: VP Date/Time: 7/24/20 1445
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BC LABORATORIES INC. COOLER RECEIPT FORM Page 9 of 10

Submission #: 20-21312

SHIPPING INFORMATION: Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER: Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)

FREE LIQUID: YES ☐ NO ☐ W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TW

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	-10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
T ODOR										
ADIOLOGICAL										
ACTERIOLOGICAL										
ml VOA VIAL- 504										
T EPA 505/608/8080										
F EPA 515.1/8150										
F EPA 525										
F EPA 525 TRAVEL BLANK										
nl EPA 547										
nl EPA 531.1										
EPA 548										
EPA 549										
EPA 8015M										
EPA 8270										
16oz / 32oz AMBER 4oz jar	A	A	A	A	A	A	A			
16oz / 32oz JAR 8oz										
SLEEVE								A	A	A
VIAL										
TIC BAG										
AR BAG										
OUS IRON										
RE										
T KIT										
IA CANISTER										

nts:

Numbering Completed By: CAS as 7/24 Date/Time: 7/24/20 1445

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Chain of Custody and Cooler Receipt Form for 2021312 Page 20 of 20

BC LABORATORIES INC. COOLER RECEIPT FORM

Submission #: 20-21312 Page 10 Of 10

SHIPPING INFORMATION: Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☒ (Specify) GLS

SHIPPING CONTAINER: Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)

FREE LIQUID: YES ☐ NO ☐ W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 95 Container: glass Thermometer ID: 274 Date/Time 7-24-20 810

Temperature: (A) 5.7 °C / (C) 5.7 °C Analyst Init TW

SAMPLE CONTAINERS	SAMPLE NUMBERS (LAB USE ONLY)									
	01	02	03	04	~~05~~	06	07	08	09	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
8oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
IA PHENOLICS										
0ml VOA VIAL TRAVEL BLANK										
0ml VOA VIAL										
T EPA 1664										
ODOR										
DIOLOGICAL										
CTERIOLOGICAL										
ml VOA VIAL- 504										
EPA 508/608/8080										
EPA 515.1/8150										
EPA 525										
EPA 525 TRAVEL BLANK										
EPA 547										
EPA 531.1										
PA 548										
PA 549										
PA 8015M										
PA 8270										
6oz / 32oz AMBER										
6oz / 32oz JAR 8oz	A	A	A	A A	A	A	A	A	A	A
SLEEVE soil sleeve (overall)										
IAL										
IC BAG										
R BAG										
US IRON										
E										
KIT										
CANISTER										

ts:

Numbering Completed By: Date/Time: 7/22/20 1445

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-01	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT1-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-02	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT1-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-03	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT1-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-04	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT2-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-05	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT2-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-06	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT2-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-07	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 11:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT3-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-08	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 12:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT3-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-09	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 12:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT3-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-10	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 12:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT4-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-11	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 12:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT4-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-12	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 12:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT4-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-13	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT5-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-14	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 13:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT5-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-15	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 13:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT5-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-16	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT6-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-17	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT6-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-18	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT6-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-19	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT7-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-20	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT7-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-21	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT7-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-22	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT8-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-23	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT8-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-24	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 14:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT8-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-25	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT9-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-26	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT9-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-27	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT9-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-28	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT10-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-29	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT10-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-30	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/21/2020 15:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT10-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-31	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 07:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT11-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-32	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 07:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT11-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-33	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 07:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT11-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-34	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 07:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT12-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-35	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT12-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-36	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT12-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-37	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT13-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-38	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT13-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-39	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT13-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-40	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT14-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-41	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT14-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-42	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 08:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT14-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-43	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT15-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-44	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT15-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-45	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT15-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-46	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT16-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-47	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT16-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-48	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT16-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-49	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT17-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-50	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT17-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-51	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT17-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-52	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 09:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT18-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-53	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 09:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT18-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-54	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 10:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT18-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-55	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT19-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-56	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT19-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-57	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT19-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-58	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT20-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-59	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT20-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-60	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT20-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-61	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT21-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-62	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT21-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-63	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT21-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-64	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT22-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-65	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT22-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-66	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 15:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT22-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-67	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 08:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT23-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-68	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 08:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT23-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-69	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 07:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT24-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-70	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 07:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT25-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-71	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 07:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT25-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-72	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 07:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT25-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-73	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT26-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-74	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT26-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-75	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 14:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT26-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-76	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT27-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-77	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT27-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-78	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT27-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-79	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT28-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-80	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT28-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-81	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT28-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-82	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 12:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT29-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-83	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 12:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT29-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-84	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 13:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT29-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-85	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 12:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT30-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-86	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 12:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT30-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-87	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/22/2020 12:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT30-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-88	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT31-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-89	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT31-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-90	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT31-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-91	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT32-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2021312-92	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT32-1.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-93	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 09:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT32-2.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2021312-94	**COC Number:**	---	**Receive Date:**	07/24/2020 08:10
	Project Number:	---	**Sampling Date:**	07/23/2020 11:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	PT33-0	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-01 | **Client Sample Name:** PT1-0, 7/21/2020 11:10:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**56**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:09	AS1	PE-EL4	1	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-02 | **Client Sample Name:** PT1-1.5, 7/21/2020 11:15:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**12**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:27	AS1	PE-EL4	0.962	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-03 | **Client Sample Name:** PT1-2.5, 7/21/2020 11:20:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.7**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:30	AS1	PE-EL4	1	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-04 | **Client Sample Name:** PT2-0, 7/21/2020 11:30:00AM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**2.9**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:07	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-04 | **Client Sample Name:** PT2-0, 7/21/2020 11:30:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**55**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:32	AS1	PE-EL4	0.909	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-05 | **Client Sample Name:** PT2-1.5, 7/21/2020 11:35:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**10**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:34	AS1	PE-EL4	0.943	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-06 | **Client Sample Name:** PT2-2.5, 7/21/2020 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:37	AS1	PE-EL4	0.980	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-07 | **Client Sample Name:** PT3-0, 7/21/2020 11:55:00AM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**3.5**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:09	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-07 | **Client Sample Name:** PT3-0, 7/21/2020 11:55:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**80**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 18:39	AS1	PE-EL4	0.971	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-08 | **Client Sample Name:** PT3-1.5, 7/21/2020 12:00:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 20:06	AS1	PE-EL4	0.962	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-09 | **Client Sample Name:** PT3-2.5, 7/21/2020 12:05:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.8**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 20:09	AS1	PE-EL4	0.990	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-10 | **Client Sample Name:** PT4-0, 7/21/2020 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**49**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 20:11	AS1	PE-EL4	0.980	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-11 | **Client Sample Name:** PT4-1.5, 7/21/2020 12:15:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**10**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 20:13	AS1	PE-EL4	0.935	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-12 | **Client Sample Name:** PT4-2.5, 7/21/2020 12:20:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.0**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:33	AS1	PE-EL4	0.935	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-13 | **Client Sample Name:** PT5-0, 7/21/2020 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**56**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:35	AS1	PE-EL4	0.980	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-14 | **Client Sample Name:** PT5-1.5, 7/21/2020 1:50:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:37	AS1	PE-EL4	0.952	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-15 | **Client Sample Name:** PT5-2.5, 7/21/2020 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.7**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:47	AS1	PE-EL4	0.943	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-16 | **Client Sample Name:** PT6-0, 7/21/2020 2:05:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**34**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:49	AS1	PE-EL4	0.952	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-17 | **Client Sample Name:** PT6-1.5, 7/21/2020 2:10:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.4**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:52	AS1	PE-EL4	0.990	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-18 | **Client Sample Name:** PT6-2.5, 7/21/2020 2:15:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**9.9**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:54	AS1	PE-EL4	0.943	B083365	EPA 3050B

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8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-19 | **Client Sample Name:** PT7-0, 7/21/2020 2:25:00PM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**4.5**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:14	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-19 | **Client Sample Name:** PT7-0, 7/21/2020 2:25:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**86**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:56	AS1	PE-EL4	0.962	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-20 | **Client Sample Name:** PT7-1.5, 7/21/2020 2:30:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 09:00	07/27/20 19:59	AS1	PE-EL4	0.990	B083365	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-21 | **Client Sample Name:** PT7-2.5, 7/21/2020 2:35:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.9**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 20:50	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Modified WET Test (STLC)

BCL Sample ID: 2021312-22 | **Client Sample Name:** PT8-0, 7/21/2020 2:40:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Lead	**0.022**	**mg/L**	**0.050**	**0.0035**	**EPA-6010B**	ND	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 09:30	08/10/20 20:04	KDF	PE-OP3	1	B084480	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-22 | **Client Sample Name:** PT8-0, 7/21/2020 2:40:00PM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**11**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:16	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-22 | **Client Sample Name:** PT8-0, 7/21/2020 2:40:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**190**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 21:48	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-23 | **Client Sample Name:** PT8-1.5, 7/21/2020 2:45:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**34**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 21:52	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-24 | **Client Sample Name:** PT8-2.5, 7/21/2020 2:50:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**31**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 21:55	ARD	PE-EL4	0.990	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-25 | **Client Sample Name:** PT9-0, 7/21/2020 3:05:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**41**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 21:57	ARD	PE-EL4	0.990	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-26 | **Client Sample Name:** PT9-1.5, 7/21/2020 3:10:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:00	ARD	PE-EL4	0.980	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-27 | **Client Sample Name:** PT9-2.5, 7/21/2020 3:15:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.0**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:02	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-28 | **Client Sample Name:** PT10-0, 7/21/2020 3:20:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**52**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:17	ARD	PE-EL4	0.971	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-29 | **Client Sample Name:** PT10-1.5, 7/21/2020 3:25:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**7.9**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:19	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-30 | **Client Sample Name:** PT10-2.5, 7/21/2020 3:30:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.4**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:21	ARD	PE-EL4	0.971	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-31 | **Client Sample Name:** PT11-0, 7/22/2020 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**29**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:24	ARD	PE-EL4	0.917	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-32 | **Client Sample Name:** PT11-1.5, 7/22/2020 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.7**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:26	ARD	PE-EL4	0.943	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-33 | **Client Sample Name:** PT11-2.5, 7/22/2020 7:45:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:28	ARD	PE-EL4	0.926	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-34 | **Client Sample Name:** PT12-0, 7/22/2020 7:55:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**46**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:36	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-35 | **Client Sample Name:** PT12-1.5, 7/22/2020 8:00:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**9.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:38	ARD	PE-EL4	0.943	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-36 | **Client Sample Name:** PT12-2.5, 7/22/2020 8:05:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:40	ARD	PE-EL4	0.980	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-37 | **Client Sample Name:** PT13-0, 7/22/2020 8:10:00AM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**3.9**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:18	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-37 | **Client Sample Name:** PT13-0, 7/22/2020 8:10:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**72**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:43	ARD	PE-EL4	0.980	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-38 | **Client Sample Name:** PT13-1.5, 7/22/2020 8:15:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:45	ARD	PE-EL4	0.962	B083366	EPA 3050B

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Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-39 | **Client Sample Name:** PT13-2.5, 7/22/2020 8:20:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:47	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-40 | **Client Sample Name:** PT14-0, 7/22/2020 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**46**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 00:44	07/27/20 22:50	ARD	PE-EL4	1	B083366	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-41 | **Client Sample Name:** PT14-1.5, 7/22/2020 8:35:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**62**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:15	ARD	PE-EL4	1	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-42 | **Client Sample Name:** PT14-2.5, 7/22/2020 8:40:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**78**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:33	ARD	PE-EL4	0.971	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-43 | **Client Sample Name:** PT15-0, 7/22/2020 10:30:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.0**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:36	ARD	PE-EL4	0.971	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

BCL Sample ID: 2021312-44 | **Client Sample Name:** PT15-1.5, 7/22/2020 10:35:00AM

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**7.0**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	08/10/20 10:00	08/10/20 19:20	KDF	PE-OP3	1	B084479	EPA 3005A

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-44 | **Client Sample Name:** PT15-1.5, 7/22/2020 10:35:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**96**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:38	ARD	PE-EL4	0.926	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-45 | **Client Sample Name:** PT15-2.5, 7/22/2020 10:40:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:40	ARD	PE-EL4	0.952	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-46 | **Client Sample Name:** PT16-0, 7/22/2020 10:20:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**51**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:43	ARD	PE-EL4	0.943	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-47 | **Client Sample Name:** PT16-1.5, 7/22/2020 10:25:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:45	ARD	PE-EL4	1	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-48 | **Client Sample Name:** PT16-2.5, 7/22/2020 10:30:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.7**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:52	ARD	PE-EL4	0.980	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-49 | **Client Sample Name:** PT17-0, 7/22/2020 10:05:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**52**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:55	ARD	PE-EL4	0.962	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-50 | **Client Sample Name:** PT17-1.5, 7/22/2020 10:10:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:57	ARD	PE-EL4	1	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-51 | **Client Sample Name:** PT17-2.5, 7/22/2020 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/27/20 23:59	ARD	PE-EL4	0.980	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-52 | **Client Sample Name:** PT18-0, 7/22/2020 9:50:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**40**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:02	ARD	PE-EL4	0.943	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-53 | **Client Sample Name:** PT18-1.5, 7/22/2020 9:55:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:04	ARD	PE-EL4	0.962	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-54 | **Client Sample Name:** PT18-2.5, 7/22/2020 10:00:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:11	ARD	PE-EL4	0.952	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-55 | **Client Sample Name:** PT19-0, 7/22/2020 2:20:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**75**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:13	ARD	PE-EL4	1	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-56 | **Client Sample Name:** PT19-1.5, 7/22/2020 2:25:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:16	ARD	PE-EL4	0.952	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-57 | **Client Sample Name:** PT19-2.5, 7/22/2020 2:30:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:18	ARD	PE-EL4	1	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-58 | **Client Sample Name:** PT20-0, 7/22/2020 2:35:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**42**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:20	ARD	PE-EL4	0.980	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-59 | **Client Sample Name:** PT20-1.5, 7/22/2020 2:55:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:23	ARD	PE-EL4	0.990	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-60 | **Client Sample Name:** PT20-2.5, 7/22/2020 3:00:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.0**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 00:25	ARD	PE-EL4	0.962	B083370	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-61 | **Client Sample Name:** PT21-0, 7/22/2020 3:05:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**50**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:09	JNC	PE-EL2	1	B083371	EPA 3050B

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Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-62 | **Client Sample Name:** PT21-1.5, 7/22/2020 3:10:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.0**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:24	JNC	PE-EL2	0.990	B083371	EPA 3050B

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Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-63 | **Client Sample Name:** PT21-2.5, 7/22/2020 3:15:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:26	JNC	PE-EL2	1	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-64 | **Client Sample Name:** PT22-0, 7/22/2020 3:20:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**58**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:28	JNC	PE-EL2	0.980	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-65 | **Client Sample Name:** PT22-1.5, 7/22/2020 3:25:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.2**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:29	JNC	PE-EL2	0.990	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-66 | **Client Sample Name:** PT22-2.5, 7/22/2020 3:30:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:31	JNC	PE-EL2	0.926	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-67 | **Client Sample Name:** PT23-0, 7/23/2020 8:05:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**46**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:33	JNC	PE-EL2	0.971	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-68 | **Client Sample Name:** PT23-1.5, 7/23/2020 8:15:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:35	JNC	PE-EL2	0.980	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-69 | **Client Sample Name:** PT24-0, 7/23/2020 7:45:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**19**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:42	JNC	PE-EL2	0.962	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-70 | **Client Sample Name:** PT25-0, 7/23/2020 7:20:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**16**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:44	JNC	PE-EL2	0.909	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-71 | **Client Sample Name:** PT25-1.5, 7/23/2020 7:25:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**23**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:45	JNC	PE-EL2	0.909	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-72 | **Client Sample Name:** PT25-2.5, 7/23/2020 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**13**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:47	JNC	PE-EL2	1	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-73 | **Client Sample Name:** PT26-0, 7/22/2020 1:50:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**44**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:49	JNC	PE-EL2	0.990	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-74 | **Client Sample Name:** PT26-1.5, 7/22/2020 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.9**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:51	JNC	PE-EL2	0.952	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-75 | **Client Sample Name:** PT26-2.5, 7/22/2020 2:00:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:52	JNC	PE-EL2	0.935	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-76 | **Client Sample Name:** PT27-0, 7/22/2020 1:15:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.8**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 10:54	JNC	PE-EL2	1	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-77 | **Client Sample Name:** PT27-1.5, 7/22/2020 1:20:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**7.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 11:03	JNC	PE-EL2	0.971	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-78 | **Client Sample Name:** PT27-2.5, 7/22/2020 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 11:04	JNC	PE-EL2	1	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-79 | **Client Sample Name:** PT28-0, 7/22/2020 1:00:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**17**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 11:06	JNC	PE-EL2	0.990	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-80 | **Client Sample Name:** PT28-1.5, 7/22/2020 1:05:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.3**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 12:00	07/28/20 11:10	JNC	PE-EL2	1	B083371	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-81 | **Client Sample Name:** PT28-2.5, 7/22/2020 1:10:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.1**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 16:54	AS1	PE-EL2	1	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-82 | **Client Sample Name:** PT29-0, 7/22/2020 12:50:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**27**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:11	AS1	PE-EL2	0.962	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-83 | **Client Sample Name:** PT29-1.5, 7/22/2020 12:55:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.6**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:12	AS1	PE-EL2	0.926	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-84 | **Client Sample Name:** PT29-2.5, 7/22/2020 1:00:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.8**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:14	AS1	PE-EL2	0.943	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-85 | **Client Sample Name:** PT30-0, 7/22/2020 12:35:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:16	AS1	PE-EL2	0.943	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-86 | **Client Sample Name:** PT30-1.5, 7/22/2020 12:40:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:18	AS1	PE-EL2	0.943	B083367	EPA 3050B

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Nichols Consulting Engineers
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-87 | **Client Sample Name:** PT30-2.5, 7/22/2020 12:45:00PM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.5**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	07/27/20 10:15	07/27/20 17:19	AS1	PE-EL2	1	B083367	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

BCL Sample ID: 2021312-94 | **Client Sample Name:** PT33-0, 7/23/2020 11:25:00AM

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**63**	**mg/kg**	**0.25**	**0.12**	**EPA-6020**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6020	08/04/20 15:30	08/05/20 08:49	JNC	PE-EL2	1	B084002	EPA 3050B

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Modified WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B084480						
Lead	B084480-BLK1	ND	mg/L	0.050	0.0035	

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Modified WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B084480										
Lead	B084480-BS1	LCS	2.1166	2.0000	mg/L	106		85 - 115		

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Modified WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B084480	Used client sample: N										
Lead	DUP	2021689-02	ND	0.0051122		mg/L			20		J
	MS	2021689-02	ND	2.0875	2.0408	mg/L		102		75 - 125	
	MSD	2021689-02	ND	2.1072	2.0408	mg/L	0.9	103	20	75 - 125	

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B084479						
Lead	B084479-BLK1	ND	mg/L	0.50	0.16	

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Sacramento, CA 95826

Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B084479										
Lead	B084479-BS1	LCS	20.480	20.000	mg/L	102		85 - 115		

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B084479	Used client sample: N										
Lead	DUP	2022353-01	0.20257	0.18436		mg/L	9.4		20		J
	MS	2022353-01	0.20257	20.380	20.408	mg/L		98.9		75 - 125	
	MSD	2022353-01	0.20257	21.001	20.408	mg/L	3.0	102	20	75 - 125	

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B083365						
Lead	B083365-BLK1	ND	mg/kg	0.25	0.12	
QC Batch ID: B083366						
Lead	B083366-BLK1	ND	mg/kg	0.25	0.12	
QC Batch ID: B083367						
Lead	B083367-BLK1	ND	mg/kg	0.25	0.12	
QC Batch ID: B083370						
Lead	B083370-BLK1	ND	mg/kg	0.25	0.12	
QC Batch ID: B083371						
Lead	B083371-BLK1	ND	mg/kg	0.25	0.12	
QC Batch ID: B084002						
Lead	B084002-BLK1	ND	mg/kg	0.25	0.12	

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B083365										
Lead	B083365-BS1	LCS	28.248	25.000	mg/kg	113		75 - 125		
QC Batch ID: B083366										
Lead	B083366-BS1	LCS	26.263	25.000	mg/kg	105		75 - 125		
QC Batch ID: B083367										
Lead	B083367-BS1	LCS	28.238	25.000	mg/kg	113		75 - 125		
QC Batch ID: B083370										
Lead	B083370-BS1	LCS	26.890	25.000	mg/kg	108		75 - 125		
QC Batch ID: B083371										
Lead	B083371-BS1	LCS	26.559	25.000	mg/kg	106		75 - 125		
QC Batch ID: B084002										
Lead	B084002-BS1	LCS	26.702	25.000	mg/kg	107		75 - 125		

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B083365	Used client sample: Y - Description: PT1-0, 07/21/2020 11:10										
Lead	DUP	2021312-01	56.154	52.895		mg/kg	6.0		20		
	MS	2021312-01	56.154	75.371	25.000	mg/kg		76.9		75 - 125	
	MSD	2021312-01	56.154	75.858	25.000	mg/kg	0.6	78.8	20	75 - 125	
QC Batch ID: B083366	Used client sample: Y - Description: PT7-2.5, 07/21/2020 14:35										
Lead	DUP	2021312-21	4.9282	4.8462		mg/kg	1.7		20		
	MS	2021312-21	4.9282	29.794	25.000	mg/kg		99.5		75 - 125	
	MSD	2021312-21	4.9282	32.614	25.000	mg/kg	9.0	111	20	75 - 125	
QC Batch ID: B083367	Used client sample: Y - Description: PT28-2.5, 07/22/2020 13:10										
Lead	DUP	2021312-81	3.0970	3.3268		mg/kg	7.2		20		
	MS	2021312-81	3.0970	29.573	25.000	mg/kg		106		75 - 125	
	MSD	2021312-81	3.0970	30.607	25.000	mg/kg	3.4	110	20	75 - 125	
QC Batch ID: B083370	Used client sample: Y - Description: PT14-1.5, 07/22/2020 08:35										
Lead	DUP	2021312-41	61.694	59.702		mg/kg	3.3		20		
	MS	2021312-41	61.694	85.380	25.000	mg/kg		94.7		75 - 125	
	MSD	2021312-41	61.694	92.906	25.000	mg/kg	8.4	125	20	75 - 125	
QC Batch ID: B083371	Used client sample: Y - Description: PT21-0, 07/22/2020 15:05										
Lead	DUP	2021312-61	49.516	47.007		mg/kg	5.2		20		
	MS	2021312-61	49.516	70.940	25.000	mg/kg		85.7		75 - 125	
	MSD	2021312-61	49.516	73.369	25.000	mg/kg	3.4	95.4	20	75 - 125	
QC Batch ID: B084002	Used client sample: Y - Description: PT33-0, 07/23/2020 11:25										
Lead	DUP	**2021312-94**	**63.187**	**62.610**		**mg/kg**	**0.9**		**20**		
	MS	**2021312-94**	**63.187**	**91.756**	**25.000**	**mg/kg**		**114**		**75 - 125**	
	MSD	**2021312-94**	**63.187**	**100.51**	**25.000**	**mg/kg**	**9.1**	**149**	**20**	**75 - 125**	**Q03**

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Reported: 08/11/2020 13:09
Project: Pioneer Trail
Project Number: 501.30.25 Task 4
Project Manager: Kiri Ando

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
Q03	Matrix spike recovery(s) was(were) not within the control limits.

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APPENDIX I

STORMWATER DATA REPORT

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

Dist-County-Route: 3-ED-50/Pioneer Trail
Post Mile Limits: ED 50 71.34 – 71.59
Type of Work: Intersection Safety Improvement Project
Project ID (EA): 0317000163 (03-2H6100)
Program Identification:
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Lahontan (Region 6)
Total Disturbed Soil Area: 4.56 acres PCTA: 1.10 acres
Alternative Compliance (acres): 0 acres ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: 5/1/22 Estimated Const. Completion Date: 10/31/22
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other: Tahoe Basin
Is MWELO applicable? Yes ☒ No ☐
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres):
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

Angela Hueftle 04/23/2021
Angela Hueftle, Registered Project Engineer — Date

Type text here

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Donaldo Palaroan, Project Manager — 04/23/2021 *Date*

Anthony Thurman 5/13/2021
Anthony Thurman, Designated Maintenance Representative — *Date*

Nicki Johnson 5/13/2021
Nicki Johnson, Designated Landscape Architect Representative — *Date*

Iris Bishop Digitally signed by Iris Bishop Date: 2021.05.14 05:20:07 -07'00' 5/14/2021
Iris Bishop, District/Regional Design SW Coordinator or Designee — *Date*

[Stamp Required at PS&E only]

COVID-19 AND TELEWORKING, DIGITAL SIGNATURES

Due to the challenges of the current COVID-19 Teleworking environment digital signatures were used to finalize this report/document.

Chris Rockey, PE
Hydraulics & Stormwater Branch Chief, Marysville District 3
Division of Engineering Services
North Region Division of Project Development
California Department of Transportation
703 B Street
Marysville, CA. 95901
(530) 741-4517

STORMWATER DATA INFORMATION

1. Project Description

The County of El Dorado (County) as the project sponsor and lead agency, in cooperation with the California Department of Transportation (Caltrans), is proposing to convert an existing signalized intersection at the U.S. Highway 50 (US 50)/State Route 89 (SR 89) and Pioneer Trail intersection in Meyers, California, into a three-leg modern roundabout as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project (Project).

The Project would improve safety and mobility for all modes of travel, include lighting, signage, and landscaping, reduce resilience on the private automobile, provide multimodal transportation improvements like visible crosswalks and a shared-use path for pedestrian and bicycle movements, provide opportunity for future growth of transit facilities to enhance circulation, and provide opportunities to experience Meyers as a pedestrian or cyclist. Once implemented, the Project would close a major gap in the active transportation system by providing full access for non-motorist users to the neighboring amenities.

The Project is located in El Dorado County, California, in the Tahoe Basin. The Project site lies in the central portion of Sections 20 and 29 of Township 12 North and Range 18 East (Mt. Diablo Meridian). The Project covers a total area of approximately 4 acres, including 0.35 miles of US 50/SR 89 and 0.13 miles of Pioneer Trail, and is generally surrounded by forested open space.

The Project will remove the existing signal at the intersection of Pioneer Trail and US 50 and replace it with a three-leg modern roundabout. The proposed roundabout is a single-lane roundabout with additional right turn and through bypass lanes and would include standard roundabout design features such as a shared-use path, crosswalks, splitter islands, truck apron with central island, lighting and signage improvements, site drainage improvements, and landscape buffers between the circular roadway and shared-use path. Approximately 1,200 linear feet of an 8-foot wide shared-use path (sidewalk and bike path) concrete path would be constructed as part of the Project.

Disturbed Soil Area and New Impervious Surface

The total disturbed soil area (DSA) was calculated by using the grading limits within the State of California (State) Right-of-Way (ROW) and the County ROW. These quantities were determined from preliminary design plans and are likely to change as the design progresses. A few potential locations have been identified for construction staging of the project and will be evaluated as the design progresses. Thus, staging areas were not included in the calculation of DSA. The Table below provides the total DSA per jurisdiction's ROW (Attachment 4).

The quantities of existing and post-project impervious areas were calculated for the State ROW and the County ROW (Attachment 5). Per Caltrans guidance, existing and post-project impervious areas may include pavement, sidewalks, bridges, bicycle lanes, pedestrian lanes, and gore areas. The existing impervious area subtracted from the post-project impervious area results in the quantity of net new impervious area (NNI).

The new impervious surface (NIS) is the sum of the NNI and the replaced impervious surface (RIS) minus the excluded impervious areas (EIA). The RIS included any existing paved area removed to subgrade (native material) and replaced. EIA included sidewalks, a Class 1 shared use path, and pedestrian ramps. These parameters were calculated for the State ROW and the County ROW (Attachment 5).

The NIS for the State ROW does not exceed the threshold treatment requirement of 1 acre for an on-highway project. Thus, this Project is not required to provide treatment.

The Post Construction Treatment Area (PCTA) is the sum of the NIS and Additional Treatment Areas (ATA) #1 and #2. Since the Project plans to remove the existing traction sand traps, the impervious area currently being treated by traction sand traps was delineated and provided as ATA #1. The quantity of NNI divided by the post-project impervious area is less than 50% and thus ATA #2 is equal to zero. The PCTA was calculated for the State ROW to be 1.10 acres. Treatment BMPs will be included as part of this Project to address the ATA #1 areas. These Treatment BMPs include an infiltration basin and traction sand traps.

The Project is subject to the treatment threshold requirements of the 2012 Caltrans Municipal Separate Storm Sewer System (MS4) Permit.

Owner	State Right-of-Way	County Right-of-Way	Total
Disturbed Soil Area (DSA) (acres)	3.42	1.14	4.56
Existing Impervious Area (acres)	1.43	0.42	1.85
Post-Project Impervious Area (acres)	1.98	0.63	2.61
Net New Impervious Area (NNI) (acres)	0.55	0.21	0.76
Replaced Impervious Surface (RIS) (acres)	0.00	0.00	0.00
Excluded Impervious Area (EIA) (acres)	0.43	0.12	0.55
New Impervious Surface (NIS) (acres)	0.12	0.09	0.21
ATA #1 (acres)	0.98	0.19	1.17
ATA #2 (acres)	0.00	0.00	0.00
PCTA (acres)	1.10	0.28	1.38

- Per Section 4.3, Step 7 of the PPDG, July 2017, Post Construction Treatment Area (PCTA) is required for New Impervious Surface (NIS) that equals or exceeds one acre or more or 5,000 sqft. on non-highway projects. PCTA = NIS + ATA #1 + ATA #2
- NIS = NNI + RIS - EIA
- ATA = Additional Treated Area
- EIA= Sidewalk, Pedestrians, Separate bikeways Areas, and areas over paved areas (any area of a bridge that goes over a road needs to be excluded)
- PCTA = Post Construction Treatment Area

2. Site Data and Stormwater Quality Design Issues

Water Quality Data

The Project area is located within the Angora Creek – Upper Truckee River subwatershed of the Upper Truckee River watershed and is within Planning Watershed 8634100403 and Hydrologic Sub-Area 634.10 in the South Lake Tahoe Hydrologic Area in the Lake Tahoe Hydrologic Unit. This area is overseen by the Lahontan Regional Water Quality Control Board (RWQCB), Region Number 6. The approximate center of the US 50/Pioneer Trail intersection is located at latitude 38.859541 and longitude -120.012105.

The Project drains to an unnamed, ephemeral tributary which flows approximately 200 feet to its junction with Meyers Creek, a tributary to the Upper Truckee River which drains into Lake Tahoe. The Caltrans Water Quality Planning Tool identifies the project as being located within a high-risk receiving watershed.

The Caltrans Water Quality Planning Tool identified the following water bodies on the 303(d) list of impaired receiving water bodies. The Upper Truckee River is listed as requiring a Total Maximum Daily Load (TMDL) for Iron and Phosphorus as being addressed with a U.S. Environmental Protection Agency (USEPA) approved TMDL. The Upper Truckee River is tributary to Lake Tahoe, which is listed for Nitrogen, Phosphorus, and Sedimentation/Siltation TMDLs. Caltrans is a named stakeholder within the Lake Tahoe Basin.

The Lahontan Basin Plan identifies the existing or potential beneficial uses of the Upper Truckee River as a surface water of the Lake Tahoe hydrologic unit with the receiving body being Lake Tahoe. The beneficial uses include Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Navigation (NAV), Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Migration of Aquatic Organisms (MIGR), and Spawning, Reproduction, and Development (SPAWN).

The Project area does not drain to an Area of Special Biological Significance (ASBS). It is also not located within a Federal Emergency Management Agency (FEMA) Special Flood Hazard Area 1%, a National Wetland Inventory site, nor within a State Wetland. There are no drinking water reservoirs and/or recharge facilities located within the project limits.

The Project is located within Scenic Roadway Units 36 (US 50/SR 89) and Unit 46 (Pioneer Trail). According to TRPA Plan Area Statement (PAS), the project is located within PAS 123 – Meyers Forest. The PAS 123 general land use classification is Conservation with a management strategy of mitigation, and it contains a special designation as a scenic restoration area. Most of the PAS 123 area is undeveloped except for a few minor structures at the US 50/Pioneer Trail intersection.

Commercial establishments are located south and east of the US 50/Pioneer Trail intersection, the Tahoe Paradise Golf Course is located to the southeast and there is open space to the west and east. There are residences further to the north, east, west and southwest. Lake Tahoe Golf Course is a mile further north of the US 50/Pioneer Trail intersection to the west.

The California Hazardous Material Incident Report System (CHMIRS) list identifies one site within the Project area related to a sewage release in 2010 that was contained and cleaned up. A review of the Leaking Underground Storage Tank (LUST) list indicates that there are four LUST facilities within approximately 0.5 miles of the Project site with the potential for environmental concerns from these facilities being moderate.

A Phase I Environment Site Assessment (ESA) and an Aerially Deposited Lead (ADL) Assessment were completed in support of this project. The preliminary ADL investigation indicated that aerially deposited lead is present within the Project Area. Three of the 88 samples collected (two surface and one sample collected from 1.5-feet below ground surface) exceeded the screening

value for unrestricted use. However, no sample results exceeded the screening criteria for a commercial/industrial setting. Any material off-hauled from the site during construction will be screened prior to disposal at an appropriate facility. Results of the ESA and ADL will be considered in the placement and design of water quality treatment devices on the Project. Mitigation to minimize the potential for contamination by lead-contaminated soils is included in the draft environmental document.

The Project falls within the Tahoe Basin Phase I MS4 Permit Area and will comply with Lahontan RWQCB requirements for the Tahoe Basin. These include the requirements of the Renewed Waste Discharge and NPDES Permit for Stormwater/Urban Runoff discharges from El Dorado County, Placer County, and the City of South Lake Tahoe within the Lake Tahoe Hydrologic Unit. The region-specific requirements developed for the Lake Tahoe Basin include compliance with established TMDLs, and loading reduction requirements for fine sediment particles, total nitrogen, and total phosphorus. The current NPDES Permit requires Caltrans to implement collection and treatment BMPs that are capable of infiltrating the discharge from all impervious surfaces generated by the 20-year, 1-hour storm (1 inch of rainfall in the Lake Tahoe Basin), if possible. Otherwise, the Project must demonstrate how the numeric effluent limits will be meet or demonstrate that shared facilities are sufficient to meet average annual fine sediment and nutrient load reduction requirements.

The Project will obtain or comply with the following permits:

- NPDES Construction Storm Water NPDES Permit for the Tahoe Basin (ORDER NO. R6T-2016-0010 NPDES NO. CAG616002).
- Lahontan RWQCB Waste Discharge Requirements
- TRPA Project Permit
- TRPA Soils/Hydrology Scoping Report Application

Existing Treatment BMPs within the Caltrans ROW of the project area include two, dual traction sand traps. A pair of traction sand traps are located along the southeastern corner of the US 50/Pioneer Trail intersection. Another pair of traction sand traps are located approximately 250 feet north of the US 50/Pioneer Trail intersection and are tied into a cross culvert under US 50.

According to the November 2, 2020, Caltrans Maintenance IMMS System the following existing Treatment BMPs are near and within the project limits;

A 401 Certification and 404 Permit will be required. IB

Post Mile	Direction	TBMP Type	Post Mile	Direction	TBMP Type
033.520	E	TRCSND	070.732	E	INDBAS
061.789	W	INDBAS	070.742	E	TRCSND
066.665	W	DETBAS	070.757	W	INDBAS
066.772	W	DETBAS	070.758	E	TRCSND
066.773	W	DETBAS	070.759	E	INDBAS
066.774	W	DETBAS	070.783	E	TRCSND
067.910	E	TRCSND	070.787	E	INDTRE
067.990	E	TRCSND	070.836	E	INDBAS
068.000	E	TRCSND	070.853	W	INDBAS
069.378	W	INDBAS	070.907	W	INDBAS
070.225	E	DETBAS	070.949	E	INDBAS
070.226	E	INDBAS	071.004	W	INDBAS
070.227	E	INDTRE	071.030	E	INDBAS
070.240	E	TRCSND	071.061	W	INDBAS
070.372	E	INDBAS	071.074	E	INDBAS
070.620	E	TRCSND	071.132	E	INDBAS
070.626	W	INDBAS	071.149	E	INDBAS
070.637	W	INDTRE	071.156	W	INDBAS
070.660	E	TRCSND	071.290	E	TRCSND
070.680	W	INDBAS	071.470	E	TRCSND
070.729	W	INDBAS			

- TRCSND= Traction sand trap
- INDBAS= Infiltration device-basin
- INDTRE= Infiltration device- trench

Geotechnical Data

The Natural Resource Conservation Service (NRCS)'s Tahoe Basin Area, California and Nevada Soil Report shows the Project area as underlain by the Jabu coarse sandy loam, 0 to 9 percent slopes. This soil type is well drained with a Hydrologic Soil Group A indicating that it has a low runoff potential. Geotechnical exploration results identified a soils profile consisting of silty sand, silty, clayey sand, and poorly graded sand soils with low to moderation amounts of gravel through the maximum depth of exploration. A subgrade soil type of SM Unified Soil Classification System, which corresponds to a coarse-grained soil of sands with fines, was determined.

Geotechnical borings and pavement cores were collected for this Project in October 2019. Results from the geotechnical investigation indicate that groundwater was not encountered during collection of the borings that were advanced to 11.5 feet below the existing grade. However, seasonal snowmelt will saturate the subgrade soils and could potentially result in perched water layers during the spring months. Infiltration testing was completed in three borings at a 5-foot depth. An adjusted infiltration rate of 3.37 inches per hour was determined for a boring located adjacent to the proposed infiltration basin at the northeast corner of the US 50/Pioneer Trail intersection.

Topographic

The Project area is located in the Echo Lake United States Geological Survey (USGS) 7.5-minute topographic quadrangle. The topography of the Project area slopes gently downward from the southern and eastern edges of the Project area. The intersection of US 50/Pioneer Trail is located at approximately 6,320 feet above mean sea level.

In October 2019, MAPCA Surveys Inc., performed a ground survey of the Project area. The survey extended approximately 1,900 feet from the intersection of Santa Fe Road and Apache Avenue with US 50 north to the intersection of Arapahoe Street and US 50 and covered the extent of the State ROW. The survey also included a portion of Pioneer Trail extending slightly beyond the edge of pavement. The data was collected in the North American Datum (NAD) 83/94, California State Plane Coordinate System, Zone 2 horizontal datum and the National Geodetic Vertical Datum of 1929 (NGVD 29). The survey included existing utilities, recreational facilities, trees, signage, roadway, and ground shots.

Climatic

The climate in South Lake Tahoe, California, consists of warm, dry summers and cold, wet winters. Temperatures vary throughout the year with an average maximum temperature of 79.7 degrees Fahrenheit in July to an average minimum temperature in January of 16.4 degrees Fahrenheit (WRCC, 2019). The majority of precipitation falls between October and April averaging approximately 41 inches per year. Annual snowfall approximates 200 inches per year (WRCC 2019).

Right of Way Requirements

Project activities would occur within County ROW on Pioneer Trail, federal highway US 50 (also known as SR 89 owned by Caltrans), on adjacent publicly owned parcels belonging to the California Tahoe Conservancy (CTC), and a portion of land of owned by private property owners. Permanent and temporary easements will be required as part of this Project. The easements will be obtained for roadway, multi-use path, and infiltration basin improvements as well as for tree removal, grading associated with the multi-use path, and removal and restoration of an existing multi-use path.

The project would require the following property rights:

- Assessor's Parcel Number (APN) 034-270-056: A temporary easement of 245 square feet (SF) is required to construct grading, revegetation, and landscaping and to remove trees and the existing shared-use path. This is publicly owned vacant land.
- APN 034-270-041: A partial ROW take of 1,362 SF is required to construct and maintain roadway, curb and gutter, landscaping, and lighting. A temporary easement of 6,340 SF is required to construct grading, revegetation, and landscaping and to remove trees and existing shared-use path. This is publicly owned vacant land.
- APN 034-270-055: A partial ROW take of 434 SF is required to construct and maintain roadway, curb and gutter, landscaping, and lighting. A permanent easement of 5,202 SF is required to construct and maintain water quality treatment basin improvements. A temporary easement of 4,247 SF is required to construct grading, revegetation, and landscaping. This is publicly owned vacant land.
- APN 034-401-025: A temporary easement of 1,300 SF is required to construct grading, revegetation, and landscaping. This is a privately owned parcel.

3. Construction Site BMPs to be used on Project

Project Risk Level

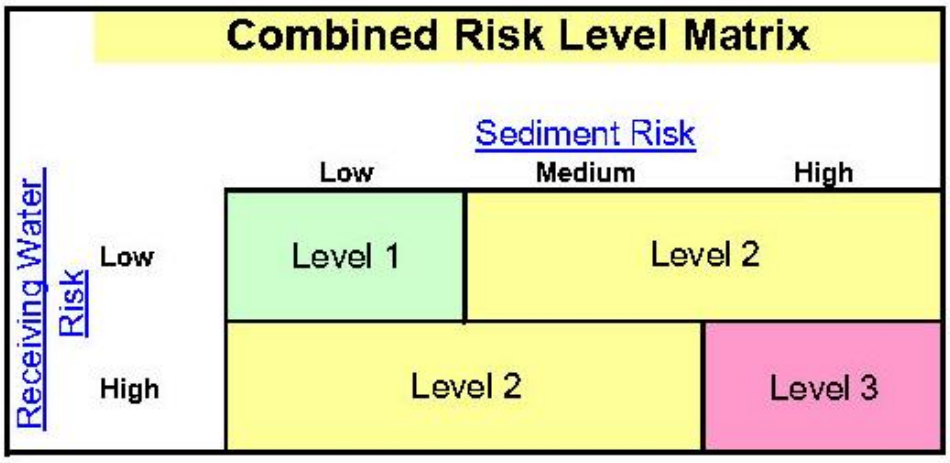
The Risk Determination Excel spreadsheet from Appendix 1 of the California General Permit (CGP) was used to determine the risk level (RL) for the Project site. The RL considers a project's sediment risk and risk to the receiving water to determine a project risk level. The Project was identified to have a Level 2 Combined Risk. Supporting documentation is summarized below and is provided in detail in Attachment 3.

Sediment Risk Factor Determination:

R Factor: 9.33 (EPA Rainfall Erosivity Factor Calculator for Small Construction Sites)
K Factor: 0.15 (Caltrans Water Quality Planning Tool)
LS Factor: 2.54 (Caltrans Water Quality Planning Tool)
Site Sediment Risk Factor: Low (<15 tons/acre)

Receiving Water Risk Factor Determination

Receiving Water Risk Factor: High



Construction Site Stormwater BMPs

Construction site stormwater BMPs would follow the Caltrans Construction Site Best Management Practices Manual (Caltrans 2017) and the TRPA BMP Handbook (TRPA 2014) to control and minimize the impacts of construction related activities. A Stormwater Pollution Prevention Plan (SWPPP) will be developed and submitted to the County and Lahontan RWQCB to comply with the National Pollutant Discharge Elimination System (NPDES) Construction Storm Water NPDES Permit for the Tahoe Basin (Order No. R6T-2016-0010 NPDES No. CAG616002). At the PS&E phase, the County will review and approve the SWPPP prior to information being submitted in Caltrans Stormwater Multiple Application Report Tracking System (SMARTS). The County will submit the Notice of Intent (NOI) to the Lahontan RWQCB prior to construction. The following BMPs, at a minimum, are required at the site during construction:

- A dewatering/diversion plan will be developed as part of the SWPPP, if the need for dewatering is anticipated.
- Temporary erosion and sediment control BMPs to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff (such as silt fence, erosion control fabric, fiber rolls).
- Tracking controls (such as designated ingress and egress areas) and designated staging areas outside of drainage, swale, and Stream Environment Zone (SEZ) areas. Staging area to be restored in accordance with TRPA Code Section 61.4 (Revegetation).
- Temporary BMPs to prevent wind erosion and sediment transport of disturbed areas, such as use of water for dust control and covering of stockpiles.
- Limit grading to May 1 through October 15, unless an exemption is granted by TRPA. At the end of the grading season or before completion of the project, all surplus or waste earthen materials from the project site would be removed and disposed of at a TRPA approved disposal site or stabilized on-site in accordance with TRPA regulations.
- Implement a Spill Prevention Plan. Project contractors would be responsible for storing on-site materials and temporary BMPs capable of capturing and containing pollutants.
- Use of vegetation protection fencing to prevent damage to trees or other vegetation where possible.
- Use of construction boundary fencing to limit land disturbance to ESA and areas not planned for construction.
- Temporary erosion and sediment control devices will be placed to protect sediment laden runoff from discharging from the site.
- Temporary clear water diversion BMPs may be implemented, as needed, to convey flows around the project site.

4. Maintenance BMPs

The Project is within the boundary of an MS4 Permit area and pedestrian and bicycle traffic are permitted within the project limits. Therefore, drainage inlet stenciling is required within Caltrans ROW. Maintenance Vehicle Pullouts (MVP) are not part of this Project.

5. Other Water Quality Requirements and Agreements

The Caltrans NEAT Report dated March 2010 identifies the Project area as being located within a Natural Environment as Treatment (NEAT) designation of Modified NEAT (Attachment 7). These sections of roadway require minor modification to adequately address stormwater runoff. These types of modifications might include minor grading, promotion of sheet flow, enhancement of vegetation, and construction of an energy dissipation feature. Although projects located within the County are not required to follow the NEAT approach, when opportunities exist, standard engineering best practices are applied to follow LID, which includes sheet flow and utilizing existing stormwater features for storage/treatment.

The County will consult with the Lahontan RWQCB or TRPA to discuss specific Treatment BMPs for this Project. The regulatory agencies will have an opportunity to provide feedback during the upcoming review process of the Draft Environmental Document and also during design (60% and 90% level designs).

6. Permanent BMPs

Rapid Stability Assessment

The Caltrans NPDES permit mandates that a rapid stability assessment (RSA) be conducted during planning and design for all projects that will include 1 acre or more of net new impervious surface and for which any new impervious portion of the project drains to a stream crossing located within the project limits. Since the NNI for the State ROW portion of this project is 0.55 acres, RSA is not required.

Design Pollution Prevention (DPP) BMP Strategy

The Project area is located within the Upper Truckee River subwatershed within the Lake Tahoe Basin. Meyers Creek, a stream included in both the United States Geological Survey topographic map and in the National Hydrography Dataset (NHD), crosses US 50 in an existing 2 foot (ft) by 4 ft box culvert near the southernmost project boundary (intersection of US 50 and Santa Fe Road). Meyers Creek then flows north through a wetland paralleling US 50 to the west of the Project.

The proposed site drainage will generally maintain existing drainage patterns. A localized high point on US 50 occurs approximately 300 feet north of the Santa Fe Road/Apache Ave and US 50 intersection such that flows are conveyed to the south along existing curb and gutter to the intersection. From the localized high point, northward flows will be conveyed via curb and gutter. Along the southbound lane, flows will be collected and treated in dual traction sand traps before being conveyed via a 12-inch pipe to a junction with the existing 18-inch reinforced concrete pipe (RCP) under US 50 located approximately 250 feet north of the Pioneer Trail and US 50 intersection. A traction sand trap will be integrated at the pipe junction to maintain existing drainage patterns.

At the US 50/Pioneer Trail intersection within the Caltrans ROW, the existing dual traction sand traps at the southeast corner of the intersection will be removed. Maintenance staff have noted that standing water is an issue at this corner of the intersection. New catch basins with 1-foot sumps will be installed within the Caltrans ROW along the curb and gutter at the southeast corner to capture flows. These two catch basins will be connected via laterals to a storm drain pipe under Pioneer Trail. The storm drain pipe will outlet into an infiltration basin located adjacent to the northeast corner of the intersection. Two additional catch basins with sumps will be installed along the northeast corner of the intersection within the Caltrans ROW. One catch basin will connect via a lateral to the storm drain pipe under Pioneer Trail. The other catch basin

will be connected to a lateral which will outlet directly into the infiltration basin. Both pipes discharging into the infiltration basin will include flared end sections, and where design warrants, outlet protection/energy dissipation devices.

The NHD mapping shows two additional 'flow lines' crossing the roadways within the Project area. Flows along Pioneer Trail are conveyed toward the intersection with US 50 in curb and gutter along both the east and west bound lanes. Approximately 220 feet from the Pioneer Trail and US 50 intersection, an 18-inch corrugated metal pipe (CMP) conveys snowmelt and runoff from the undeveloped uplands and adjacent neighborhood under Pioneer Trail toward the north. This existing culvert will remain in place and will be extended on both sides to match the limits of the proposed grading. Once leaving the CMP, flows will be conveyed in an existing shallow channel toward the second mapped NHD flow line crossing under US 50 approximately 250 feet north of the Pioneer Trail and US 50 intersection in an existing 18-inch RCP. This culvert will be modified as described above to integrate a new traction sand trap.

The NHD mapped flow lines are ephemeral drainages which convey snowmelt and runoff from the undeveloped upland and the adjacent neighborhoods. As such, there are regular periods of time where these drainages are dry. As discussed above in the Geotechnical Data, groundwater was not encountered to a depth of 11.5 feet at the borings. Therefore, it is not anticipated that groundwater will restrict the design of the proposed Treatment BMPs.

Downstream Effects Related to Potentially Increased Flow

The intent of the drainage design is to maintain existing flow patterns to the maximum extent possible.

The project proposes to increase the amount of impervious area. Based on this increase, it is anticipated that the project will have some effect on downstream flow and will result in an increased runoff volume. This increased volume will be partially mitigated through the implementation of an infiltration basin sized to contain and treat the Water Quality Volume (WQV) and runoff volumes from Project areas not draining to the infiltration basin will not have an adverse effect on downstream facilities. The infiltration basin will reduce runoff volumes from regular precipitation events from the portion of the Project area that drains to it.

An increased flow velocity is not anticipated in the channel downstream of the culvert under US 50 located to the north of the US 50/Pioneer Trail intersection as flow velocities are slightly attenuated as they pass through the system of dual traction sand traps before discharging into the cross culvert and downstream channel. Hydraulic conditions will be determined during the PS&E phase of the Project.

Increased flow velocity and volumes will be quantified and mitigated during PS&E phase of the project. The project's Drainage Report will evaluate options to reduce runoff to preconditions.

Slope/Surface Protection Systems

The Project will be modifying the existing slopes in the State ROW due to road reconfiguration of the proposed roundabout. The fill slopes will be regraded where the slopes are maintained to be less than 2:1 (h:v). An erosion control plan will address the stabilization of these slopes. New slopes and Disturbed Soil Areas (DSA) will be stabilized and vegetated in accordance with plans ~~approved~~ by the Caltrans District Landscape Architect.

NJ reviewed and conccured by

Concentrated Flow Conveyance Systems

Flared end sections will be installed on the culvert inlets and outlets. Outlet protection/energy dissipation devices will be implemented at outlets to reduce turbulence and scour, as needed. Hydraulic conditions will be determined during the PS&E phase of the Project.

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

Construction boundary fencing will be installed to limit land disturbance to ESA and areas not planned for construction. Revegetation of the impacted areas will consider soil types, existing vegetation types, and level of maintenance. Vegetated areas and supporting permanent irrigation systems will be designed to comply with the Model Water Efficient Landscape Ordinance (MWELO).

Treatment BMP Strategy

This Project is required to consider Treatment BMPs in accordance with the attached Evaluation Documentation Form (Attachment 2). Sediments~~No Targeted Design Constituents (TDC)~~ have been identified as Targeted Design Constituent (TDC). This Project is ~~not~~ within a TMDL area and therefore is eligible for Compliance Units (CU). IB

Treatment BMPs will be designed and constructed to comply with the NPDES Construction Storm Water NPDES Permit for the Tahoe Basin (Order No. R6T-2016-0010 NPDES No. CAG616002). Per the Permit, storm water runoff from impervious surfaces and other developed areas where natural percolation of precipitation is impeded following completion of construction should be treated with permanent storm water infiltration facilities designed and constructed to infiltrate runoff generated by the 20-year, 1-hour storm event which equates to approximately 1-inch of runoff during a 1-hour period. Treatment BMPs sized on a water quality flow (WQF) will apply a precipitation intensity of 0.2 inches/hours per Section 5.3.3.3 of the Caltrans Stormwater Quality Handbook: Project Planning and Design Guide (PPDG) for Region 6 (Lahontan).

Treatment BMPs will be considered in the following order of priority; infiltrate, harvest, and reuse; treatment of excess runoff using low impact development (LID) based flow-through BMPs; treatment using existing BMPs (with an emphasis on low impact green BMPs), and off-site mitigation. The Treatment BMPs will provide reduction of Phosphorus, Nitrogen, and Sediment loads.

The Project is proposing to install permanent Treatment BMPs to meet County, TRPA, Caltrans, and Federal Standards. Treatment BMPs will be installed to address the PCTA. These water quality features include the following:

- New infiltration basin constructed at the northeast corner of the proposed roundabout intersection, sized to store the anticipated WQV and includes overflow features for conveyance of larger storm events
- An existing culvert located 220 feet east of the intersection on Pioneer Trail will be extended on both sides to accommodate limits of proposed grading
- Modification of an existing RCP culvert located 250 feet north of Pioneer Trail, to tie in two relocated traction sand traps via a new lateral pipe and one new traction sand trap on the western shoulder of southbound US 50. The existing, dual traction sand traps treat approximately 0.65 acres of impervious surface associated with US 50. Since traction sand is typically applied more than twice a year to the roads within the Project area, the traction sand traps will provide a means for capturing the coarse sediments prior to flows entering the cross culvert and creek channel.
- The existing dual traction sand traps will be replaced with two new catch basins with 1-foot sumps installed at the southeast corner to capture flows and perpetuate existing drainage patterns. The existing dual traction sand traps treated 0.33 acres of impervious surface of US 50 and 0.19 acres of Pioneer Trail impervious surface. The two new catch basins will be connected via laterals to a storm drain pipe under Pioneer Trail to outlet to the new infiltration basin at the northeast corner of the roundabout intersection. Since traction sand is typically applied more than twice a year to the roads within the Project

area, the sumps will provide a means for capturing the coarse sediments prior to conveyance to the infiltration basin.

- Two additional catch basins with sumps would be installed along the northeast corner of the intersection to capture runoff from Pioneer Trail and US 50; one to be connected via a lateral to the storm drain pipe under Pioneer Trail, and the other connected to a lateral which outlets directly into the infiltration basin. Both pipes discharging into the infiltration basin would include flared end sections, and where design warrants, additional outfall protection

The Project cost estimate developed as part of the Pioneer Trail/US 50 Intersection Safety Improvement Project Intersection Control Evaluation for the Roundabout design alternative was $5,250,000. Costs related to Design Pollution Prevention and Treatment BMPs are approximately $100,000.

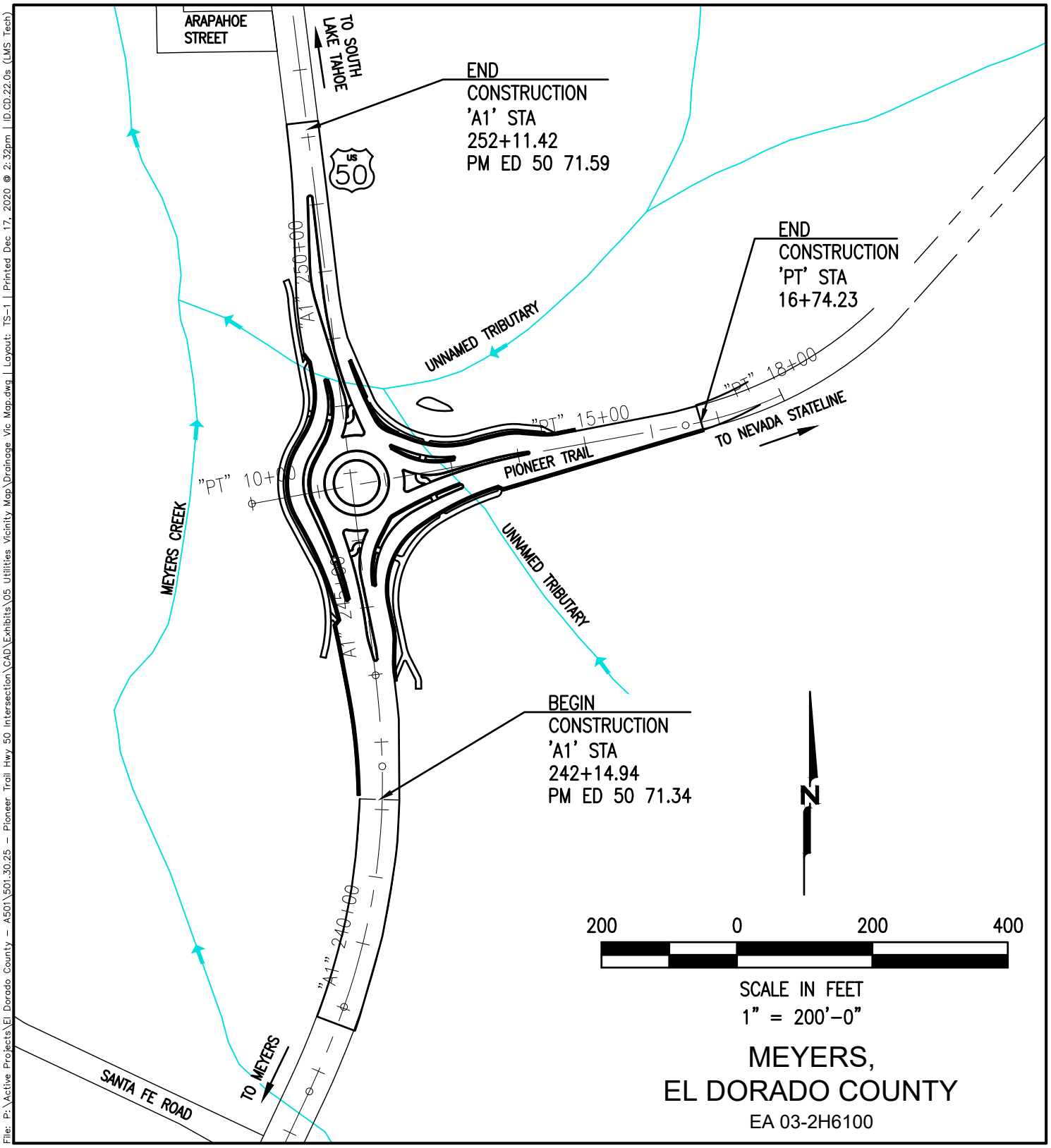
Required Attachments

1. Vicinity Map
2. Evaluation Documentation Form
3. Risk Level Determination Documentation
4. Construction Site BMP Consideration Form

Supplemental Attachments

5. Disturbed Soil Area
6. Impervious Area
7. Additional Treated Area
8. NEAT Report Excerpt

Attachment 1
Vicinity Map



File: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\CAD\Exhibits\05 Utilities Vicinity Map\Drainage Vic Map.dwg | Layout: TS-1 | Printed Dec 17, 2020 @ 2:32pm | ID.CD.22.0s (LMS Tech)

NCE
1885 S. Arlington Ave.,
Suite 111
Reno, NV 89509
(775) 329-4955

PIONEER TRAIL/US 50 INTERSECTION
SAFETY IMPROVEMENT PROJECT
VICINITY MAP

FIGURE
A.1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
SPT	501.30.25	ADH	07-31-2020		12-17-2020

Attachment 2
Evaluation Documentation Form

DATE: _December 2020_____

Project ID (EA): __03-2H6100_____

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to Areas of Special Biological Significance (ASBS), or b. discharge to a TMDL watershed where Caltrans is named stakeholder, or c. have other pollution control requirements for surface waters within the project limits?	 ✓ ✓	✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. IB *(Dist./Reg. Coordinator initials)* If **No** to all, continue to 5.
5.	Are any existing Treatment BMPs partially or completely removed? (ATA Condition 1, Section 4.4.1)	✓		If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of one acre or more of new impervious surface (NIS)?		✓	If **Yes**, go to 8. If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _____ *(Dist./Reg. Design SW Coord. Initials)* _____ *(Project Engineer Initials)* _____ *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

Attachment 3
Risk Level Determination Documentation

Project Risk Factor:

R Factor

The R factor for the project is calculated using the online calculator at: https://lew.epa.gov

Facility Information

Start Date: 05/01/2022	**Latitude:** 38.8595
End Date: 10/31/2022	**Longitude:** -120.0121

Calculation Results

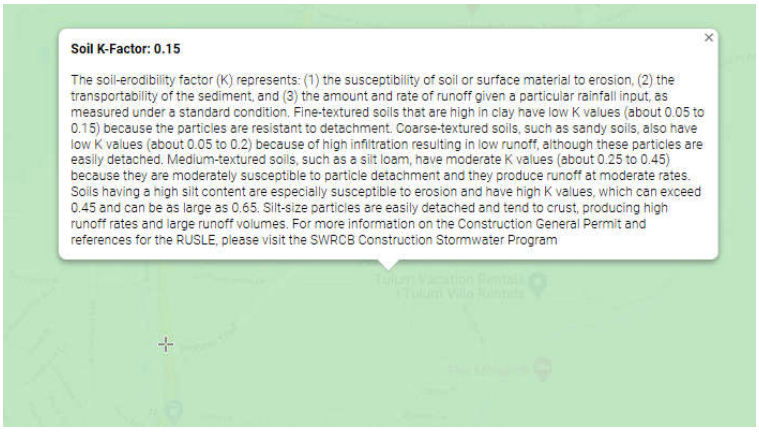
Rainfall erosivity factor (R Factor) = **9**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

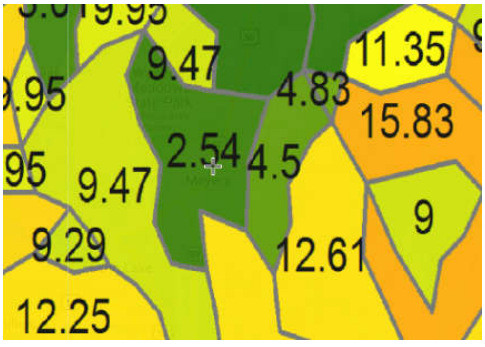
You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

K Factor

The K and LS factors may be obtained by accessing the GIS maps located on the State Water Board FTP website at: ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/Risk/



LS Factor



Sediment Risk Factor Worksheet	Entry

A) R Factor

Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.

http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm

R Factor Value	9

B) K Factor (weighted average, by area, for all site soils)

The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.

Site-specific K factor guidance

K Factor Value	0.15

C) LS Factor (weighted average, by area, for all slopes)

The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.

LS Table

LS Factor Value	2.54

Watershed Erosion Estimate (=RxKxLS) in tons/acre	3.429
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	yes/no	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	yes	High
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml		

Region 1 Basin Plan

Region 2 Basin Plan

Region 3 Basin Plan

Region 4 Basin Plan

Region 5 Basin Plan

Region 6 Basin Plan

Region 7 Basin Plan

Region 8 Basin Plan

Region 9 Basin Plan

Combined Risk Level Matrix

Receiving Water Risk \ Sediment Risk	Low	Medium	High
Low	Level 1	Level 2	
High	Level 2		Level 3

Project Sediment Risk: Low

Project RW Risk: High

Project Combined Risk: Level 2

Attachment 4
Construction Site BMP Consideration Form

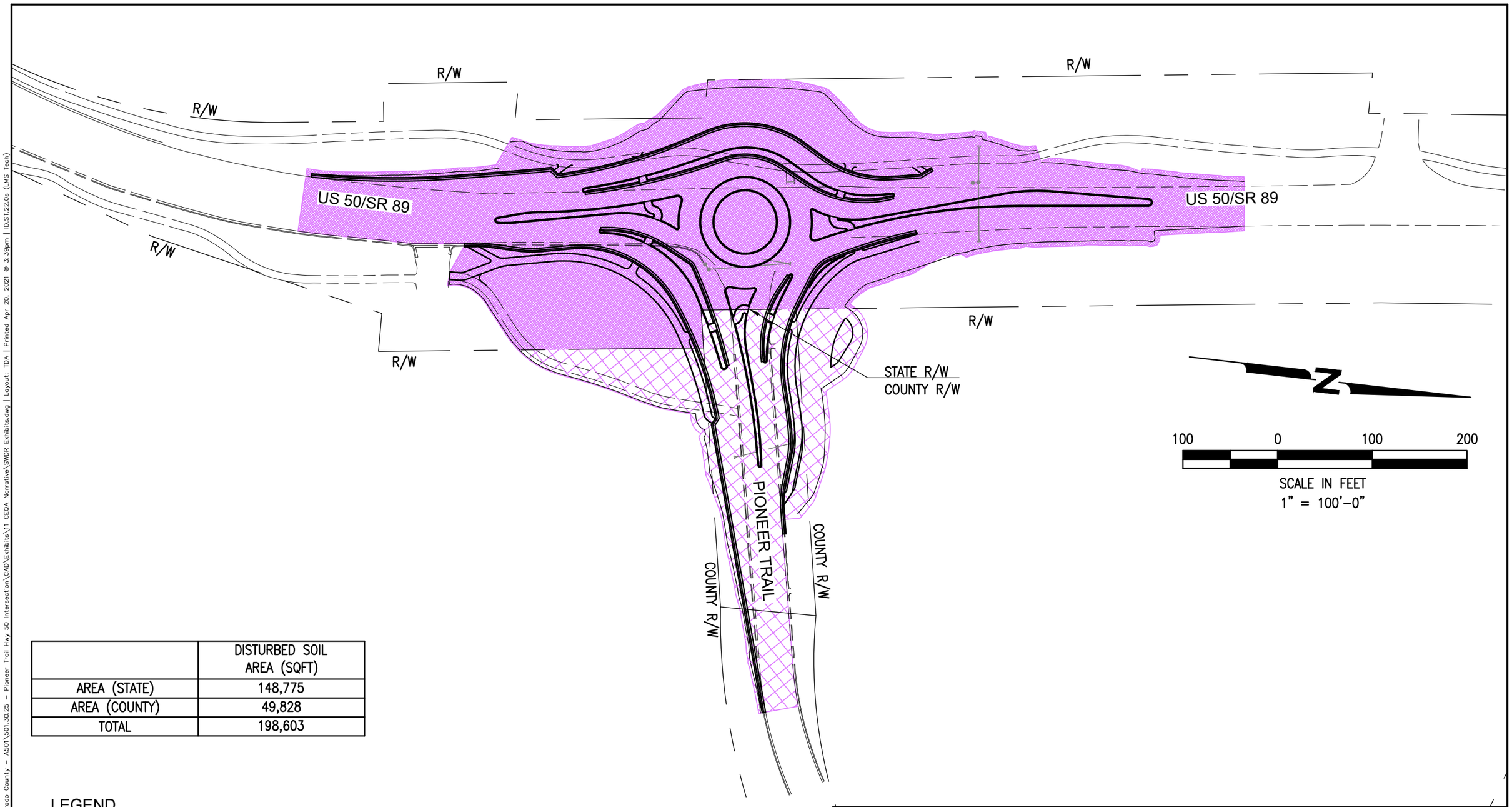
DATE: ___December 2020_____

Project ID / EA: ____03-2H6100_____

Project Evaluation Process for the Consideration of Construction Site BMPs

No.	Criteria	Yes ✓	No ✓	Supplemental Information
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Review CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the RW, etc.?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Review CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Review CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Review CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with stormwater; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6.

Attachment 5
Disturbed Soil Area



	DISTURBED SOIL AREA (SQFT)
AREA (STATE)	148,775
AREA (COUNTY)	49,828
TOTAL	198,603

LEGEND

DISTURBED SOIL AREA (STATE)

DISTURBED SOIL AREA (COUNTY)

NCE
1885 S. Arlington Ave.,
Suite 111
Reno, NV 89509
(775) 329-4955

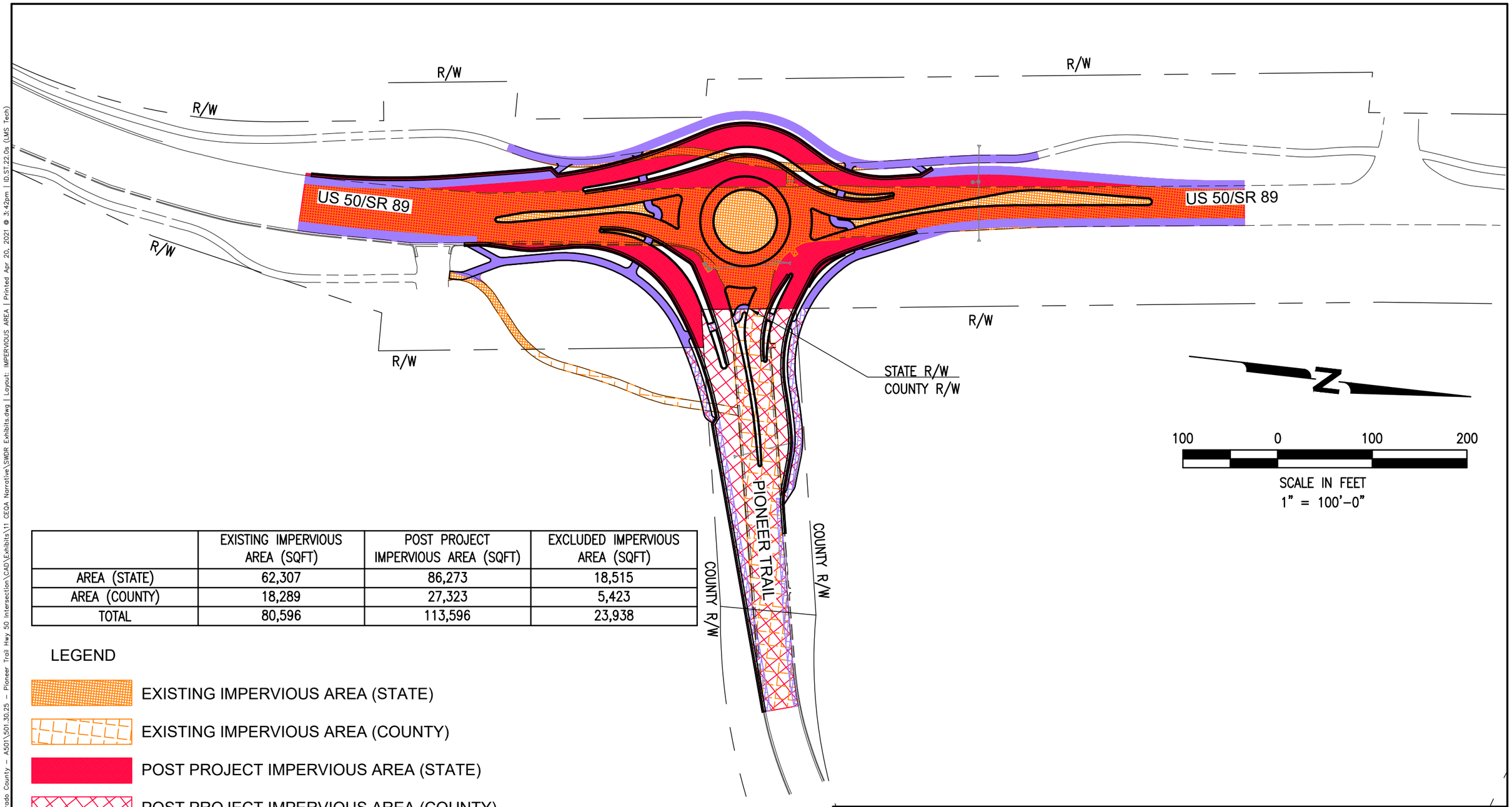
PIONEER TRAIL/US 50 INTERSECTION
SAFETY IMPROVEMENT PROJECT
DISTURBED SOIL AREA

FIGURE
A.5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SPT	501.30.25	ADH	07-30-20	

File: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\CAD\Exhibits\11 CEQA Narrative\SWDR Exhibits.dwg | Layout: TDA | Printed Apr 20, 2021 @ 3:39pm | ID:ST:22.0s (LMS Tech)

Attachment 6
Impervious Area



	EXISTING IMPERVIOUS AREA (SQFT)	POST PROJECT IMPERVIOUS AREA (SQFT)	EXCLUDED IMPERVIOUS AREA (SQFT)
AREA (STATE)	62,307	86,273	18,515
AREA (COUNTY)	18,289	27,323	5,423
TOTAL	80,596	113,596	23,938

LEGEND

- EXISTING IMPERVIOUS AREA (STATE)
- EXISTING IMPERVIOUS AREA (COUNTY)
- POST PROJECT IMPERVIOUS AREA (STATE)
- POST PROJECT IMPERVIOUS AREA (COUNTY)
- EXCLUDED IMPERVIOUS AREA (STATE)
- EXCLUDED IMPERVIOUS AREA (COUNTY)

NCE
1885 S. Arlington Ave.,
Suite 111
Reno, NV 89509
(775) 329-4955

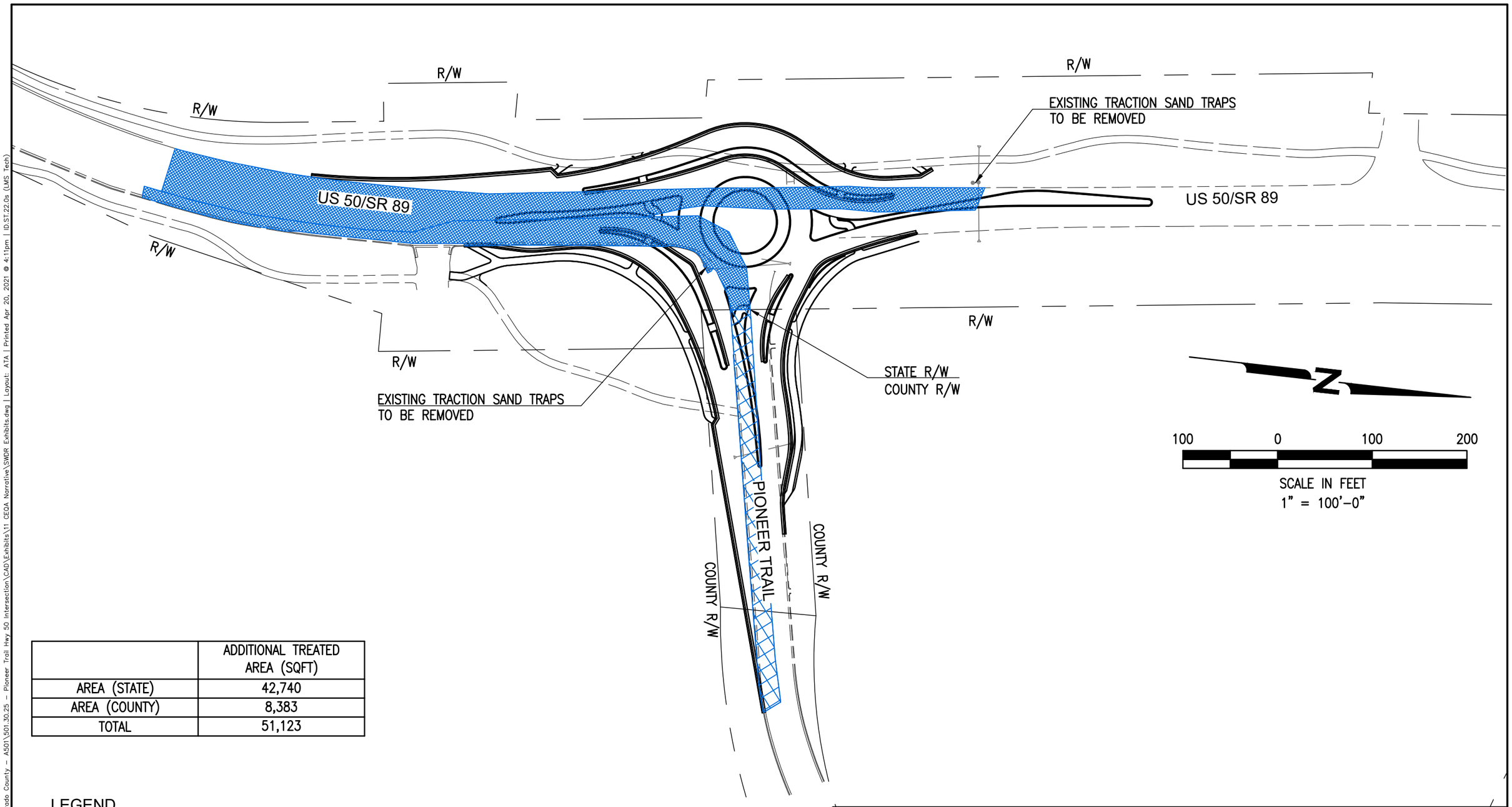
PIONEER TRAIL/US 50 INTERSECTION
SAFETY IMPROVEMENT PROJECT
IMPERVIOUS AREA

FIGURE
A.6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SPT	501.30.25	ADH	07-30-20	

File: P:\Active Projects\El Dorado County - A501\501.30.25 - Pioneer Trail Hwy 50 Intersection\CAD\Exhibits\11 CEQA Narrative\SWDR Exhibits.dwg | Layout: IMPERVIOUS AREA | Printed Apr 20, 2021 @ 3:42pm | ID.ST.22.0s (LMS Tech)

Attachment 7
Additional Treated Area



	ADDITIONAL TREATED AREA (SQFT)
AREA (STATE)	42,740
AREA (COUNTY)	8,383
TOTAL	51,123

LEGEND

ADDITIONAL TREATED AREA (STATE)

ADDITIONAL TREATED AREA (COUNTY)

NCE
1885 S. Arlington Ave.,
Suite 111
Reno, NV 89509
(775) 329-4955

PIONEER TRAIL/US 50 INTERSECTION
SAFETY IMPROVEMENT PROJECT
ADDITIONAL TREATED AREA

FIGURE
A.7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SPT	501.30.25	ADH	07-30-20	

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Attachment 8
NEAT Report Excerpt

73.5

73

EL DORADO
COUNTY

50

72.5

Project Area

Placer
LAKE TAHOE
El Dorado
Alpine
NORTH

Post Mile
NEAT
Modified NEAT
Treatment

NEAT RESULTS

CALTRANS DISTRICT 3

LAKE TAHOE, CALIFORNIA

MARCH, 2010

NOTES

NORTH

0 250 500

Feet

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
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APPENDIX J

TRAFFIC OPERATIONS ANALYSIS REPORT

PIONEER TRAIL/US HIGHWAY 50 INTERSECTION SAFETY IMPROVEMENT PROJECT

COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

INTEROFFICE MEMORANDUM

Date: December 28, 2017

To: John Kahling, P.E., Deputy Director of Engineering

From: Katie Jackson, P.E., T.E., Long Range Planning

Subject: Traffic Operations Analysis for the US Highway 50 / Pioneer Trail Intersection Safety Improvement Project

This memorandum summarizes the results of the traffic operations analysis for the Capital Improvement Program (CIP) Project #72379, US Highway 50 / Pioneer Trail Intersection Safety Improvement Project, in Meyers, California. This intersection is located in the Tahoe Basin. Traffic levels at this location are highly variable throughout the year, as the intersection serves tourist traffic to/from Lake Tahoe, the State of Nevada, and a variety of other outdoor activities, including skiing, snowboarding, hiking, camping, and the access to the Rubicon Trail. Traffic levels can vary significantly based on weather, economic conditions, special events, and other factors. Both US Highway 50 (US 50) and Pioneer Trail are heavily travelled routes between Meyers and the City of South Lake Tahoe. Figure 1 displays the study area.



Figure 1: Study Area

Project Background and Description

This project was added to the County's CIP on March 28, 2017. This project was identified as a needed safety improvement in the *Meyers Road Safety Audit* (Federal Highway Administration (FHWA) Resource Center and Tahoe Regional Planning Agency (TRPA), 2016). The improvement strategies identified for this location include improving intersection sight distance and improving/extending bike and pedestrian facilities through the intersection. Additionally, the document noted that this intersection is the gateway to Meyers and consideration should be given to intersection types that encourage slower speeds, primarily a roundabout. Refer to the technical appendix for the *Meyers Road Safety Audit Report*. Two intersection types were selected for this traffic operations analysis: a traffic signal and roundabout.

The intersection is currently signalized. Figure 2 shows the existing lane configurations. The northbound approach has one through lane and one right-turn lane with overlap right-turn phasing. The westbound approach has a single lane, with a wide shoulder that can accommodate one or two right-turn vehicles. The southbound approach has a one through lane and one left-turn lane. According to Caltrans Functional Classification System, US 50 is a Class 3: Other Principal Arterial roadway and Pioneer Trail is a Class 4: Minor Arterial roadway.



Figure 2: Existing Lane Configurations

The signalized intersection improvement option would increase capacity at the intersection by providing additional lanes through the intersection and free right-turn movements. Figure 3 displays the preliminary draft layout for the signalized improvement. The northbound approach would maintain one through lane, but the right-turn pocket would be replaced with a free right-turn lane. Motorists travelling north on US 50 to Pioneer Trail would no longer stop at the traffic signal. The westbound approach would be widened from a single lane to include two left-turn lanes and a free right-turn lane. The southbound approach would include a single through lane and a left-turn lane, which is the same as the existing configuration; however the turn pocket would be extended to provide more capacity. Crosswalks would be provided on the westbound and northbound approaches and tie into the proposed extension of a Class I (off-street) bike path south of the intersection. This would require pedestrians to cross the free right-turn lane. The free right-turn lane should be designed to keep vehicle speeds low to facilitate pedestrian movements at this location.

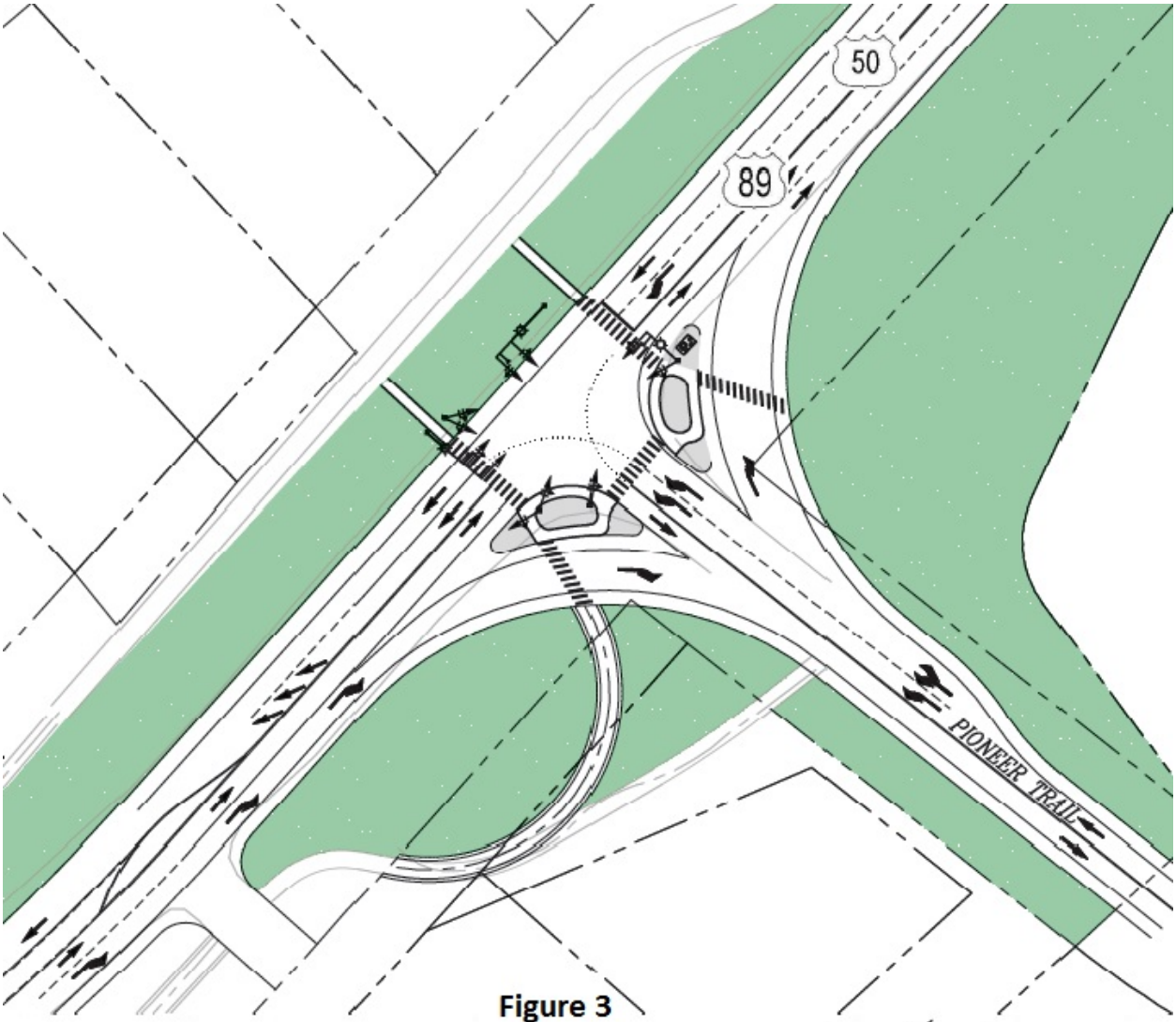


Figure 3

SIGNALIZED INTERSECTION OPTION

Not to Scale

Figure 4 displays the preliminary draft layout for the multi-lane roundabout. The multi-lane roundabout alternative would provide one through lane and one right-turn bypass lane on the northbound approach, a left-turn lane and a shared left/right-turn lane on the westbound approach, and a through lane and a shared through/left-turn lane on the southbound approach. Crosswalks would be provided on all three legs and tie into the proposed extension of a Class I (off-street) bike path. The roundabout would be designed with a splitter island on each approach leg, which provides a refuge area for pedestrians in the crosswalk. Pedestrians would only have to cross one direction of traffic at a time.

Alternative lane configurations for the roundabout were considered, but ruled out due to capacity constraints. The operations results for a single lane roundabout are shown in this memorandum for reference. Refer to the appendix for technical calculations for the other roundabout configurations.

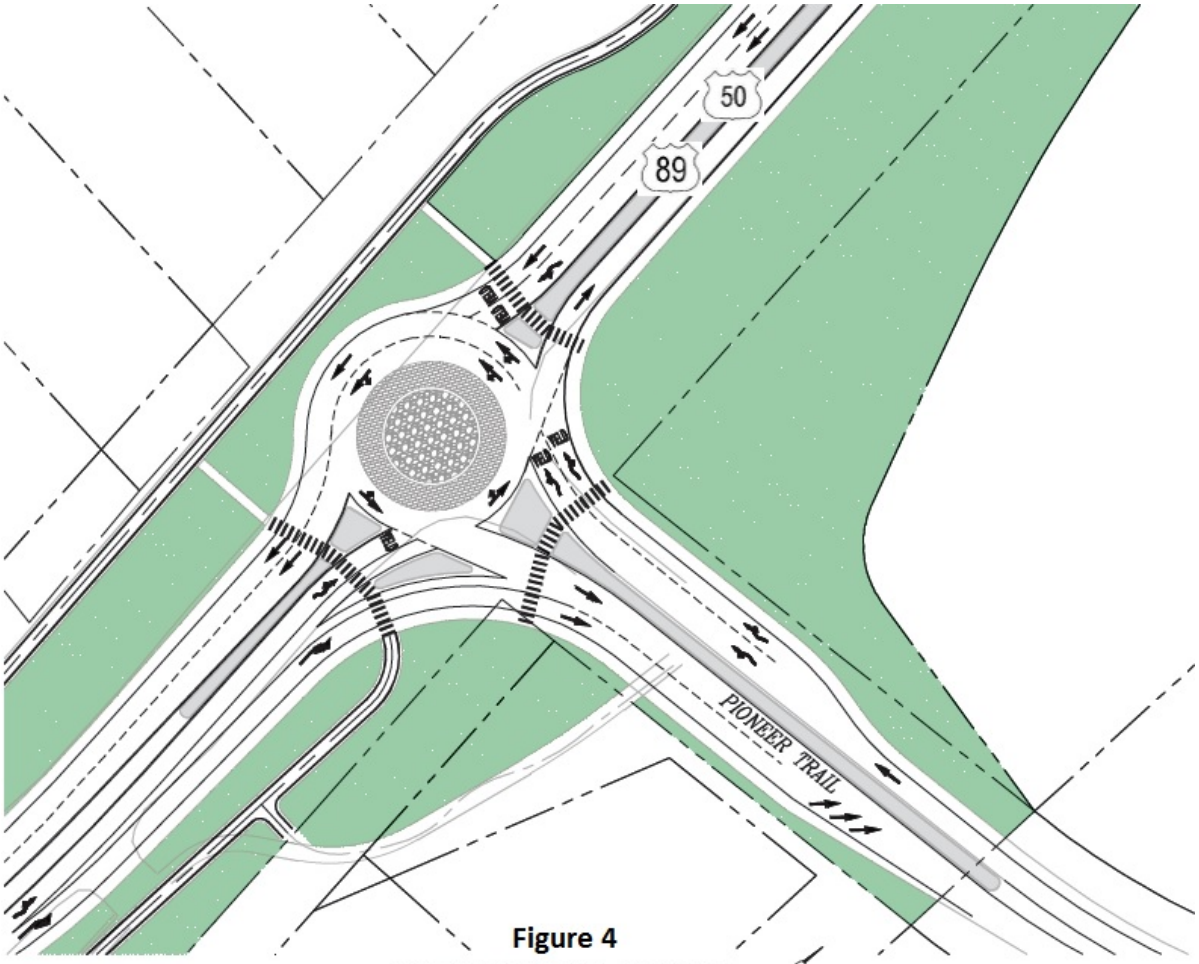


Figure 4
ROUNDABOUT OPTION
Not to Scale

Analysis Methodology and Regulatory Documents

This study analyzed the peak four hours of a typical summer weekend in August. The peak four hour period was selected based on the traffic operations standards outlined by TRPA and the County's planning documents. Based on personal communication with TRPA staff, the preferred analysis period is a summer weekend in August. This is when traffic volumes are typically at their peak. However, traffic congestion

tends to peak in the winter, due to chain restrictions, weather, avalanche control, etc. This is discussed in more detail in the Data Collection section below.

The analysis assigns a Level of Service (LOS) to the intersection for each peak hour to describe traffic operations. LOS is a qualitative measure of traffic operating conditions ranging from LOS A to LOS F. The grades are assigned based on the average duration of delay associated with a given traffic control device. In general, LOS A represents free-flow conditions with very little delay, while LOS F represents over-capacity conditions with long delays and queues. The study intersections were analyzed using the procedures and methodologies contained in the *Highway Capacity Manual (HCM)* (Transportation Research Board, 2016). The methodology for the roundabout option is based on 6th Edition of the HCM, which is based on the *Assessment of Roundabout Capacity Models for the Highway Capacity Manual: Volume 2 of Accelerating Roundabout Implementation in the United States* (Report FHWA-SA-15-070) (FHWA, 2015). LOS standards are set by Caltrans, TRPA, and the County.

Caltrans identifies LOS standards for its facilities in the *US Highway 50 Transportation Concept Report/ Corridor System Management Plan (TCR/CSMP)* (Caltrans, 2014). The document identifies the Concept LOS, which Caltrans considers the minimum acceptable LOS for each segment of US 50. The Concept LOS for this segment is LOS D.

TRPA identifies its LOS thresholds in Policy 4.6 of the *Linking Tahoe: Regional Transportation Plan* (TRPA, April 2017):

> "Level of Service (LOS) criteria for the Region's highway system and signalized intersections during peak periods shall be: "C" on rural recreational/scenic roads; "D" on rural developed area roads; "D" on urban developed area roads; "D" for signalized intersections. Level of Service "E" may be acceptable during peak periods in urban areas, but not to exceed four hours per day. These vehicle LOS standards may be exceeded when provisions for multi-modal amenities and/or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users at a level that is proportional to the project-generated traffic in relation to overall traffic conditions on affected roadways."

The County also identifies a LOS standard in the *Meyers Community Plan* (El Dorado County, 1993) and the *Draft Meyers Area Plan* (El Dorado County, Final Draft 2017). Both documents state that the LOS at this intersection shall be maintained consistent with the policies of TRPA's RTP.

Given the various LOS standards discussed above, the standard of LOS D applies for this intersection. However, the intersection is allowed to operate at LOS E for fewer than four hours per day during peak periods. At signalized intersections and roundabouts, the HCM specifies that LOS is based on the average control delay for the entire intersection. Table 1 displays the control delay range associated with each LOS category.

Table 1: Intersection Level of Service Criteria			
Level of Service	Average Control Delay (seconds/vehicle)		Description
	Signalized	Roundabout	
A	< 10.0	< 10.0	Very low delay. At signalized intersections, most vehicles do not stop.
B	10.0 to 20.0	10.0 to 15.0	Generally good progression of vehicles. Slight delays.
C	20.1 to 35.0	15.1 to 25.0	Fair progression. At signalized intersections, increased number of stopped vehicles.
D	35.1 to 55.0	25.1 to 35.0	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.
E	55.1 to 80.0	35.1 to 50.0	Poor progression. High delays and frequent cycle failure.
F	> 80.0	> 50.0	Oversaturation. Forced flow. Extensive queuing.
Source: *Highway Capacity Manual* (Transportation Research Board, 2016)			

The HCM methodologies were applied using the Synchro 9 software for the signalized intersection and Highway Capacity Software 7 (HCS7) for the roundabout analysis. HCM methodology provides a calculation of LOS by accounting for traffic volumes, peak hour factors, traffic signal timings, lane configurations, speed limits, and other inputs.

Data Collection

Both US 50 and Pioneer Trail are heavily travelled routes between Meyers and the City of South Lake Tahoe. Traffic levels at this location are highly variable throughout the year, due to weather, economic conditions, tourist attractions, special events, and other factors. Traffic volumes at this location peak on Sunday afternoons when tourists leave the Tahoe Basin. The summer months typically have the highest traffic volumes, due to the wide range of tourist attractions throughout the Basin. However, traffic congestion is typically worse in the winter due to weather conditions, chain restrictions, avalanche control operations, etc. Anecdotal comments suggest that traffic congestion on peak Sundays can last 10-12 hours.

Traffic count data was collected on the following weekends:

- Friday, August 25, 2017 – Sunday, August 27, 2017
- Friday, October 13, 2017 – Sunday, October 15, 2017

The traffic counts were collected during peak travel times (3 PM – 7 PM on Friday, 10 AM – 12 PM and 4 PM – 6 PM on Saturday, and 11 AM – 3 PM on Sunday). The 2017 traffic counts were compared to traffic counts from early August 2010. The 2010 traffic counts are approximately 20 percent higher than the 2017 traffic counts, primarily on US 50. A review of Caltrans Performance Measurement System (PeMS) data indicates vehicular volumes drop off significantly from the beginning of August to the end of August each year. The 2017 late August traffic counts do not represent a peak summer weekend.

As stated above, TRPA's LOS policy allows for LOS E traffic operations for up to four hours per day during peak periods. Since the 2017 traffic counts were not collected during a peak weekend, they should

not be used for analysis. However, the 2017 traffic counts are included in the attached appendix for reference.

The most recent available peak summer weekend traffic counts for this intersection were collected on Sunday, August 8, 2010. Traffic counts were collected from 8:00 AM to 5:00 PM. Due to the high levels of tourist activity, traffic levels in the area typically peak just after the hotel check-out time of 11 AM. The count data indicates that the peak four hours of a typical summer weekend are 10:45 - 11:45 AM, 12:00 - 1:00 PM, 1:00 - 2:00 PM, and 2:00 - 3:00 PM. This is consistent with observed traffic conditions. The traffic count sheets are provided in the attached appendix.

Because more recent count data is not available, factors were used to grow traffic levels from 2010 to 2016 conditions. The Caltrans Count Book estimates traffic levels grew approximately 4 percent on US 50 at Pioneer Trail between 2010 and 2015, while the Caltrans PeMS identifies 2 percent growth during the same time period (PeMS Vehicle Detection Station 317710). Therefore, a growth rate of 0.6 percent per year (or 3 percent every 5 years) was applied to the count data. This is consistent with methodology provided by TRPA staff.

The intersection is currently over-capacity during the peak period on summer weekends, meaning the demand for travel exceeds the available capacity of the intersection. County staff indicate long queues on the southbound and westbound approaches to the intersection on Sunday afternoons. When intersections are over-capacity, traffic counts only indicate the number of vehicles that are served (i.e., travelled through the intersection during each hour). The traffic count does not account for the full traffic demand (i.e., the total number of vehicles that are waiting to proceed through the intersection). To account for the full traffic demand, count data from the PeMS database was compared to the count data at the intersection. The PeMS database uses detectors in the roadway to count the number of cars passing a certain point. Table 2 compares the southbound traffic counts from the PeMS detector on US 50 near Sawmill Road and the intersection counts for the same day and time period. As shown, the average count from the PeMS database is approximately 15 percent higher than the intersection count during the peak period. This means the traffic demand is approximately 15 percent higher than the count data. Therefore, the traffic counts for each peak hour were factored up by 15 percent to account for the unmet demand. Figure 5 shows the traffic volumes used for the analysis.

Table 2: Traffic Count Data – US 50 Southbound
Sunday, August 8, 2010

Time Period	PeMS Count	Intersection Count	Percent Difference
10:45 - 11:45 AM	1,027	669	35%
12:00 - 1:00 PM	982	756	23%
1:00 - 2:00 PM	933	842	10%
2:00 - 3:00 PM	886	939	-6%
		Average	**15%**

Source: Caltrans PeMS Vehicle Detection Station 317710

Existing Conditions

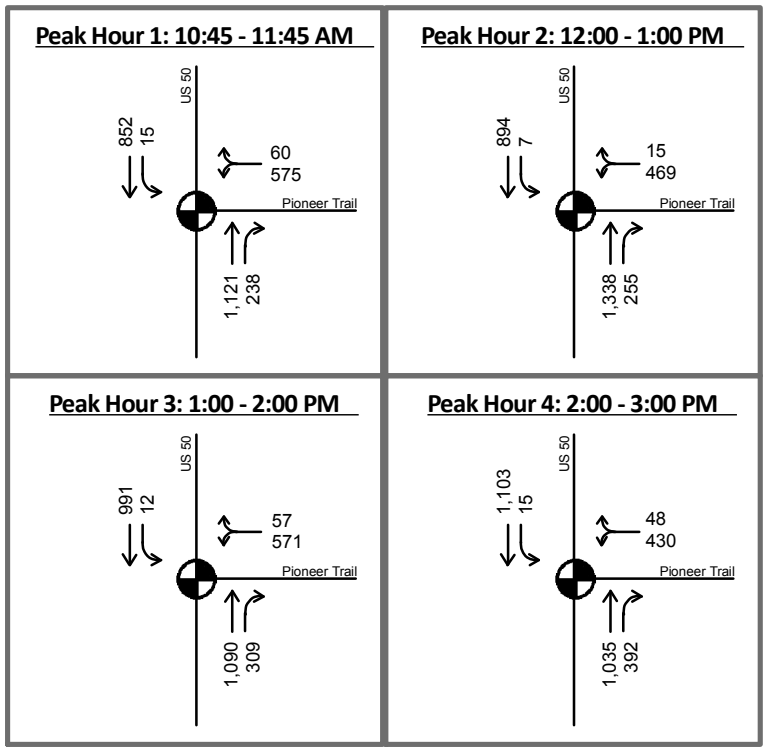
The traffic volumes shown in Figure 5 were used to analyze the LOS under existing conditions without and with the proposed intersection improvements. The results are summarized in Table 3 and the technical calculations are contained in the appendix. Currently, the intersection operates acceptably at LOS D for one of the four peak hours. The intersection operates unacceptably at LOS E or F between 10:45 and 2:00 PM. With the proposed signalized intersection improvements, traffic operations would be

acceptable at LOS D or better during all four hours of the peak period. Similarly, with the proposed multi-lane roundabout, the intersection would operate at LOS D or better during the peak period. However, it should be noted that the average control delay with the proposed multi-lane roundabout is significantly less than the signalized intersection. The single lane roundabout would operate at LOS F during all four peak hours. The single lane roundabout has less capacity than the existing signalized intersection.

Table 3: Peak Hour Intersection Traffic Operations
Existing 2016 Conditions – Summer Weekend

Scenario	10:45 – 11:45 AM		12:00 – 1:00 PM		1:00 – 2:00 PM		2:00 – 3:00 PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
No Project	**70**	**E**	**91**	**F**	**59**	**E**	39	D
Signalized Option	32	C	54	D	27	C	20	B
Roundabout – Single Lane	**137**	**F**	**134**	**F**	**149**	**F**	**119**	**F**
Roundabout – Multi-Lane	18	C	29	D	16	C	13	B

Notes: Analysis is based on the methodology and procedures in the Highway Capacity Manual (Transportation Research Board, 2016). Average delay is reported in seconds per vehicle. For signalized and roundabout intersections, the LOS is based on the average control delay for all approaches.
Bold text indicates LOS E or worse traffic operations. Shading indicates LOS F operations.



Legend

- Traffic Signal
- Turn Lane (No Project Conditions)
- XX Peak Hour Demand Volume

NOT TO SCALE



Figure 5
Peak Period Estimated Traffic Demand
Existing 2016 - Summer Weekend
US 50 / Pioneer Trail Intersection

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Construction Year 2019 Conditions

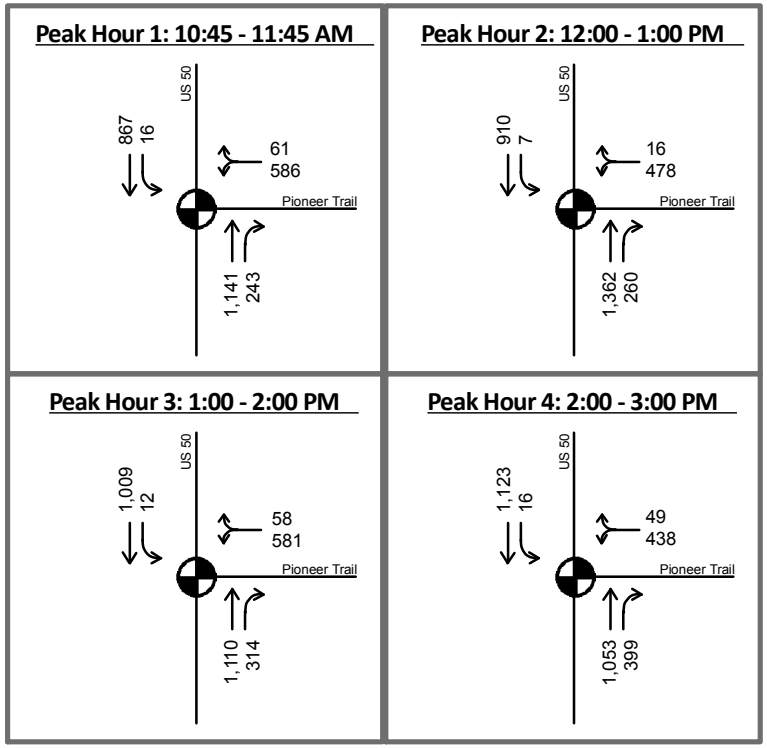
The proposed project is expected to be constructed and opened to traffic by the year 2019. Consistent with existing conditions, the growth rate of 0.6 percent per year was used to estimate the traffic volumes for this scenario, as shown on Figure 6.

Table 4 displays the traffic operations results for each alternative. In 2019, the current intersection configuration will continue to operate at LOS F for one of the peak hours and LOS E for two of the peak hours. The proposed signal improvement would operate at LOS E during one of the peak hours and at LOS D or LOS C during the other three peak hours. The proposed multi-lane roundabout would operate acceptably during all four peak hours under 2019 conditions. However, a single lane roundabout would operate at LOS F and would not meet the LOS standards set forth for this intersection by the County, Caltrans, and TRPA.

Table 4: Peak Hour Intersection Traffic Operations
Construction Year 2019 Conditions – Summer Weekend

	10:45 – 11:45 AM		**12:00 – 1:00 PM**		**1:00 – 2:00 PM**		**2:00 – 3:00 PM**	
Scenario	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
No Project	**75**	**E**	**96**	**F**	**64**	**E**	44	D
Signalized Option	36	D	**59**	**E**	30	C	21	C
Roundabout – Single Lane	**151**	**F**	**148**	**F**	**164**	**F**	**132**	**F**
Roundabout – Multi-Lane	20	C	32	D	18	C	14	B

Notes: Analysis is based on the methodology and procedures in the Highway Capacity Manual (Transportation Research Board, 2016). Average delay is reported in seconds per vehicle. For signalized and roundabout intersections, the LOS is based on the average control delay for all approaches.
Bold text indicates LOS E or worse traffic operations. Shading indicates LOS F operations.



Legend

- Traffic Signal
- Turn Lane (No Project Conditions)
- XX Peak Hour Demand Volume

NOT TO SCALE



Figure 6
Peak Period Estimated Traffic Demand
Construction Year 2019 - Summer Weekend
US 50 / Pioneer Trail Intersection

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Design Year 2039 Conditions

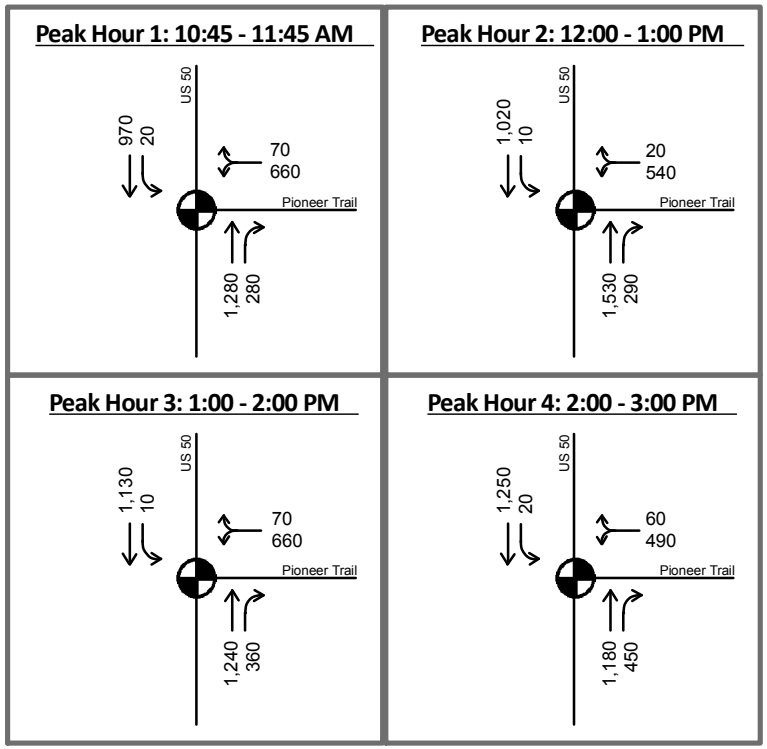
According to Caltrans Highway Design Manual Topic 103.2, the Design Year should be 20 years after construction of the facility, which is approximately 2039. Based on discussions with TRPA staff, the future year traffic forecasts were developed using the growth rate of 0.6 percent per year. The Design Year traffic volumes for the peak period are shown in Figure 7 and the traffic operations results are displayed in Table 5. The technical calculations are contained in the attached appendix.

As shown, without the proposed project and with the single lane roundabout the intersection would operate unacceptably at LOS F for all four of the peak hours. Both the signalized improvement and the multi-lane roundabout improvement would result in LOS F operations for one of the peak hours and LOS E or better for the other three peak hours. However, the average delay experienced by drivers with the multi-lane roundabout improvement is approximately 45 percent less than the signalized improvement for each of the peak hours.

Table 5: Peak Hour Intersection Traffic Operations
Design Year 2039 Conditions – Summer Weekend

	10:45 – 11:45 AM		**12:00 – 1:00 PM**		**1:00 – 2:00 PM**		**2:00 – 3:00 PM**	
Scenario	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
No Project	**114**	**F**	**138**	**F**	**98**	**F**	**82**	**F**
Signalized Option	**67**	**E**	**99**	**F**	55	E	40	D
Roundabout – Single Lane	**263**	**F**	**252**	**F**	**278**	**F**	**221**	**F**
Roundabout – Multi-Lane	**35**	**E**	**58**	**F**	29	D	21	C

Notes: Analysis is based on the methodology and procedures in the Highway Capacity Manual (Transportation Research Board, 2016). Average delay is reported in seconds per vehicle. For signalized and roundabout intersections, the LOS is based on the average control delay for all approaches.
Bold text indicates LOS E or worse traffic operations. Shading indicates LOS F operations.



Legend

- Traffic Signal
- Turn Lane (No Project Conditions)
- XX Peak Hour Demand Volume

NOT TO SCALE



Figure 7
Peak Period Estimated Traffic Demand
Design Year 2039 - Summer Weekend
US 50 / Pioneer Trail Intersection

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Mitigation Measures

A mitigation measure is proposed, because both the signalized option and the multi-lane roundabout are projected to exceed the LOS standard for one of the four peak hours under the Design Year 2039 scenario. Traffic operations of both options would be improved by adding a second northbound through lane. With the addition of the northbound through lane, both intersections would operate acceptably at LOS D or better throughout the peak period, as shown in Table 6. The additional northbound lane would help to accommodate the typical traffic levels entering the Tahoe Basin on Friday afternoons and holiday weekends. While this improvement would facilitate traffic flow through the intersection, the roadway segments on either side of the intersection would taper down to a single lane in each direction when exiting the roundabout which would continue to constrict traffic flow.

Table 6: Peak Hour Intersection Traffic Operations
Design Year 2039 Conditions With Mitigation – Summer Weekend

	Without Mitigation				**With Mitigation**			
	10:45 – 11:45 AM		**12:00 – 1:00 PM**		**10:45 – 11:45 AM**		**12:00 – 1:00 PM**	
Scenario	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Signalized Option	**67**	**E**	**99**	**F**	16	B	14	B
Roundabout – Multi- Lane	**35**	**E**	**58**	**F**	34	D	19	C

Notes: Analysis is based on the methodology and procedures in the Highway Capacity Manual (Transportation Research Board, 2016). Average delay is reported in seconds per vehicle. For signalized and roundabout intersections, the LOS is based on the average control delay for all approaches.
Bold text indicates LOS E or worse traffic operations. Shading indicates LOS F operations.

Collision Analysis

The Meyers Office of the California Highway Patrol provided a summary of collision data to the County for the *Meyers Road Safety Audit*. A review of the available collision data indicates 34 collisions occurred in the intersection between 2007 and 2015. There were no fatalities at the intersection; however one fatality was reported approximately 400 feet south of the intersection. There were 6 collisions with injuries, resulting in 8 injured motorists. There were 28 reported collisions that resulted in property damage only.

According to the Statewide Integrated Traffic Records System (SWITRS) the fatal collision occurred in 2012 (Case ID Number 5638393). The collision involved a vehicle and a pedestrian. The pedestrian was crossing US 50 in the dark and SWITRS records indicate that alcohol was involved.

Table 7 contains a brief summary of the data by year. The primary collision factor was Unsafe Speed for 20 of the 34 collisions. Of those, 14 collisions occurred when the roadway was snowy and/or icy. Three collisions occurred when the roadway was wet and three collisions occurred when conditions were dry/clear. It is important to note that the area has experienced severe drought conditions or worse since 2013, according to the United States Geological Survey (USGS). The recent decline in collisions may be related to fewer days with snowy/icy road conditions and/or decreased traffic levels during the winter.

In 2012, the intersection was identified as a high accident location by the *2011 Annual Accident Location Survey* (El Dorado County Department of Transportation, 2012). A field review and further collision analysis was performed. It was determined that most accidents at the intersection were the result of vehicles travelling at an unsafe speed in snowy and/or icy conditions. Most of the accidents occurred on

the northbound right-turn movement. County staff contacted Caltrans regarding the collision history. Both the County and Caltrans updated pavement legends and striping in the area.

Table 7: Collision History
US 50/Pioneer Trail Intersection

Year	Total Number of Reported Collisions	Number of Collisions Due to Unsafe Speed while Snowy/Icy
2007	2	0
2008	4	0
2009	6	4
2010	6	2
2011	7	5
2012	3	1
2013	2	0
2014	2	0
2015	2	2
Total	**34**	**14**

Source: California Highway Patrol, Meyers Office. Data provided for ***Meyers Road Safety Audit***.

Roundabouts

Roundabouts are a relatively new type of intersection in the United States. As such, this section provides a brief summary of their benefits and potential drawbacks. El Dorado County does not currently have any roundabouts, although several exist in surrounding jurisdictions. Caltrans has constructed many roundabouts in recent years, including four on State Route (SR) 89 in the Town of Truckee. Caltrans has proposed construction of another roundabout in Meyers at the US 50/SR 89 intersection, less than one mile from the US 50/Pioneer Trail intersection.

The following summaries and excerpts from *Roundabouts: An Informational Guide* (National Cooperative Highway Research Program 672, FHWA, 2010 Second Edition) highlight some of the key considerations for a roundabout at this location:

- Roundabouts have been demonstrated to be safer than other forms of at-grade intersections, in part because of reduced speeds through the intersection. Speed control is provided by geometric features, not just by traffic control devices (i.e. traffic signals and signs) or by the impedance of other traffic. Because of this, speed control can be achieved at all times of the day. Example applications include using roundabouts at the transition from a rural, high-speed environment to a low-speed urban environment.
- Roundabouts offer the opportunity to provide attractive entries or centerpieces to communities.
- While multilane roundabouts are often more difficult for all modes to navigate than single-lane roundabouts, the overall safety performance of multilane roundabouts is often better than comparable signalized intersections. Roundabouts generally have less severe collisions, (i.e. fatal and injury crashes) since broadside collisions and head-on collisions are nearly eliminated.
- Roundabouts create fewer gaps in downstream traffic, as compared to signalized intersections. Fewer gaps in traffic can affect the operating capacity of unsignalized downstream intersections and driveways.

- When operating within their capacity, roundabouts typically operate with lower vehicle delays than other intersection forms and control types.
- Roundabouts can provide environmental benefits if they reduce vehicle delay and the number and duration of stops compared with an alternative. Even when there are heavy volumes, vehicles continue to advance slowly in moving queues rather than coming to a complete stop. This may reduce noise and air quality impacts and fuel consumption significantly by reducing the number of acceleration/deceleration cycles and time spent idling.
- Snow storage should also be considered when plowing at a roundabout. Storage should not create a sight obstruction for drivers approaching or circulating the roundabout and should not affect pedestrian access through a roundabout. Knocking down the height of the snow piles or removing snow from the islands may be necessary after prolonged periods of snowfall. Median snow removal is already a common practice throughout the Tahoe Basin.
- Roundabouts often require more space in the immediate vicinity of the intersection, as compared to signalized intersections. However, roundabouts may require less space on the roadway segments between intersections, due to fewer and shorter turn lanes. This leaves more space for parking, wider sidewalks, planter strips, and/or bicycle lanes.
- Intersections with heavy left turns are especially good roundabout candidates.
- Research of roundabouts installed in the United States indicates that public attitude towards roundabouts improves significantly after construction.
- The successful operation of a roundabout depends on unimpeded flow on the circulatory roadway. Nearby bottlenecks (e.g. due to chain restrictions or avalanche controls) could routinely back up traffic into the roundabout causing gridlock.
- Roundabouts can be designed such that emergency vehicles can proceed through the intersection, even during gridlock conditions. Design elements such as a mountable central island or truck apron, mountable splitter islands, and wide shoulders will be considered at this location to accommodate emergency vehicles.

Additionally, the *Draft Meyers Area Plan* (El Dorado County, Final Draft – September 2017) contains several goals, policies, and implementation measures that support the roundabout improvement, including the following:

> Goal 2: Identify opportunities to reduce traffic speeds through Meyers without adversely affecting air quality. Consider using right-of-way improvements and traffic controls to achieve the objective.
>
> Implementation Measure 4: Intersection Improvements. Develop and implement intersection improvements such as traffic signals or roundabouts at the following intersections: US 50 and SR 89, US 50 and Pioneer Trail, construct turn lanes or similar improvements at US 50 and North Upper Truckee, and US 50 and South Upper Truckee. Intersection Improvements should maintain or improve level of service, improve traffic flow, reduce vehicle emissions associated with traffic delays, and improve pedestrian and bicycle safety.

Conclusions

The traffic operations analysis indicates that both the signalized improvement and the multi-lane roundabout would improve traffic flow through the intersection, as compared to the current condition. Both intersection types would reach LOS F for one of the four peak summer weekend hours by the Design Year 2039. However, traffic operations would degrade more rapidly with the signalized intersection, because the multi-lane roundabout would provide more capacity at this location. Additionally, the average

delay experienced by drivers with the multi-lane roundabout improvement is approximately 45 percent less than the signalized improvement for each of the peak hours during the Design Year. For both intersection types, a second northbound through lane will likely be needed to maintain LOS at this location through 2039.

Although this study analyzed the peak period during a summer weekend, there are many occasions throughout the year when traffic volumes are higher. Examples include holiday weekends, special events, and periods when Interstate 80 has lane closures. There are also occasions when the traffic congestion is worse than the peak summer weekend, typically due to weather conditions, chain restrictions, and avalanche control. The significant queuing and poor traffic operations that exist today during these rare occasions will continue and likely grow in the future. The signalized intersection would provide more storage space (i.e. turn pockets) to accommodate queued vehicles during these peak periods. However, these events are relatively rare and this benefit of the signalized intersection would only be recognized on peak days a few weeks out of the year.

One of the primary benefits of a roundabout at this location is that motorists would have to reduce their speeds while traveling through the intersection, as compared to the signalized intersection. This feature is consistent with the suggested improvements of the *Meyers Road Safety Audit* and would alert drivers to a change in surroundings upon entering or exiting Meyers. Using the geometric design of a roundabout to control speeds may also decrease the collision rates at the intersection by encouraging slower speeds at all times of the day. A roundabout would address the primary cause of collisions at this intersection. In addition, the multi-lane roundabout would reduce delays at the intersection and result in fewer air quality and noise impacts. Unlike the signalized intersection, these benefits of a roundabout can be realized year-round.

US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

Meyers Road Safety Audit

Meyers, El Dorado County, California

Road Safety Audit



Conducted February 8-9, 2016

Prepared By: FHWA Resource Center and
in Cooperation with Tahoe Regional Planning Agency

FINAL REPORT April 2016

U.S. Department of Transportation
Federal Highway Administration

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Introduction

Purpose/Background

According to the Federal Highway Administration's (FHWA) *Road Safety Audit Guidelines*, a Road Safety Audit (RSA) is a formal safety examination of a future roadway plan or project or an in-service facility and is conducted by an independent, experienced, and multidisciplinary RSA team. The primary focus of an RSA is safety while working within the context of mobility, access, surrounding land use, and/or aesthetics. RSAs enhance safety by identifying potential safety issues affecting all road users under all conditions and suggesting measures for consideration by the design team or responsible agency.

An RSA is not simply a standards check. Standards checks are part of the design process to ensure adherence to design standards and guidelines. Although the RSA team may identify safety issues by comparing items of concern to standards, the general intention of the RSA is to identify areas where applied standards may interact with road user behaviors to generate a potential safety issue.



In addition to using an RSA as a tool to assess and improve safety performance of facilities in their jurisdiction, public agencies may wish to conduct RSAs oriented to assess or address safety issues related to specific user groups, such as pedestrians and bicyclists. RSA's can be performed as both a proactive and reactive approach to assessing and improving safety on a facility.

Figure 1: RSA Team at the Intersection of US 50 & SR 89. (Photo Source: Beryl)



Figure 2: Pioneer Trail Crosswalk (Photo Source: Beryl)

An RSA was conducted along a 1.3 mile stretch of US 50 near Meyers, CA. US 50 was selected because its function is multi-faceted (state highway and "main street"), and must be flexible enough to adjust based on season (including major snow events), day of the week, and time of day. As one of only two entrances to the Region from the western part of California, Meyers experiences intense traffic peaks during holidays, and seasonal weekend tourism.

Meyers is the southern gateway to South Lake Tahoe and depending on the season, this historical roadway either functions as a high speed [1] state highway and main street or a gridlocked roadway.

Meyers, CA, shown in Figure 3[2], is an unincorporated community in El Dorado County along US 50 with roughly 8,560[3] year round residents. It is estimated that Meyers sees approximately 2 million visitors[4] drive through their community every year. Meyers offers many neighborhoods, school(s), and access to recreation, restaurants, industrial and commercial businesses and also supports a typical cyclist route for recreational bicyclists. There are three major and six minor intersections in Meyers as well as two marked cross walks. The average traffic through Meyers varies from season to season but typically is reported as between 13,100 and 17,200 vehicles per day[5]. During peak summer periods, Meyers serves an estimated 300 pedestrian and bicyclists per day[6].

Caltrans has programmed a safety improvement project at the intersection of US 50 and SR 89, as a response to high crash rates at this location. To leverage an opportunity to improve safety at more than just the US 50/SR 89 intersection, Tahoe Regional Planning Agency / Tahoe Metropolitan

[1] The term "high speed" can be defined several different ways depending on roadway context and users. For the purposes of this report high speed is defined as any speed over 35mph.
[2] Draft Active Transportation Plan, February 2016
[3] Draft Meyers Area Plan, June 2014
[4] El Dorado County, Visitors Authority
[5] Caltrans 2014 Traffic Volumes on California State Highways
[6] Summer & Fall 2015 Data Collection Report, October 2015

Planning Organization (TRPA/TMPO) awarded El Dorado County an On Our Way grant to develop a complimentary complete street design titled the Meyers Corridor Project, which will conclude in a 2016 California Active Transportation program grant application.

The RSA evaluated the US 50 corridor between the intersection of North Upper Truckee and the intersection of Pioneer Trail. The RSA was to assess:

- Existing conditions along the US 50 for all roadway users, including pedestrians, bicyclists, and other vehicles.
- Pedestrian crossings of US 50
- Balance of roadway for all users
- Safety and mobility during chain installation and removal
- Local access during peak traffic periods
- Opportunities for the use of excess right of way
- The impact of California Department of Food and Agriculture Plant Health and Pest Prevention Services Pest Exclusion - Agricultural Inspection Station (Hereinafter referred to as the CA Ag Inspection Station) on safety and operations
- Caltrans intersection safety improvements at SR 89/US 50 and its impact on the corridor
- Identify potential improvements that can enhance safety of all users, accommodate transit, and enhance pedestrian and bicycle connectivity across and along US 50.

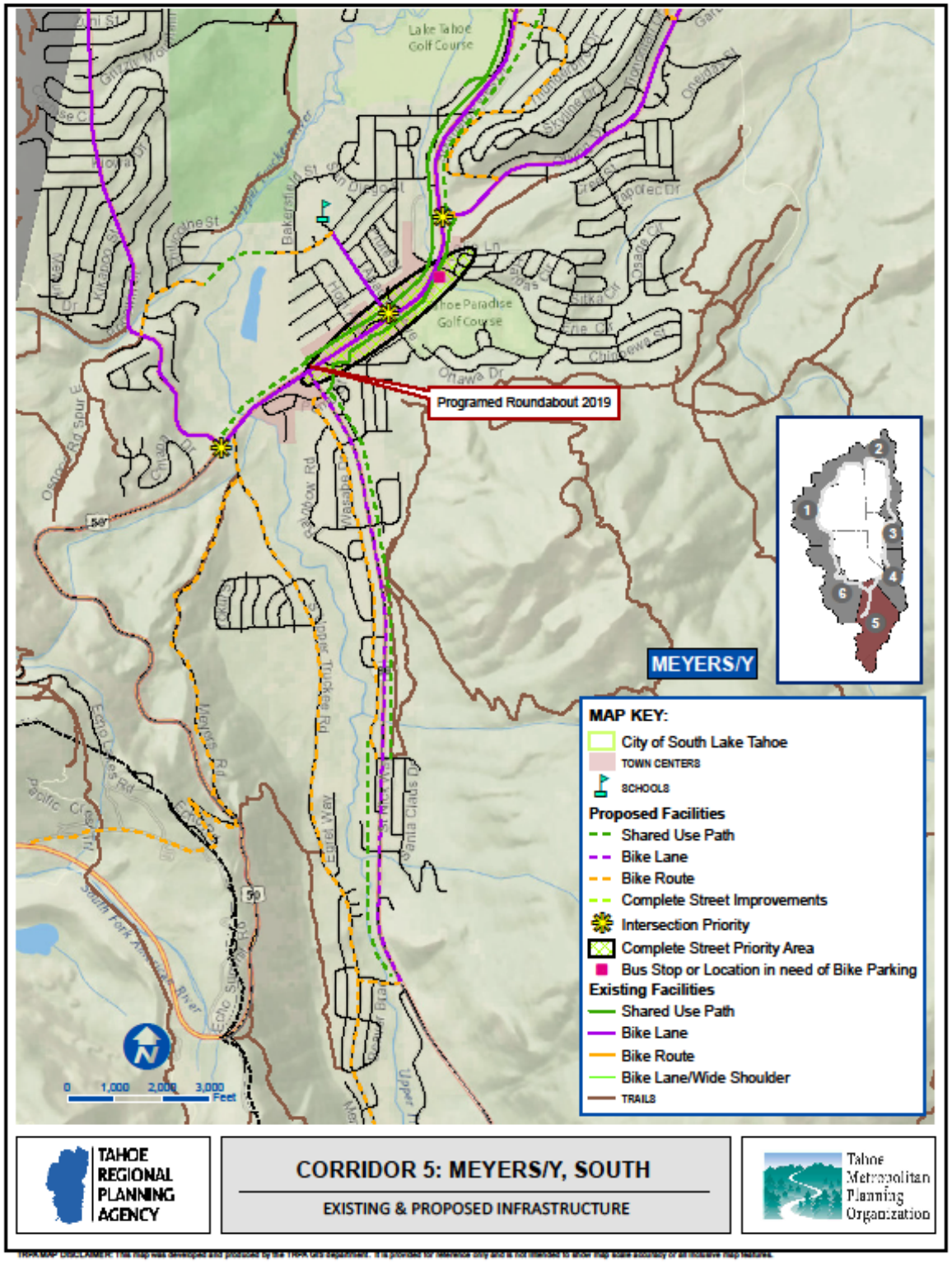


Figure 3: Map of Meyers. Source: Linking Tahoe: Active Transportation Plan, TRPA/TMPO

Study Area

The location for this RSA was originally scoped to extend roughly one mile along US 50 from the intersection of State Route 89 (South) to the intersection of Pioneer Trail. However, while meeting with California Highway Patrol (CHP) in preparation for the RSA, it became evident the study area would need to extend to North Upper Truckee, which is used by a large portion of the year round residents and is being used as a bypass for tourists in an attempt to avoid peak congestion on US 50, and chain control regulations located at the bottom of the grade near Pomo Street. Thus, the area assessed starts at the intersection of North Upper Truckee Rd. and extends 1.3 miles through Meyers to Pioneer Trail.



Figure 4: N & S Upper Truckee Rd Intersections (Source: Google Earth)

The RSA team was comprised of individuals with a variety of backgrounds including: law enforcement, engineering, planning, and local government and community representatives. Representatives include from El Dorado County, California Department of Transportation (Caltrans), TRPA/TMPO, California Highway Patrol (CHP), Meyers Community Foundation, and the Federal Highway Administration (FHWA). The RSA team reviewed and took into account all previous public visioning processes conducted as part of the 2016 Linking Tahoe: Active Transportation Plan and the 2013 draft Meyers Area Plan.

Existing Conditions

Site Characteristics

The study area along US 50 is predominantly a three lane roadway that includes a two way left turn lane (TWLTL). The paved roadway width varies between 45ft and 60ft with the exception near the CA Ag Inspection Station where the pavement width is 150ft. The Caltrans right of way is consistently between 200ft and 280ft, except for a 780ft stretch where the right of way is 100ft. The minor local street intersections include, North Upper Truckee Rd., Cirugu/Pomo St, Navahoe Dr., Apache Ave, and Santa Fe Rd/Apache Ave. The two major intersections are a stop controlled T intersection at SR 89 and a signalized T intersection at Pioneer Trail. Photos and a map of the corridor are shown in Figures 5, and 6.

Bicycle facilities include the shoulder for 0.2 miles between N. Upper Truckee and Pomo/ Ciguru St., a marked bike lane through a portion of the study area with some inconsistencies through the intersections, and a Class I shared-use path (Meyers Bikeway) adjacent to and on both sides of US 50 from the SR 89/US 50 intersection to the Pioneer Trail intersection that extends roughly 0.8 miles.

Two marked crosswalks and a third signed crosswalk are in the study limits. A marked mid-block crosswalk, signed as a school crossing, is located within the CA Ag Inspection Station area, approximately 150ft west of the Apache Ave intersection. A signalized pedestrian crossing is located at the Pioneer Trail intersection for east-west pedestrian movements on the north side of the intersection only. It does not provide connectivity to the Class I shared-use paths on the east side US 50. Additionally, there is a signed crossing with two pedestrian crossing signs on either side of the Santa Fe Rd/Apache Ave intersection.

Meyers feels like a bedroom community along a state highway where the posted speeds are 40mph through the community. Driving eastbound (EB) towards Meyers near North Upper Truckee Rd the posted speed limit is 55mph to Cirugu/Pomo St where it drops to 45mph and it drops again to 40 mph after SR 89/US 50 at the CA Ag Inspection Station through the rest of Meyers and just past Pioneer Trail. Similarly, driving westbound (WB) into Meyers the posted speed drops from 55mph to 40mph just before Pioneer Trail. After Apache Ave and before CA Ag Inspection Station a 25mph advisory speed sign supplements the Reverse Turn sign and after CA Ag Inspection Station the posted speed increases to 45 mph and again increases to 55mph near Cirugu/Pomo St. A high speed corridor is typically defined by a roadway that is posted at 40mph to 45 mph and higher for

design purposes; however, for the comfort and safety of all users, speeds greater than 20-30mph have significantly more risk for pedestrians and bicyclists.

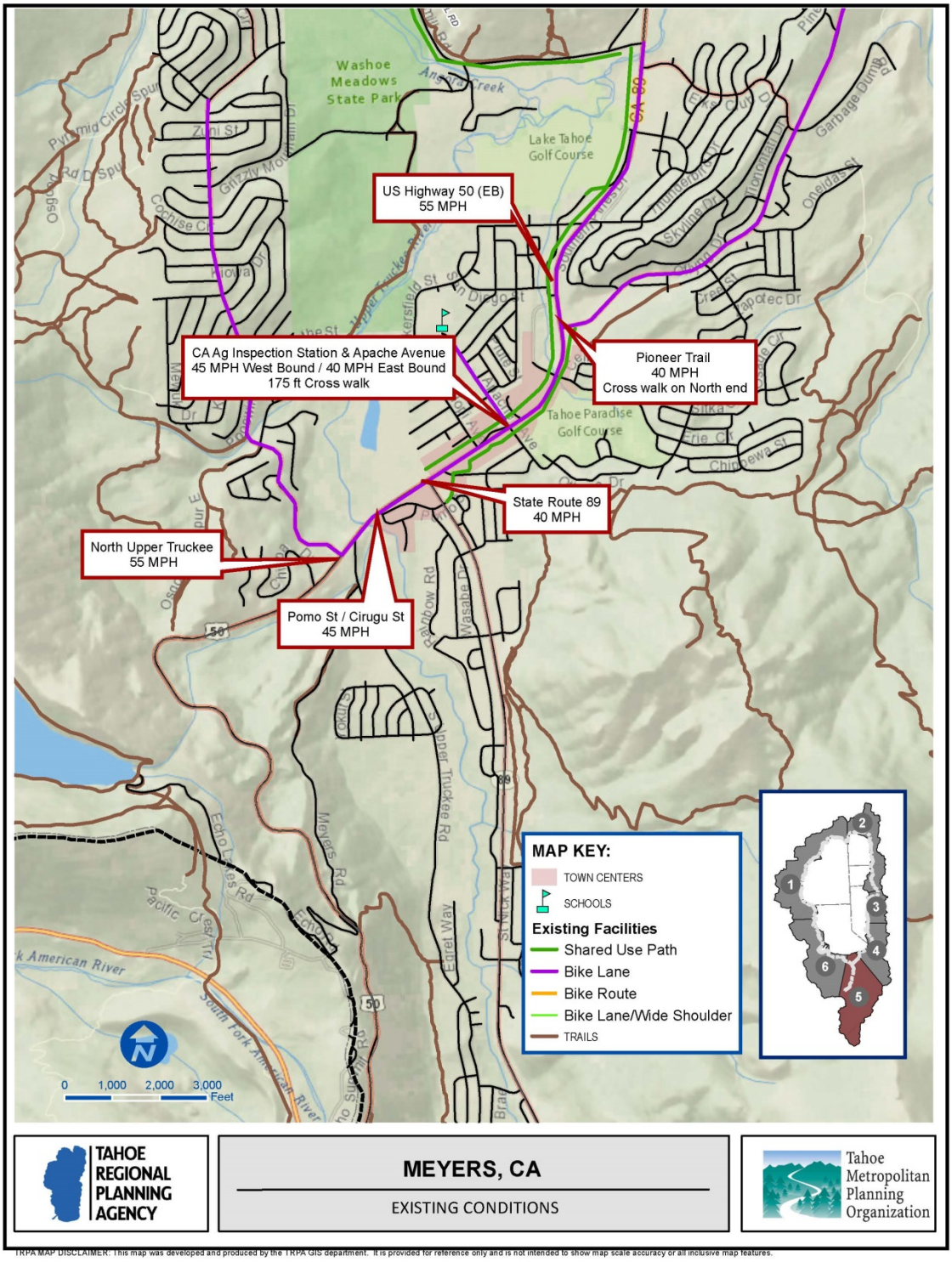


Figure 5: Overview of RSA Study Area. Source: TRPA/TMPO



SR 89 & US 50 (Aerial Image Source: Google Earth)



SR 89 & US 50 Intersection. (Photo Source: Beryl)



Apache Ave (Aerial Image Source: Google Earth)



Residents crossing Apache Ave (Photo Source: Vollmer)



Santa Fe Rd/Apache Ave & US 50 (Aerial Image Source: Google Earth)



Large Right of Way leading to Santa Fe Rd Intersection. (Photo Source: Beryl)



Pioneer Tr. & US 50 (Aerial Image Source: GoogleEarth)



Bicyclists illegal crossing (Photo Source: Vollmer)

Figure 6: Images of the Corridor

The land use along the corridor is mixed. Uses include commercial, recreational, and open space. Amenities consist of trail heads, restaurants, a grocery store, local small businesses, and various agency offices that include living accommodations. Moving west to east, from North Upper Truckee Rd. to the SR 89/US 50 intersection, the adjacent land is forested; however, it includes 1,000ft of chain up area next to the shoulder of the WB lane. The next 4,000ft (to the east) includes 23 accesses (driveways) to businesses and commercial areas. The wide shoulders are used for snow storage and snow removal operations. The Meyers Bikeway provides a full connection that extends from the intersection of SR 89/US 50 to the City of South Lake Tahoe.

Two very unique aspects of this corridor are the CA Ag Inspection Station and the chain on/chain off designated areas. The CA Ag Inspection Station diverges *all* WB traffic around the inspection building for ~750ft within the Caltrans right of way and when in operation can stop *all* WB traffic before leaving Meyers on US 50. During large snow events, the chain on/chain off area between the SR 89 intersection and Cirugu/Pomo St becomes a critical area for drivers to get properly equipped to navigate Echo Summit; however, during a major snow event there is not sufficient chain on/chain off areas to accommodate all vehicles.

Vehicle Crash Data

Crash data from 2007 to 2015 was provided by CHP from N Upper Truckee Rd to Pioneer Trail as shown in Figures 7 and 8. There were 111 crashes reported in this 1.3 mile stretch through Meyers with concentrations near SR 89, the CA Ag Inspection Station and Pioneer Trail. That averages over 12 reported crashes per year in Meyers. The data shows consistent crash trends in terms of total and injury crashes from 2007 to 2012 and then a decrease in total crashes from 2013 to 2015. The injury crashes remained average from 2013 to 2015. The ratio of injury crashes to total crashes is consistent at 25% based on a rolling five years average over the nine years. Twenty-eight percent of the total crashes in the study area occurred at intersection while forty-four percent of the injury crashes occurred at the intersections. Figure 9 shows the number of total crashes per intersection.

Nearly sixty-one percent of the total crashes and nearly all of the injury crashes occurred during dry conditions. Ninety percent of the total crashes were multi-vehicle crashes. Overall, a majority of the crashes occurred in the chain up/off segment of US 50, intersection of SR89, CA Ag Inspection Station or at Pioneer Trail as shown on Figure 9. According to CHP, not all property damage only (PDO) crashes are reported, due to high volume of crashes and other safety related issues such as complications with the chain up area, and drivers and passengers leaving their vehicles during long delays. This is common practice nationally.

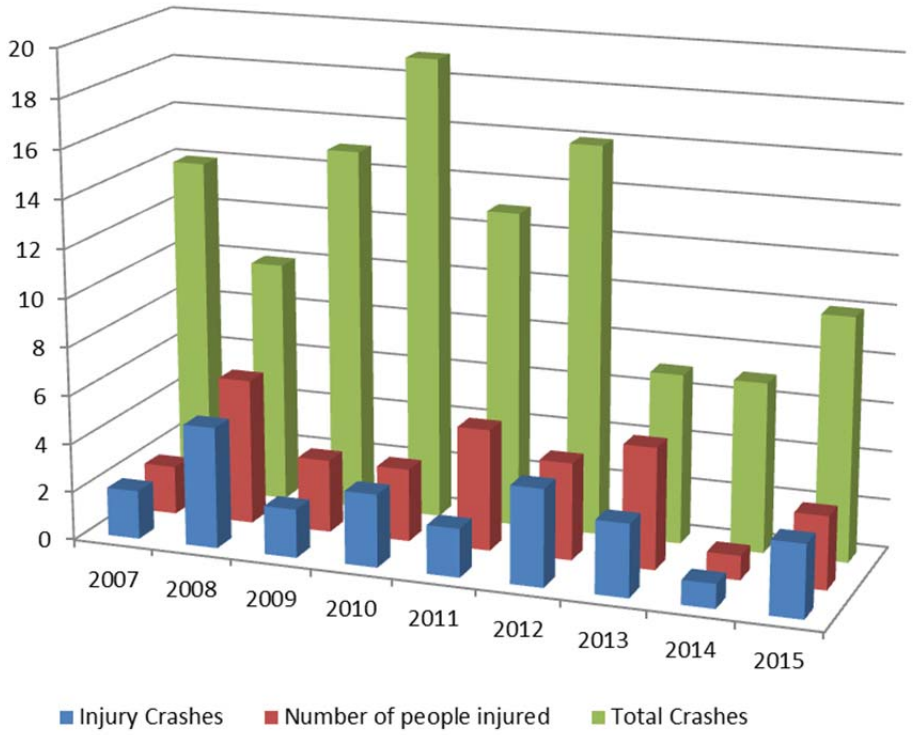


Figure 7: Crash Data from 2007 to 2015 (Data Source: CHP)

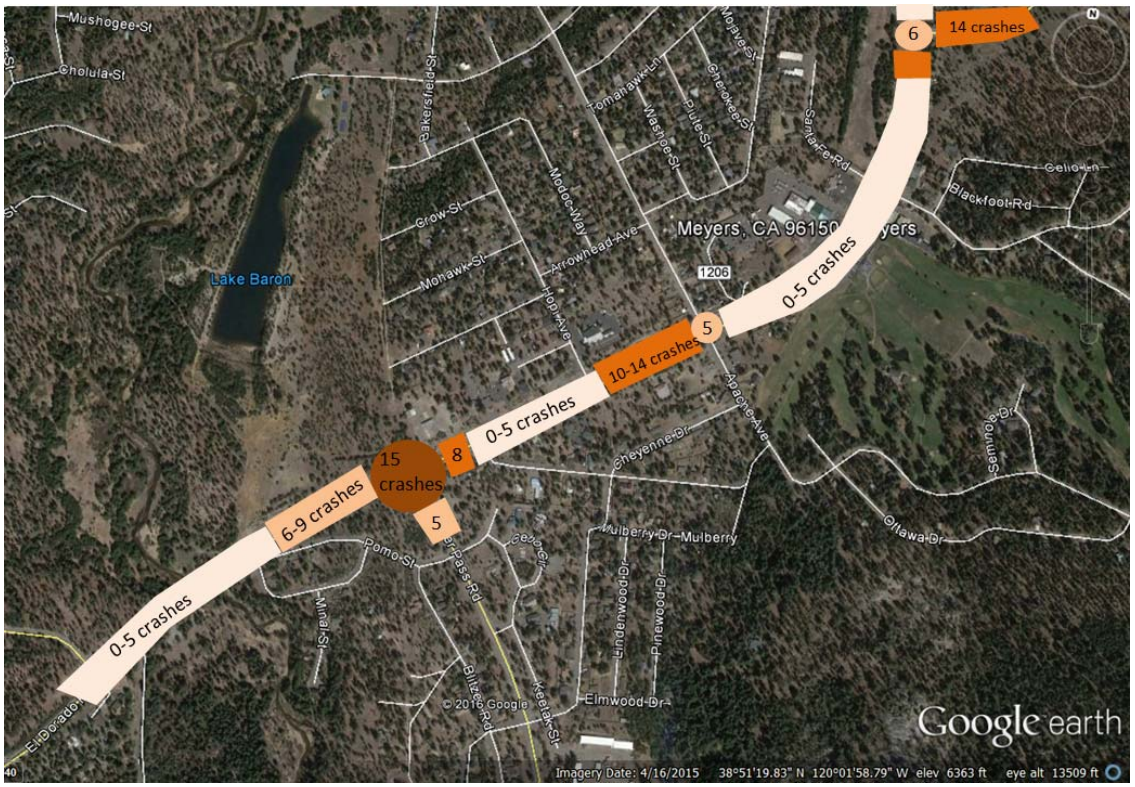


Figure 8: Total crashes from 2007-2015 by Segment and Intersection (Data Source: CHP)

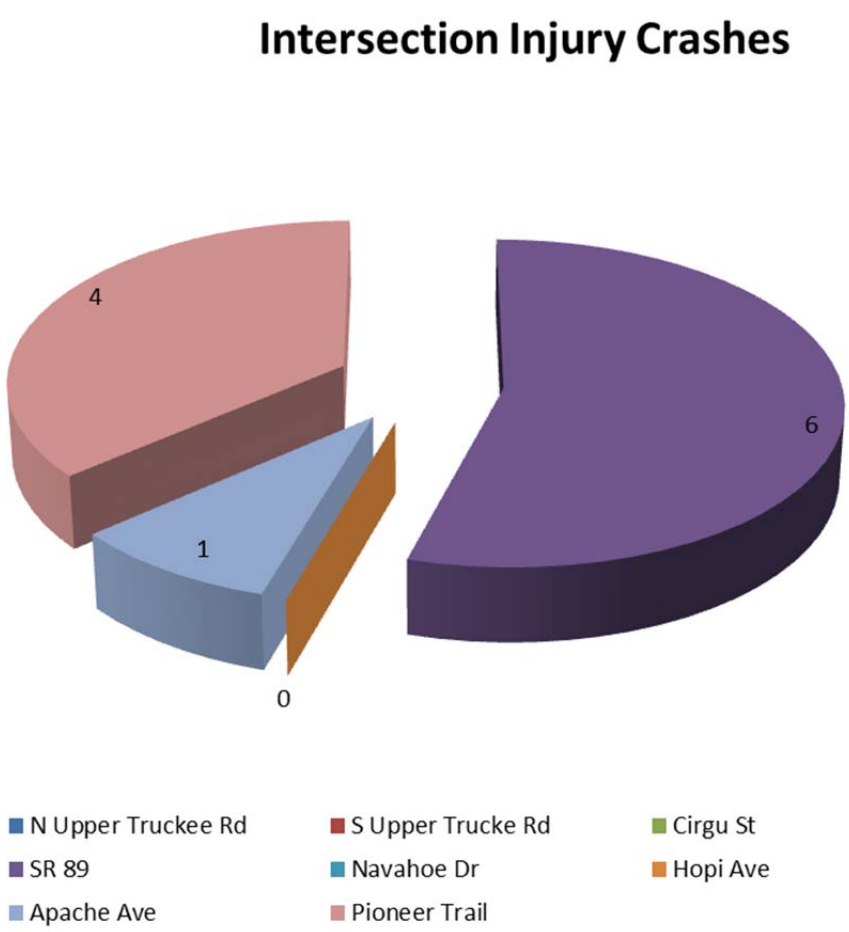


Figure 9: Intersection Injury Crash data from 2007-2015 (Data Source: CHP)

The 2015 US 50/ SR 89 Caltrans Project Study Report, states this intersection experienced total crashes above statewide average for similar facilities in a 3-year period from April 1, 2010 to March 31, 2013, as shown in Figure 10. There were nine total crashes including five crashes that resulted in injuries. Of the nine crashes, five were rear end crashes and the other four were broad side crashes. Four of the five rear end collisions occurred on SR 89 which is stop controlled approach. All four broad side crashes occurred on US 50 which has uncontrolled approaches. The crash data was obtained from the TASAS.

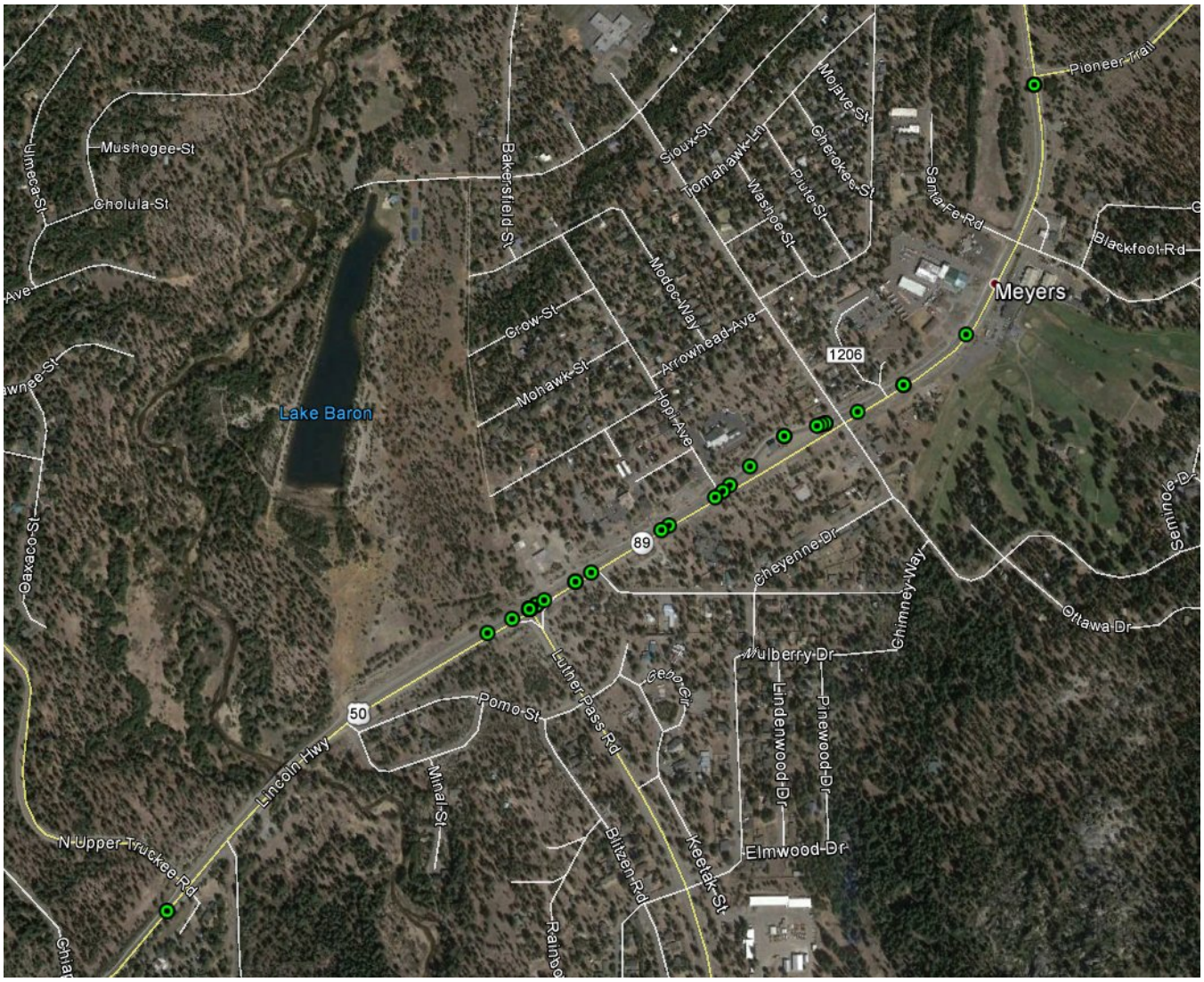


Figure 10: Location of Crashes, April 2010 -March 2013. (Source: Caltrans, TASAS)

Pedestrian & Bicycle Crash Data

No reported fatalities have occurred in the recent past in the study area[7]. However, this corridor lacks complete pedestrian infrastructure along this high speed corridor and does not align with the goals and policies of the TRPA's *2012 Regional Plan, TMPO's Regional Transportation Plan and Active Transportation Plan* which seeks to create bikable, walkable town centers. The area also does not align with California's desire to reduce vehicle miles traveled by offering multi-modal accessibility and *Caltrans' Complete Streets Deputy Directive 64-R1*.[8]

[7] On March 27, 2016 a hit and run pedestrian injury crash occurred in Meyers, CA.
[8] http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets_files/dd_64_r1_signed.pdf

During 2014 and 2015, TRPA/TMPO, the Community Mobility Workgroup, and the Lake Tahoe Bicycle Coalition worked with agencies to collect data and discuss where and how reporting can be more robust. Crashes may not always be accurately reported due to technical difficulties with recording systems, staff availability, injury severity, and non-reporting by victims[9].

In the 2015-2019 *California Strategic Highway Safety Plan (CA SHSP)*[10], pedestrian fatalities and severe injuries represented 17.32 percent of the total number of traffic fatalities and severe injuries in California in 2012. Fatal and injury bicyclist crashes are on the rise in California. In 2012, 978 bicyclist were injured in crashes and 147 bicyclist fatalities were reported, both of which are the second highest numbers in the nation over the period from 2003-2012. Additionally, the Intersection Challenge Area reported, in 2012, nearly half (45.7 percent) of all fatalities and severe injuries were related to crossing and left turn movements at intersections and the merging, weaving and lane changing movements generated by freeway, expressway and carpool lane entrances and exits.

While the RSA is pedestrian and bicycle-focused, to gain a more complete understanding of how the corridor functions, it is important to look at crashes involving both motorized and non-motorized vehicles. It is a known fact that pedestrians and bicyclists are vulnerable road users if they are involved in a crash. Figure 11 is from the Seattle DOT Pedestrian Safety Action Plan illustrating the exponential risk associated with vehicular speeds.

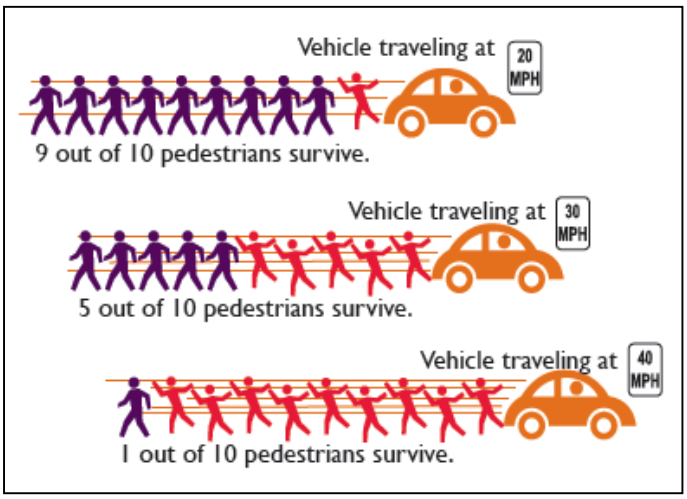


Figure 11 Survivability of Pedestrians (Source: Seattle DOT)

If a vehicle is traveling at 20mph, a pedestrian has a 90% chance of surviving; at 30 mph a 50% chance of surviving; and at ***40mph a 10% chance of surviving.*** For comparison, the entire US 50 corridor through Meyers is posted 40 mph or higher.

[9] For more information, see Chapter 2 of *Linking Tahoe: Active Transportation Plan.*
http://www.dot.ca.gov/hq/traffops/shsp/docs/SHSP15_Update.pdf

Public Input from Meyers Area Plan & Active Transportation Plan

The Meyers Area Plan planning process began in the spring of 2012 and the draft Plan was developed through an open, community-led process that involved extensive community outreach and participation including 14 separate public hearings or community workshops. In addition to the series of public workshops and hearings, the County has accepted community input on the draft Plan throughout the planning process. A dedicated comment form and email has been available on the County Website since September 2013, and comments have been accepted in any form since the initiation of the process. There is general consensus on many issues in Meyers. These primarily revolve around: enhancing public safety (including lighting, crossings, etc.), improving mobility and access, ensuring Meyers has a functioning 'main street', helping to build a more robust economy in Meyers and working toward creating a healthier community in Meyers.

The *2016 Linking Tahoe: Active Transportation Plan* also collected and analyzed extensive public feedback during a robust six-month outreach process. Over 600 surveys, two community gatherings, and multiple association and public event meetings took place. TRPA/TMPO staff analyzed this information in its *2015 Community Outreach Report*.[11] Further, Chapter Four[12] of the *Active Transportation Plan* houses network recommendations for the entire region, including Meyers as part of Corridor 5. Recommendations include consistency with the Meyers Area Plan, as well as updated improvements based on community input provided during the TRPA/TMPO outreach process.

Summary of Completed Area Traffic Studies

In 2010, the El Dorado County Department of Transportation funded signal warrant studies[13] for a total of six intersections along US 50 in the unincorporated community of Meyers, California.

Conclusions from this report include the following:

- "The Caltrans signal warrant analysis procedures do not specifically address the issue of how the warrant process should be applied in resort areas with wide variations in traffic volumes." The traffic signal warrant analysis concludes that at least one signal warrant has been satisfied during at least one analysis period at the following intersections: US 50/Pioneer Trail, US 50/Apache Avenue/Santa Fe Road, US 50/Apache Avenue (south), US 50/Luther Pass Road (SR 89), and US 50/North Upper Truckee Road.

[11] http://tahoempo.org/documents/ATP/2015CommunityOutreachReport_Comb.pdf
[12] http://tahoempo.org/ActiveTransportationPlan/docs/4_ATP_Ch4_NetworkRecommendations.pdf
[13] Meyers Operational Study Phase II, November 2010,

- "The intersection of US 50/North Upper Truckee Road is shown to operate at poor LOS during summer weekend AM and PM peak hours. Satisfactory LOS C is achieved during summer weekdays and during fall. A traffic signal is warranted at this intersection. An additional engineering study including LOS, traffic safety, and design constraints would be necessary to determine if a traffic signal or roundabout would be appropriate at this intersection."
- "The intersection of US 50/South Upper Truckee Road is shown to operate with satisfactory LOS C or better for all analysis periods. A traffic signal is not warranted at this intersection.
- "The intersection of US 50/Luther Pass Road (SR 89) does not meet LOS standards during summer weekend AM and PM peak hours and during the summer weekday PM peak hour. A traffic signal warrant is satisfied at this intersection during summer weekend conditions only. A modern roundabout could improve intersection LOS with potentially less delays to through traffic on US 50. Overall, if the delays for movements turning onto US 50 from SR 89 are considered to be sufficient to warrant intersection improvements, additional detailed engineering studies would be necessary."
- "The US 50/Apache Avenue/Santa Fe Road intersection experiences LOS F conditions during six of the eight analysis periods. The peak hour traffic signal warrant is satisfied at this intersection on summer weekend. No other traffic signal warrants are met. A traffic signal is not adequately warranted at this location."
- "The intersection of US 50/Pioneer Trail does not warrant any intersection improvements" based on traffic operations.

A 2010 Speed Study[14] reported 85th percentile speeds west of the SR 89/US 50 intersection to be 53 mph and 51 mph, for westbound and eastbound respectively. Near the Apache Ave intersection recorded speeds were 39mph and 44mph, for westbound and eastbound respectively. South of the Pioneer Trail intersection the recorded 85th percentile speeds for westbound and eastbound were 43mph and 40mph, respectively.

A June 2015, Caltrans Project Study Report[15] for the intersection of US 50 and SR 89 South followed the Caltrans Intersection Control Evaluation (ICE) directive screening process of three intersection control alternatives: all-way stop, traffic signals, and a roundabout. The roundabout evaluation provided for a potential increase in safety and traffic flow and was determined to be the most viable alternative of the three evaluated and is now under design.

[14] Cite reference and sponsor
[15] District 03- ED - 50 – PM 70.621, Expenditure Authorization (EA) 03-4F840K – Project Number 0314000305

Assessment of Findings

Safety Benefits of Existing Roadway

While conducting the RSA, the Team noted positive roadway features along US 50, including the following, also shown in Figure 12.

- Available Right of Way: There is nearly 200ft 280ft of Caltrans right-of-way along the entire study area[16], with the exception within the curve north of the Chevron station, where the right-of-way is approximately 100ft wide.
- Active Transportation Facilities: The corridor includes active transportation facilities, including the Class I Meyers's Bikeway and Class II bike lanes.
- Intersection Lighting: Intersection lighting is located at all of the intersections which is a known safety feature.
- Turn Lanes: The intersection turn lanes and TWLTL provide space for turning vehicles to move out of the travel lane, where the posted speed limit is greater than 40mph, to identify safe gaps before turning across traffic.
- Snow Storage Areas: Snow storage areas are essential to maintain safe roadway conditions.



Meyers Bikeway, Photo Source: Vollmer



US 50 Vehicle Lanes, Photo Source: Beryl

Figure 12: Photos of Existing Features on US 50 through Meyers

[16] NAME SOURCE

Identified Study Area Issues and Suggested Improvements

The discussion of the corridor is separated by segments and intersections. Numerous strategies were identified as possible improvements along the corridor to increase safety and efficiency for all users for the following categories:

- Intersections, residential and business access
- Pedestrian and bicycle crossings
- Chain up area
- Class I and Class II bicycle facilities
- Posted speed reduction for a portion of the study area
- Effective use of available right of way

North Upper Truckee Rd Intersection

N. Upper Truckee Rd is a local neighborhood road that connects to Lake Tahoe Blvd and is a parallel route to US 50 into South Lake Tahoe, as shown in Figure 13. There are approximately 2,000 residential properties along N. Upper Truckee Rd which generates a high volume of local traffic daily. The 2014 AADT for N. Upper Truckee Rd was approximately 5,750 vehicles per day[17]. During peak periods this route has become a "bypass" for long traffic delays on US 50 through Meyers to leave Tahoe. Anecdotally, it is also thought to be used as a bypass of chain control during inclement weather events. It is also speculated that smart map technologies are showing this as an optional route, which results in higher than normal traffic volumes for this facility. During peak periods the traffic on this roadway likely exceeds its capacity as noted anecdotally by CHP, and local residents.



Figure 13: N. Upper Truckee Rd (Aerial Image Source: Google Earth)

[17] El Dorado County, 2016

N. Upper Truckee Rd also accommodates a Class II bike lane. In both the 2010 El Dorado County traffic study and the 2016 TRPA/TMPO *Active Transportation Plan* the intersection with US 50 is designated as a top priority intersection for improvements. This intersection intersects US 50 on approximately a 6% grade, with a wide cross section. Drivers on US 50 tend to have high speeds (>40mph) on the downgrade and the N. Upper Truckee intersection may have limited sight distance during some seasons (i.e. trees, snow banks). No turn lanes are provided on N Upper Truckee Rd.

Suggested Improvements:

- Consider installation of **speed feedback signs** and lighting on the downgrade of EB US 50 and an **intersection ahead warning sign** possibly with the supplemental street name sign. See Figure 14 for examples.
- Consider **intersection design improvements** for safety and operations (i.e. turn lanes, checking sight distance/triangles seasonally)
- Consider static **signage** to discourage bypassing chain control or designation as a local road, "no through traffic/local traffic only"
- **Enhancements to rural/ local road ITS** using both permanent and temporary Changeable Message Signs (CMS) to disperse travel demand. Messaging can include time to reach SR 89/US 50 intersection, or promote changing travel plans due to current delays.



Figure 14: Example of Speed Feedback Sign on I-70 in CO (Aerial Image Source: Google Earth) and Intersection Warning Sign with cross street name (Source: FHWA)

- Extension of the shared-use path known as the **Meyers Bikeway** should be constructed to reach North Upper Truckee along US 50 with consideration for separated or buffered bike lane along N. Upper Truckee. Please TRPA/TMPO's *Complete Street Resource Guide*[18] for design recommendations.

[18] http://tahoempo.org/ActiveTransportationPlan/docs/appendices/Appendix%20A_Complete%20Street%20Resource%20Guide.pdf

South Upper Truckee Rd Intersection



S. Upper Truckee Rd is a popular cyclist route and provides access to recreational day hikes as well as provides access to Christmas Valley residents. The intersection with US 50 has some challenges with grade and possible sight distance/triangle issues (i.e. trees and snow) as shown in Figure 15. Similar to the N. Upper Truckee Rd intersection with US 50, steep downgrades along US 50 contribute to high speeds in this area.

Figure 15: Grade of S. Upper Truckee Rd and US 50 Intersection (Image Source: Google Maps)

Suggested Improvements:

- Consider intersection design improvements for safety and operations (i.e. turn lanes, checking sight distance/triangles seasonally) .
- Consider installation of an intersection ahead warning sign possibly with the supplemental street name sign on US 50.
- Extension of the shared-use path known as the Meyers Bikeway should be constructed to South Upper Truckee along US 50. Please TRPA/TMPO's *Complete Street Resource Guide*[19] for design recommendations.

Due to the proximity of this intersection to the N. Upper Truckee Rd intersection, improvements for these intersections should be coordinated.

[19] http://tahoempo.org/ActiveTransportationPlan/docs/appendices/Appendix%20A_Complete%20Street%20Resource%20Guide.pdf

Tire Chain up Area (Pomo St/Cirugu St to SR 89)

During the winter months, and in particular during snow events, the chain up area can cause significant disruption to the safety and operations of US 50 as well as to the local roads. CHP reports that during these events drivers on both sides of the highway, in all types of vehicles, leave their cars to do other tasks (walking around, walking dogs, playing in the snow) when there are long delays. Recently, during significant snow events Caltrans and CHP provided additional staff at N Upper Truckee Rd for six hours to help mitigate potential issues.



Figure 16: WB US 50 Entering the Chain up Area (Photo Source: Loehr)

The Cirugu St/Pomo St intersection provides an opportunity for un-authorized/restricted vehicles (i.e. large trucks) to make a U-turn when those vehicles are prohibited. The chain up area for WB US 50 traffic extends from Cirugu St/Pomo St to SR 89 and can be seen in Figure 16. A chain off area for EB US 50 traffic is not currently signed/posted. The Caltrans right of way is typically 240ft in this area.

Suggested Improvements:

- Designate chain on and off area limits and sign chain on and off areas clearly for both directions of traffic. Both static and dynamic CMS should be considered.
- Consider expansion and re-design of the chain up area on US 50 by moving or adding an area away from through traffic to provide separation (10ft to 20ft) of chain on operations and through traffic. The separation could also serve as pedestrian refuge, snow storage area, and



stormwater run-off retention/filtration area. See Figures 17 and 19. Consideration could be made during summer months; chain up area could be used as an active transportation only facility.

- Evaluate **painted buffers** for Class II bike lanes to best practices (i.e. MUTCD, NACTO, AASHTO, FHWA).
- Consider **enhancements** to rural/ local road **ITS** adding both permanent (see Figure 18) and temporary CMS as well as **real time communication (alert feature) with public** via texting, email (e.g. public could sign up for communications[20] See examples of real time emails from Colorado in Appendix A.



Figure 17: Separated Chain Up Example from I-70 in Idaho Springs, CO[21] (Aerial Image Source: Google Earth)

- Investigate potential to acquire **abandoned property** for corridor improvements, such as intercept parking or transit center.
- Consider **innovative collaboration and education** to encourage drivers to **adjust their travel times** and behaviors. See *Colorado DOT "Change Your Peak Time[22]"* efforts in working with ski resorts and mountain communities.
- Consider a **Peer Exchange with State DOT's regarding challenges in mountain corridors[23]** and strategies for high tourism traffic. This could result in a synthesis or best practice for mountain corridor communications and educational campaigns with resorts, transportation shuttles, etc.
- Study the possibility of combining the CA Ag Inspection Station with the chain up area in the future.
- Consider monitoring the performance (i.e. operations, safety, etc.) of the recent addition of staff during snow events to assess the effectiveness.

[20] Colorado DOT travel alert sign up information https://service.govdelivery.com/accounts/CODOT/subscriber/new
[21] https://www.google.com/maps/@39.7440324,-105.4825525,242m/data=!3m1!1e3
[22] https://www.facebook.com/ChangeYourPeakTime/info/?tab=page_info
[23] Consider seeking assistance from the National Center for Rural Road Safety - http://www.ruralsafetycenter.org/





Figure 18: Permanent ITS Signs used in advance of Snow Storm on I-70 mountain corridor (Aerial Image Source: Google Earth)



Figure 19: Separate Chain Up Example from I-70 in Idaho Springs, CO[24] and Georgetown, CO[25] (Aerial Image Source: Google Earth)

[24] https://www.google.com/maps/place/Idaho+Springs,+CO/@39.7437684,-105.4839077,325m/data=!3m1!1e3!4m2!3m1!1s0x876ba525c91b6e55:0xfb9e9ae2915f3f68

US 50 & SR 89 Intersection

A Caltrans intersection safety improvement project is moving forward at US 50/SR 89 where a modern roundabout is being designed by Caltrans. Two concept drawings for the roundabout design are shown in Figure 20. The intersection is within the chain up (and chain off) area along US 50. There is a wide amount of right of way in the intersection functional area. This intersection includes access to two active transportation facilities; the Class I path parallel to US 50 to the north, and the Class II bike lanes on US 50. The bike lane markings are inconsistent thought this intersection area. The proposed intersection improvements will provide access and hopefully improve designs to three existing facilities; the Class I parallel to SR 89 on the east, Class I parallel to US 50 to the north, and the Class II bike lanes on US 50.
A large Jeffry pine tree is located on top of a prominent hill on the NE quadrant of the intersection.

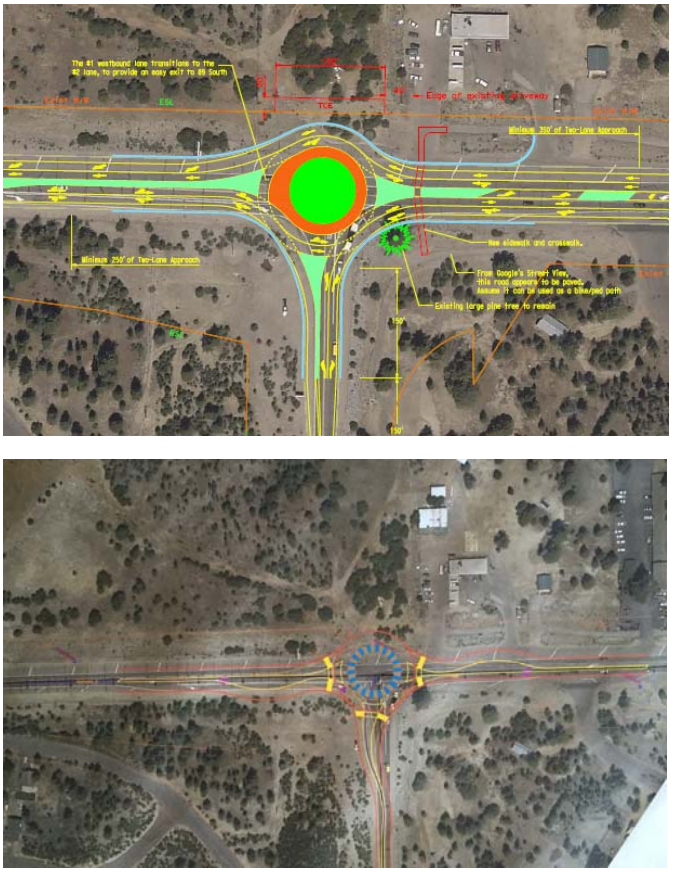


Figure 20: Concept drawing of roundabout (Source:Caltrans PSR, 2015)

Both Caltrans and CHP noted that this intersection is the site of a number of vehicle crashes. Of particular note are rear-end crashes between vehicles that are turning from NB SR 89 to EB US 50. After stopping at the STOP sign on SR 89, vehicles enter the acceleration lane on US 50. However, the traffic volumes on US 50 often prevents the vehicle from SR 89 from merging onto US 50, which forces the merging vehicle to slow or stop in the acceleration lane. Drivers in the following vehicle may not see the vehicle in front is stopped, and the crash occurs. The CHP also noted a number of vehicles either run the STOP sign on SR 89 and proceed across US 50, or slide through the STOP sign and across US 50. A 1.2% grade leads SR 89 into the US 50 intersection.

[25] https://www.google.com/maps/place/Georgetown,+CO/@39.7250804,-105.6963947,414m/data=!3m1!1e3!4m2!3m1!1s0x876a5316be154fc7:0x4bbd507c543c22ec

Suggested Improvements:

- Consider maintenance project to restripe this area to eliminate the acceleration lane from SR 89 to US 50 and restripe the bike lane markings on US 50 to be consistent and use of state of the practice for bike lane markings though and approaching intersections.
- Agency collaboration on rightsizing roundabout improvement consistent with Caltrans Intersection Control Evaluation (ICE) directive and state of the practice roundabout design guidance and operational tools.
- Consider reconstruction of US 50/SR 89 to include gateway features and create a transition/traffic calming presence i.e. lower posted speed[26] through the remainder of Meyers (increase posted speed, as appropriate, after Pioneer Trail intersection).
- Consider possible new configurations for chain up area as a part of roundabout design so project does not preclude future changes to the chain up area (i.e. separation between travel lanes and chain up area, additional chain up area).
- Consider providing connectivity between the Class I pathway facility parallel and to the east SR 89 and the Class I facility parallel and to the north of US 50. Connectivity should also be provided to North Upper Truckee and Christmas Valley.

CA Ag Inspection Station

The CA Ag Inspection Station is a unique feature along this corridor as shown in Figure 21. In advance of the Ag Station, the WB US 50 lane is diverted along an approximate 800ft reverse curve around the inspection building and the transitions start and end with the Hopi Ave and Apache Ave intersections. Although the posted speed limit in the area is 40mph, an advisory speed warning sign of 25mph is posted on a reverse turn warning sign. Currently a midblock school pedestrian crossing is also within this area. According to California Highway Patrol, this is the second highest crash location within the study area and the approach to the Ag Station includes numerous traffic control devices intended to warn and channelize drivers as well as mitigate the damage from a potential crash. The wide (280ft+) Caltrans right of way continues through this area. The current operations and functions of the CA Ag Inspection Station were unknown by the members of RSA Team.

[26] See uSLIMITS Tool for additional information. http://safety.fhwa.dot.gov/uslimits/



EB US 50 with midblock school crossing sign and crosswalk in 40 mph posted speed zone.



WB US 50 – School crossing sign blocks reverse turn sign.

Figure 21: CA Ag Inspection Station (Source: Isebrands and Google Earth)

Suggested Improvements:

- Verify the Reverse Turn warning sign is not correct for current geometry and as appropriate replace with a Reverse Curve warning sign (MUTCD W1-3) and confirm that the 25mph advisory speed plate is the appropriate sign for this geometry and speed reduction as well as the appropriate location for the signs. The existing signs are well within the reverse curve and directly behind the warning sign for the school pedestrian crossing sign. After verification of sign, consider separating signs so drivers have ample time to detect and react to the change in the roadway.
- Improve striping approaching and departing CA Ag Inspection Station to enhance and proper use of chain on area and future roundabout project.
- Coordination with roadway agency partners - Caltrans, El Dorado County, TRPA, and CA Dept. of Agriculture to determine the current and future operations of the CA Ag Inspection Station. Consider discussing the following:
    - Original operations under the permit/easement and its relevance to current and foreseeable future operations.
    - Options for routing WB US 50 traffic to its expected location (adjacent to EB US 50) and using a taper "exit" only for vehicles which will be inspected. This would be done in combination with CMS and dynamic signing.
    - Options for moving the operations and co-locating with a re-designed chain up area
- See discussion below on the midblock school crossing.

Midblock School Crossing and Apache Ave Intersection

In 2014, a high visibility marked crosswalk was constructed approximately 150ft SW of the Apache Ave intersection creating a midblock pedestrian crossing that is marked as a school crossing. High visibility thermoplastic markings are recessed into the pavement and school crossing warning signs are posted. The midblock school crossing is 130ft in length and has a 25ft flush refuge area between the travel lanes, as shown in Figure 22.

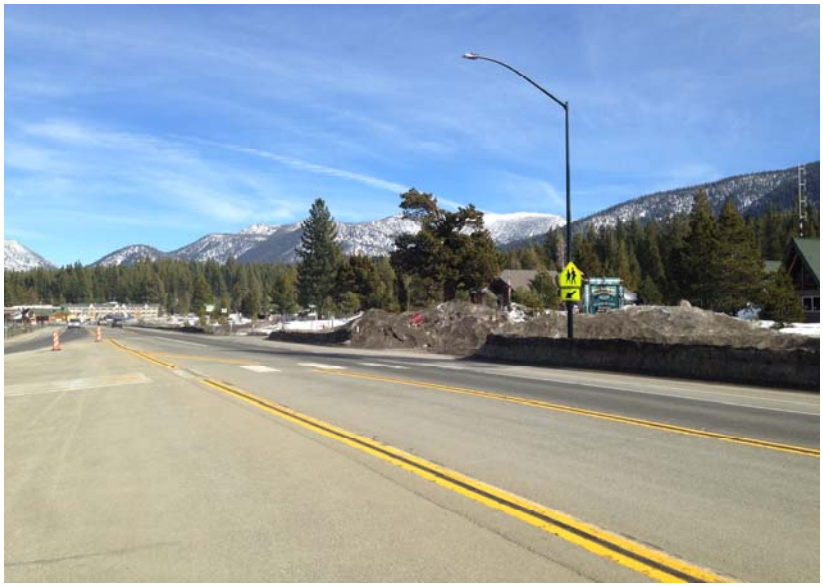




Figure 22: Apache Ave Intersection and Midblock School Pedestrian Crossing (Photo Source: Isebrands; Aerial Image Source: Google Earth)

This design is not consistent with best practices for a pedestrian/school crossing on a high speed (40mph) roadway. The community was vocal about not wanting to move the crosswalk; however, the crosswalk was relocated as part of *1A732 Water Quality* project. (It also installed the most current stripping for bike lanes.)

Caltrans determined the mid-block crossing near the CA Ag Inspection Station is an easier place to cross, due to the wide gap in travel lanes created by the CA Ag Inspection Station widening, than the Apache Ave intersection where more vehicle conflicts exist. The crosswalk at the intersection was removed for potential safety reasons prior to the installation of the crosswalk at the CA Ag Inspection Station. Rear end collisions had occurred while pedestrians were trying to cross. The connections and pathways to/from this crosswalk are currently not maintained in the winter so pedestrians must walk in US 50 between the crosswalk and Apache Ave[27].

[27] Eldorado County plans to start performing winter maintenance/plowing on the Meyers bikeway in winter 2016 - 2017

Suggested Improvements:

- Consider evaluating current location of the midblock school pedestrian crossing in consultation with the school and users. Re-assess conflicts and safety of the mid-block vs. intersection high visibility crossing where a shorter crossing (90ft/40 ft shorter) can be achieved and winter maintenance at the crossings can be done with street plowing.
- Consider a mountable/plowable raised pedestrian refuge island in the design keeping in mind winter maintenance needs and a landing area/transition to any on street pedestrian movements on Apache Ave. A mountable curb is shown in Figure 23 and Appendix B.

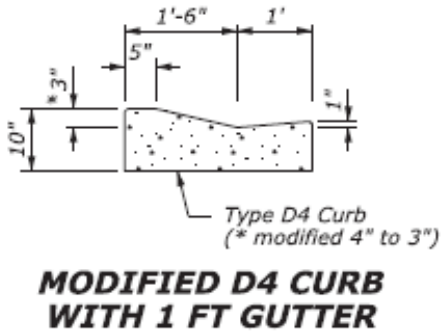


Figure 23: Mountable/Plowable Curb Examples (Source: Caltrans)

- Consider analysis of warrant/need for a pedestrian activated Rectangular Rapid Flash Beacon (RRFB) or a Pedestrian Hybrid Beacon (PHB) if the crossing remains at the midblock location the PHB could also be considered at an intersection crossing (see MUTCD for more information).
- Consider adding turn lane(s) on Apache Ave to help with conflicts and delays with or without the addition of a crosswalk at this location.
- Conduct field inspection of signs in this area to reduce sign clutter and increase visibility
- Under striping operations update bike lane markings to current CA-MUTCD standards that includes a buffer.
- Determine if this marked school crossing is in a school zone (by law) and whether a school zone posted speed limit reduction is warranted in this area. A speed feedback sign to alert drivers when they are over the posted speed limit may be an option as a part of that effort.
- *Long term consideration* for a roundabout at Apache Ave to continue to encourage drivers to use a lower speed in the Meyers community (Refer to 2010 traffic study)

Segment between Apache Ave and Santa Fe St/Apache Ave

In this 1,500ft stretch of the study area, there are 11 access points (driveways) with almost all of those being within 700ft of the Santa Fe St/Apache Ave intersection. This includes one lane in each direction on US 50, a two-way-left-hand-turn-lane (TWLTL) and a Class I and II bikeway. Between the golf course parking lot and just west of Pioneer Trail the right of way through Meyers is its narrowest.



Figure 24: Class I Pathway near Meeks Lumber (Photo Source: Isebrands)

Although not observed during the RSA, the RSA Team was able to share past observations of the typical ingress and egress movements when pedestrians and cyclists are using this area. Additionally, the pathway is not currently maintained in the winter and is impassable, as shown in Figure 24; however in 2017 it is anticipated to be maintained by El Dorado County through Measure R/S funding.

There is approximately 1,700ft between the two high visibility pedestrian crossings on either side of this area; however, there are active crossing areas near the Chevron, Lira's grocery, Meeks, Conservation Corp, restaurants, and various small businesses.

Suggested Improvements:

- Re-design[28] driveways to allow the Class I pathway to be contiguous through the driveways, reducing effect that the driveway looks and operates like an intersection, as shown in Figure 25.
- Consider a pedestrian crossing study (i.e. origins and destinations of pedestrian movements) in this area to establish the best location for a marked high visibility pedestrian crossing.
- Provide a high visibility pedestrian crossing once optimal and safest location is determined
  - A RRFB or PHB may also be considered to supplement the crossing on this high speed roadway if warranted.
  - Consider a mountable/plowable raised pedestrian refuge island in the design keeping in mind winter maintenance needs.

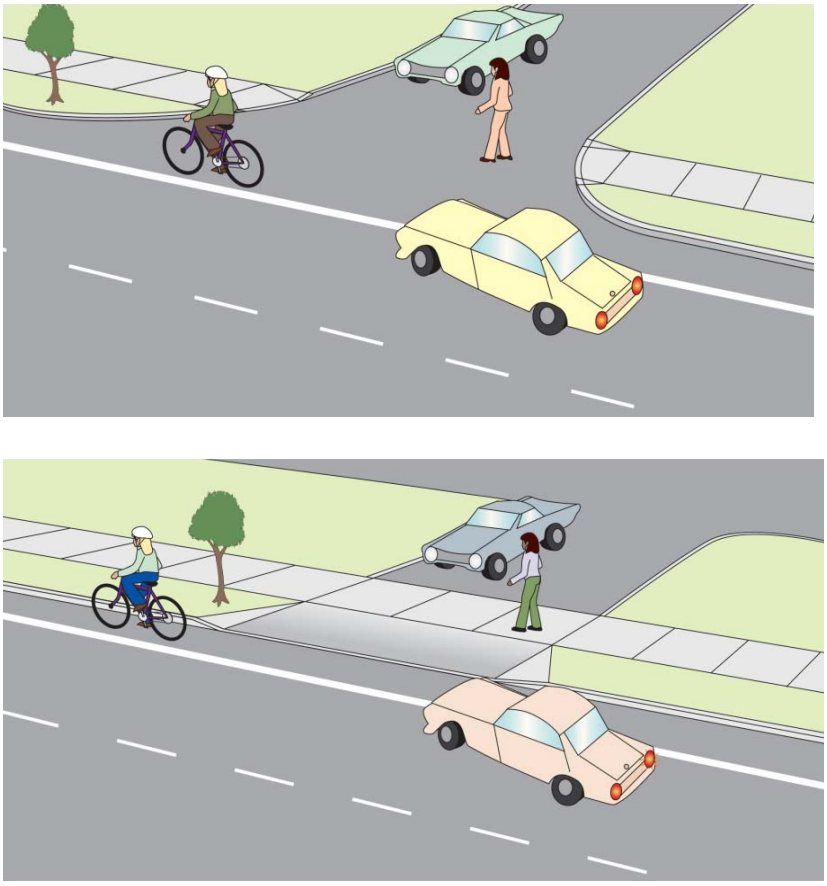


Figure 25: Comparison of a commercial driveway designed with and without emphasis on sidewalk (Source: FHWA)

- Plan for changes in snow removal operations due to Class I pathway being maintained during the winter and coordinate with Caltrans, El Dorado County and property owners. Consider requiring contractor to coordinate with Caltrans plowing procedures and update current maintenance agreement, signed in 1992 between County and Caltrans.
- Consider preparing a "Snow Management Plan" that includes consideration for US 50, Pathways, business owners.
- Consult with business owners on their operations and need for all access points to US 50.

28 http://tahoempo.org/ActiveTransportationPlan/docs/appendices/Appendix%20A_Complete%20Street%20Resource%20Guide.pdf

Pioneer Trail Intersection

The Pioneer Trail intersection is the northern gateway to Meyers from South Lake Tahoe. It is the only signalized intersection in the study area. Drivers are required to reduce their 55 mph speed to a 40 mph headed into Meyers in this area. The AADT of Pioneer Trail is approximately 6,335 vehicles per day. According to CHP this is the highest crash location within the study area. This intersection is a choke point during the peak periods. Right turning vehicles from NB US 50 to Pioneer Trail are given priority for intersection efficiency (right green arrow). This right turn tends to be a fast movement. During the winter months this area can be icy (cross slope, drainage issues and lack of sun/freeze-thaw) and contributes to crashes. A number of the crashes occur when vehicles on EB US 50 turn right onto EB Pioneer Trail at an unsafe speed and then slide into the WB side of Pioneer Trail. Intersection and stopping sight distance/triangles at the intersection may be affected by trees, poles, signal cabinet and signs.

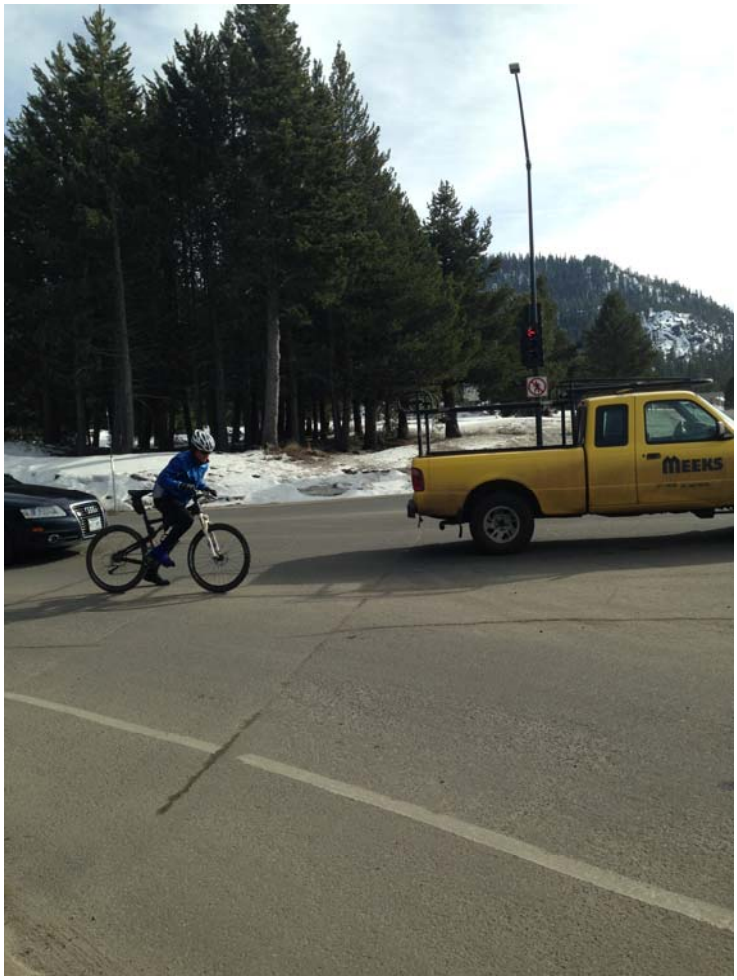


Figure 26: Pioneer Trail Intersection (Source: Isebrands)

Pedestrian and bicycle facilities are disjointed and lack connectivity at this intersection. Pedestrians are only allowed to cross US 50 in the crosswalk on the north side of the intersection and that crossing does not connect to another pedestrian facility. All other pedestrian movements are prohibited. The Class I bicycle facility parallel to US 50 does not connect to the Class II facility or the Class I pathway east of US 50.

Suggested Improvements:

- Consider providing full access for pedestrians and bicyclists including crosswalks and refuge islands.
- Provide a crosswalk across Pioneer Trail to connect the crosswalk to the Class I bikeway.
- Consider alternative signal timings (adaptive signals) based on demand - daily and seasonally.
- Examine feasibility of modifying the low area on the right turn to improve drainage. If reconstruction is not an option, high-friction surface treatment (HFST) may improve the area at a lower cost and in a shorter time frame.
- Consideration could be given to this intersection serving as a gateway to Meyers with features that would encourage slower speeds through Meyers.
- Long term consideration for a roundabout.

Summary of Safety and Operational Improvements

Table 1 summarizes the safety and operational improvements suggested as a part of this RSA. The improvements can also be considered in terms of ease of implementation from short-term to mid-term to long-term goals and strategies.

Table 1: Summary of Improvement Strategies

Location	Strategy							
	Intersection Sight Distance/Triangle Field Checks	Bicycle Facililty Connections	Bicycle Facility Marking Adjustments	Crosswalk Marking Adjustments	RRFB or PHB	ITS	Re-design	Roundabout consideration
N Upper Truckee Rd	X	X				X		
S Upper Truckee Rd	X	X						
Chain up Area (Pomo to SR 89)						X	X	
SR 89		X	X	X			X	X[2]
CA Ag Inspection Station				X	X	X	X	
Apache Ave	X		X	X			X	X
Apache Ave/Sante Fe			X	X	X[3]			
Pioneer Trail	X	X		X			X[1]	X

[1] At Pioneer intersection this includes signal re-timing
[2] A roundabout is under design for this location. To be constructed in 2019.
[3] This would be for mid block locations only.

Short Term (next 6 months)

- Pavement Markings and Signs
    - Chain on and Chain off area/limits signing for both directions
    - Bicycle lane marking improvements including buffered bike lanes in lieu of hatched markings
    - Signing in the CA Ag Inspection station area (placement of signs and use of warning signs)
    - Midblock Apache Ave school crossing study
    - Santa Fe St/Apache Ave crosswalk markings and location study
- Collaboration, Education and Enforcement
    - Meeting with CA ICE TAP for roundabout design and impacts
    - Consider traffic incident management meeting to discuss innovative ways to work with community and employers related to peak periods
    - Coordinate with the CA Department of Food and Agriculture
    - Request a Peer Exchange with other agency's in snowy mountain climates and tourism

Mid Term (6 months – 2 yrs)

- Update signal timings on Pioneer Trail
- Provide pedestrians full access at Pioneer Trail intersection - with pedestrian signal
- Study to design a buffered bike lane though Meyers
- Reconstruct US 50/SR 89 intersection (2019) and include expansion of Class I facilities to N. and S. Upper Truckee.
- Study and re-design chain up area to expand and separate from traveled way and to serve as an active transportation only roadway during summer months.
- Implement education strategies by collaborating with resorts, tourism industry and communities
- Access control and interface of driveways and Pathway crossings

Long Term (2 yrs- 5 yrs)

- Reconstruct chain up area
- Relinquishment of excess Right of Way
- Consider conversion of the Pioneer Trail and Apache Ave intersections to roundabouts as the capacity and safety improvements are needed.
- Modify CA Ag Inspection Station

The recommended strategies for the Meyers RSA are consistent with the 2015 CA SHSP Pedestrian and Bicycle and Intersection Challenge Area strategies as shown in Tables 4 and 5.

Table 4: CA Strategic Highway Safety Plan Pedestrian and Bicycle Challenge Area Strategies

Pedestrians	Bicycles
• Improve the safety of pedestrian crossings by using proven effective countermeasures. • Expand effective enforcement and education of all roadway users to improve pedestrian safety based on known risk factors and data trends. • Increase funding for pedestrian safety infrastructure and non-infrastructure projects. • Improve collection, use, and analysis of data needed for pedestrian safety planning and programming. • Increase pedestrian safety-focused coordination among State, regional, and local agencies including on transportation planning and land use efforts.	• Improve roadway and bikeway planning, design, operations, and connectivity to enhance bicycling safety and mobility to all destinations. • Improve data collection regarding bicyclist trips, injuries, and fatalities on California roadways and bicycle paths. • Improve education and enforcement to promote safe multi-modal travel. • Encourage more bicycle travel by improving public attitudes about bicycling as a safe mode of transportation. • Develop safe, direct, and connected routes for bicycling.

Table 5: CA Strategic Highway Safety Plan Intersection/Interchange/Access Challenge Area Strategies

- Mainstream and accelerate the deployment of innovative solutions that have proven to be highly effective and cost-effective.
- Pursue programmatic application of low-cost and high impact strategies, countermeasures, and activities.
- Focus on continuous improvement and collaboration by building on the foundational work products and findings generated by previous strategic safety and other statewide initiatives.
- Emphasize the role and importance of visibility among road users and workers (especially during hours of darkness).
- Minimize or avoid safety performance degradation resulting from land use and highway infrastructure investment proposals.
- Increase understanding and collaboration among transportation system owners, operators, investors, and regional agencies regarding the effect of access-related decisions on safety and overall system performance.

Funding Sources for Safety and Operational Improvements

Some of the identified projects and funding sources for safety and operational studies and improvements include the following:

Active Projects

- El Dorado County's TRPA funded On Our Way grant for the Meyers Corridor Project
- Caltrans SHOPP US 50/89 intersection improvements (programmed for 2019)

Potential Funding Sources

- SHOPP – State Highway Operations Protection Plan (Caltrans)
    - Pedestrian Crossing Enhancement Program*
    - Operational Improvements (Request can be made to Caltrans to perform an engineering investigation to develop a project proposal. Caltrans SHOPP funding - Pedestrian Crossing Enhancement Program for improvements related to pedestrian crossings.)
- Active Transportation Program (Caltrans/FHWA)
- State and local HSIP programs
- Federal Lands Access Program (FLAP)
- TRPA / El Dorado County Congestion Management Air Quality Funds (CMAQ)
- Facilitation of the Mountain Corridor Peer Exchange could be requested to the National Center for Rural Road Safety

Conclusions

RSA's are conducted to address both proactive and reactive safety issues and are not solely based on documented crash data but also take into consideration the perceived risk of the users.[29] The Meyers, CA RSA Team reviewed traffic reports, crash and user count data, stakeholder perspectives as well as conducted field observations of the study area to assess the performance of US 50 for all roadway users.

Some of the improvement goals and strategies include:

- Seek out both innovative and state of the practice design and technologies for pedestrian crossings, roundabouts and chain on/off areas in similar environments with high altitude seasonal peaking traffic.
- Utilize the excess right of way throughout the corridor to improve maintenance, operations and safety for all users regardless of the season and traffic volumes.
- Align small, medium and large opportunities and projects with community, data and performance driven strategies.
- Strive for connectivity of pedestrians and bicycle facilities year round
- Coordinate and collaborate with all agency and community stakeholders for both seasonal issues as well as peak and off-peak periods which would produce a snow management plan, an updated cooperative agreement, and address other issues explained throughout this report.

Improving this corridor will not only be a proactive approach to increase safety, but also provide opportunities for Meyers' residents and visitors to use safe multi-modal transportation.

Acknowledgements

The RSA Team would like to thank the California Conservation Corps for use of the Tahoe Center during the field review.

[29] FHWA. Bicycle Road Safety Audit Guidelines and Prompt Lists.

Appendix A – Real Time Incident Messaging

From: "Colorado Department of Transportation" <cdot@service.govdelivery.com>
Date: March 23, 2016 at 6:29:48 PM MDT
To:
Subject: Traction Law I-70 between Silverthorne and Tunnel
Reply-To: cdot@service.govdelivery.com

Traction Law I-70 both directions between Silverthorne and the Tunnel. Passenger vehicles required to have snow or mud/snow tires, use chains/alternative traction devices, or be a 4WD/AWD vehicle.

Visit COtrip.org or call 511 for more info.

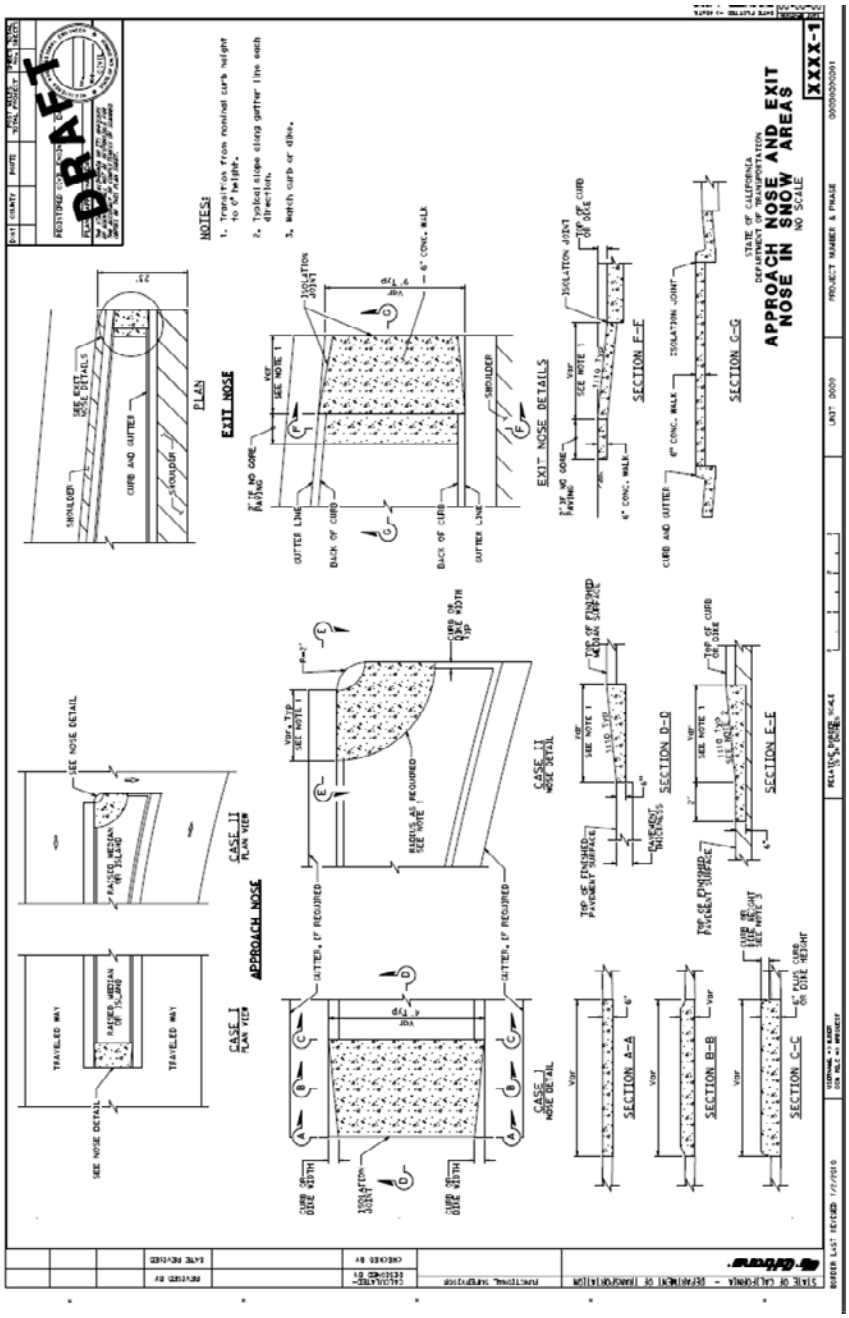
SHARE

From: "Colorado Department of Transportation" <cdot@service.govdelivery.com>
Date: March 16, 2016 at 8:33:54 PM MDT
To:
Subject: Heavy Traffic I-70 EB 30
Reply-To: cdot@service.govdelivery.com

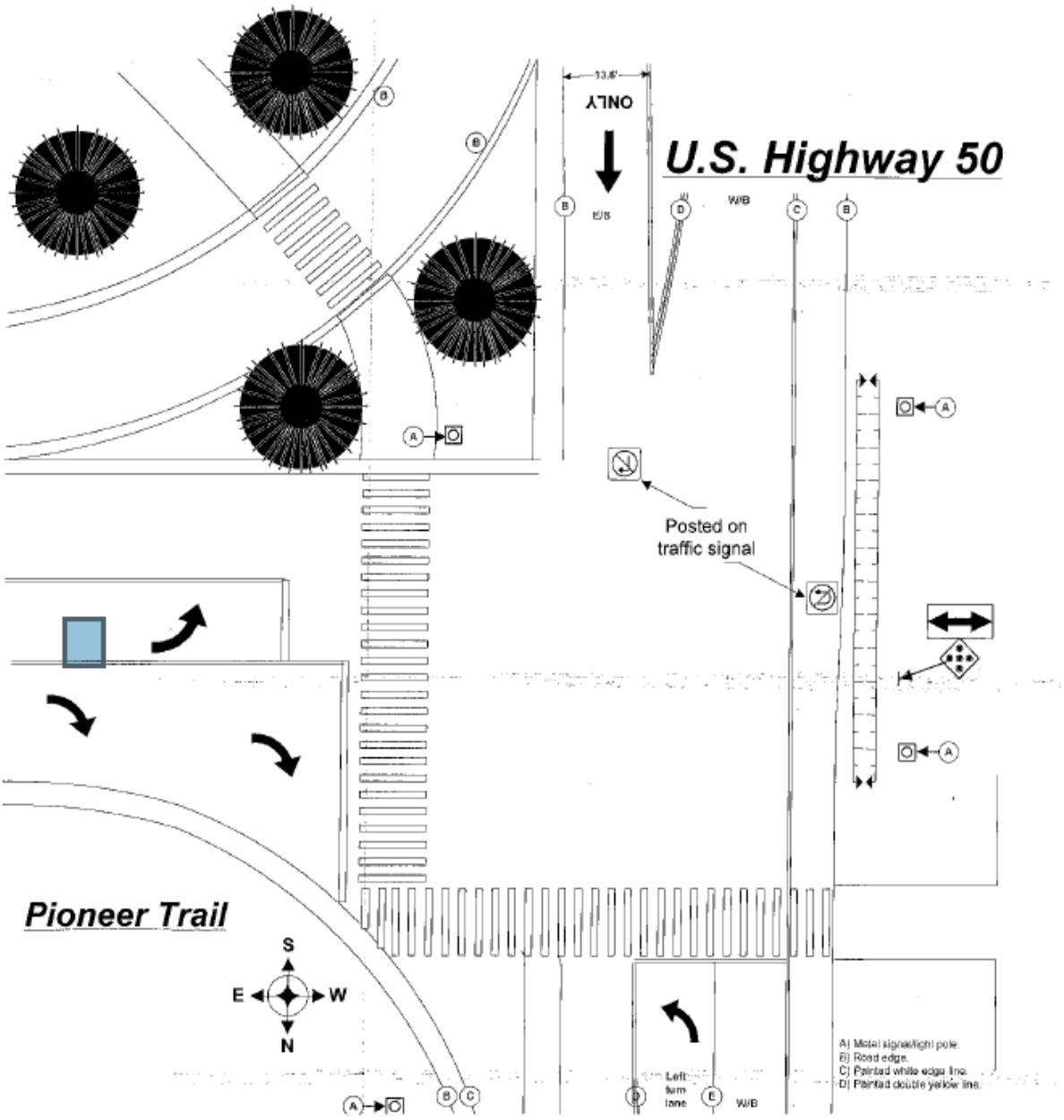
Heavy Traffic Update I-70 EB 30+ minutes extra travel time from Silverthorne to Denver/C-470, MM 205-259. Total travel time approximately 85 minutes.

Call 511 or visit COtrip.org or get CDOT Mobile App

Appendix B – Mountable/Plowable Curb Details



Appendix C – Pioneer Trail/US 50 Intersection Concepts




Connect Path
High Visibility Crosswalk
Class 1 Connection Pat Lowe Bike Trail

US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

Existing Conditions

TABLE B1: US 50/Pioneer Trail - Summer Weekend Traffic Turning Movement Counts

Count Date	8/8/2010					AM Peak Hour		10:45 AM										
Start Time	8:00 AM					PM Peak Hour		12:45 PM										
Street Name	**US Highway 50**								**Pioneer Trail**									
Direction	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	*Ped*	Left	Thru	Right	*Ped*	Left	Thru	Right	*Ped*	Left	Thru	Right	*Ped*	Total	1hr total
8:00 AM	0	39	13	*0*	2	94	0	*0*	0	0	0	*0*	35	0	3	*0*	186	983
8:15 AM	0	52	23	*0*	1	96	0	*0*	0	0	0	*0*	52	0	2	*0*	226	1,095
8:30 AM	0	61	27	*0*	5	126	0	*0*	0	0	0	*0*	59	0	2	*0*	280	1,194
8:45 AM	0	67	22	*0*	3	132	0	*0*	0	0	0	*0*	64	0	4	*0*	292	1,323
9:00 AM	0	83	14	*0*	3	148	0	*0*	0	0	0	*0*	48	0	2	*0*	298	1,567
9:15 AM	0	89	29	*0*	2	151	0	*0*	0	0	0	*0*	48	0	6	*0*	325	1,806
9:30 AM	0	108	36	*0*	7	169	0	*0*	0	0	0	*0*	84	0	6	*0*	410	2,024
9:45 AM	0	139	43	*0*	4	228	0	*0*	0	0	0	*0*	117	0	5	*0*	536	2,202
10:00 AM	0	151	41	*0*	8	231	0	*1*	0	0	0	*0*	99	0	7	*0*	537	2,271
10:15 AM	0	160	29	*0*	7	221	0	*0*	0	0	0	*0*	117	0	8	*0*	542	2,355
10:30 AM	0	192	40	*0*	4	215	0	*0*	0	0	0	*0*	132	0	5	*0*	588	2,390
10:45 AM	0	236	55	*0*	4	185	0	*0*	0	0	0	*0*	111	0	14	*0*	605	2,402
11:00 AM	0	246	55	*0*	2	168	0	*0*	0	0	0	*0*	135	0	15	*0*	621	2,373
11:15 AM	0	213	53	*0*	5	193	0	*0*	0	0	0	*0*	103	0	10	*0*	577	2,382
11:30 AM	0	248	37	*0*	2	169	0	*0*	0	0	0	*0*	134	0	11	*0*	601	2,442
11:45 AM	0	328	43	*0*	8	122	0	*0*	0	0	0	*0*	73	0	1	*0*	575	2,437
12:00 PM	0	276	68	*0*	4	177	0	*0*	0	0	0	*0*	101	0	4	*0*	630	2,500
12:15 PM	0	265	67	*0*	1	182	0	*0*	0	0	0	*0*	119	0	3	*0*	637	2,518
12:30 PM	0	293	29	*1*	1	210	0	*0*	0	0	0	*0*	61	0	2	*1*	596	2,514
12:45 PM	0	290	50	*0*	0	181	0	*0*	0	0	0	*0*	113	0	4	*0*	638	2,569
1:00 PM	0	228	61	*0*	4	206	0	*0*	0	0	0	*0*	135	0	13	*0*	647	2,543
1:15 PM	0	243	59	*0*	2	212	0	*0*	0	0	0	*0*	110	0	8	*0*	634	2,534
1:30 PM	0	238	74	*0*	2	195	0	*0*	0	0	0	*0*	126	0	15	*1*	650	2,499
1:45 PM	0	207	65	*0*	2	219	0	*0*	0	0	0	*0*	108	0	12	*1*	613	2,505
2:00 PM	0	235	67	*0*	0	209	0	*0*	0	0	0	*0*	116	0	11	*0*	638	2,538
2:15 PM	0	197	77	*0*	3	229	0	*0*	0	0	0	*0*	85	0	8	*0*	599	2,554
2:30 PM	0	212	96	*0*	8	243	0	*0*	0	0	0	*0*	83	0	14	*0*	656	2,557
2:45 PM	0	226	89	*0*	2	245	0	*0*	0	0	0	*0*	77	0	7	*0*	646	2,441
3:00 PM	0	198	103	*0*	4	232	0	*0*	0	0	0	*0*	108	0	9	*0*	654	2,370
3:15 PM	0	195	96	*0*	3	210	0	*0*	0	0	0	*0*	92	0	6	*0*	602	2,389
3:30 PM	0	272	44	*8*	1	186	0	*0*	0	0	0	*0*	27	0	10	*1*	540	2,405
3:45 PM	0	269	91	*2*	7	104	0	*0*	0	0	0	*0*	100	0	4	*0*	575	2,504
4:00 PM	0	250	89	*0*	8	222	0	*0*	0	0	0	*0*	95	0	9	*0*	673	2,534
4:15 PM	0	244	67	*0*	8	205	0	*0*	0	0	0	*0*	84	0	10	*0*	618	
4:30 PM	0	241	82	*0*	5	211	0	*0*	0	0	0	*0*	88	0	12	*1*	639	
4:45 PM	0	212	67	*0*	9	226	0	*0*	0	0	0	*0*	80	0	11	*0*	605	
AM Peak-Hour V	**0**	**941**	**200**	***0***	**13**	**715**	**0**	***0***	**0**	**0**	**0**	***0***	**483**	**0**	**50**	***0***	**2402**	
PM Peak-Hour V	**0**	**999**	**244**	*0*	**8**	**794**	**0**	*0*	**0**	**0**	**0**	*0*	**484**	**0**	**40**	*1*	**2,569**	
9-Hour Total	0	7191	2001	11	141	6752	0	1	0	0	0	0	3319	0	273	5	19677	

Source: LSC Transportations Consultants, Inc.

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake Tahoe
Control:

Project ID: 17-07665-001
Date: 2017-08-25

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	0	146	122	0	20	99	0	0	0	0	0	0	49	0	13	0	449
3:15 PM	0	162	146	0	12	87	0	0	0	0	0	0	48	0	14	0	469
3:30 PM	0	160	140	0	14	91	0	0	0	0	0	0	63	0	7	0	475
3:45 PM	0	150	122	0	17	108	0	0	0	0	0	0	48	0	16	0	461
4:00 PM	0	117	132	0	15	118	0	0	0	0	0	0	64	0	12	0	458
4:15 PM	0	154	116	0	10	104	0	0	0	0	0	0	41	5	14	1	445
4:30 PM	0	134	97	0	10	116	0	0	0	0	0	0	60	0	13	0	430
4:45 PM	0	163	143	0	12	111	0	0	0	0	0	0	51	0	22	0	502
5:00 PM	0	110	140	0	15	103	0	0	0	0	0	0	79	0	19	0	466
5:15 PM	0	132	111	0	9	125	0	0	0	0	0	0	75	0	14	0	466
5:30 PM	0	144	131	1	14	101	0	0	0	0	0	0	81	0	11	0	483
5:45 PM	0	124	121	0	16	82	0	0	0	0	0	0	59	0	16	0	418
6:00 PM	0	113	123	0	16	91	0	0	0	0	0	0	60	0	10	0	413
6:15 PM	0	132	121	0	17	92	0	0	0	0	0	0	69	0	14	0	445
6:30 PM	0	92	90	0	10	76	0	0	0	0	0	0	47	0	12	0	327
6:45 PM	0	126	106	0	20	69	0	0	0	0	0	0	41	0	15	0	377
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2159	1961	1	227	1573	0	0	0	0	0	0	935	5	222	1	7084
APPROACH %'s :	0.00%	52.39%	47.59%	0.02%	12.61%	87.39%	0.00%	0.00%					80.40%	0.43%	19.09%	0.09%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	549	525	1	50	440	0	0	0	0	0	0	286	0	66	0	1917
PEAK HR FACTOR :	0.000	0.842	0.918	0.250	0.833	0.880	0.000	0.000	0.000	0.000	0.000	0.000	0.883	0.000	0.750	0.000	0.955
		0.878				0.914								0.898			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake Tahoe
Control:

Project ID: 17-07665-001
Date: 2017-08-26

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	142	74	0	9	99	0	0	0	0	0	0	67	0	13	0	404
10:15 AM	0	127	70	0	8	95	0	0	0	0	0	0	78	0	13	0	391
10:30 AM	0	163	94	0	13	108	0	0	0	0	0	0	66	0	17	0	461
10:45 AM	0	145	73	0	15	96	0	0	0	0	0	0	77	0	13	0	419
11:00 AM	0	188	105	0	9	123	0	0	0	0	0	0	75	0	15	0	515
11:15 AM	0	180	98	0	15	86	0	0	0	0	0	0	93	0	24	0	496
11:30 AM	0	171	98	0	10	99	0	0	0	0	0	0	90	0	14	0	482
11:45 AM	0	175	95	0	6	102	0	0	0	0	0	0	62	0	10	0	450
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1291	707	0	85	808	0	0	0	0	0	0	608	0	119	0	3618
APPROACH %'s :	0.00%	64.61%	35.39%	0.00%	9.52%	90.48%	0.00%	0.00%					83.63%	0.00%	16.37%	0.00%	
PEAK HR :	**11:00 AM - 12:00 PM**																TOTAL
PEAK HR VOL :	0	714	396	0	40	410	0	0	0	0	0	0	320	0	63	0	1943
PEAK HR FACTOR :	0.000	0.949	0.943	0.000	0.667	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.860	0.000	0.656	0.000	0.943
		0.947				0.852								0.818			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	116	82	0	9	134	0	0	0	0	0	0	67	0	8	0	416
4:15 PM	0	119	72	0	10	120	0	0	0	0	0	0	66	0	6	0	393
4:30 PM	0	108	98	0	9	140	0	0	0	0	0	0	60	0	11	0	426
4:45 PM	0	115	97	0	13	136	0	0	0	0	0	0	49	0	11	0	421
5:00 PM	0	107	81	0	12	111	0	0	0	0	0	0	64	0	24	0	399
5:15 PM	0	87	76	0	12	137	0	0	0	0	0	0	51	0	11	0	374
5:30 PM	0	75	75	0	11	112	0	0	0	0	0	0	45	0	9	0	327
5:45 PM	0	68	62	0	13	116	0	0	0	0	0	0	54	0	9	0	322
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	795	643	0	89	1006	0	0	0	0	0	0	456	0	89	0	3078
APPROACH %'s :	0.00%	55.29%	44.71%	0.00%	8.13%	91.87%	0.00%	0.00%					83.67%	0.00%	16.33%	0.00%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	458	349	0	41	530	0	0	0	0	0	0	242	0	36	0	1656
PEAK HR FACTOR :	0.000	0.962	0.890	0.000	0.788	0.946	0.000	0.000	0.000	0.000	0.000	0.000	0.903	0.000	0.818	0.000	0.972
		0.952				0.958								0.927			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake Tahoe
Control:

Project ID: 17-07665-001
Date: 2017-08-27

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	0	133	62	0	8	187	0	0	0	0	0	0	125	0	9	0	524
11:15 AM	0	116	64	0	2	177	0	0	0	0	0	0	143	0	2	0	504
11:30 AM	0	138	50	0	3	188	0	0	0	0	0	0	120	0	5	0	504
11:45 AM	0	132	75	0	3	165	0	0	0	0	0	0	127	0	10	0	512
12:00 PM	0	147	69	0	5	148	0	0	0	0	0	0	112	0	5	0	486
12:15 PM	0	150	69	0	2	159	0	0	0	0	0	0	112	0	6	0	498
12:30 PM	0	151	69	0	7	192	0	0	0	0	0	0	111	0	9	0	539
12:45 PM	0	136	85	0	6	182	0	0	0	0	0	0	112	0	9	0	530
1:00 PM	0	122	80	0	13	178	0	0	0	0	0	0	129	0	10	0	532
1:15 PM	0	152	77	0	6	212	0	0	0	0	0	0	118	0	10	0	575
1:30 PM	0	125	81	0	15	170	0	0	0	0	0	0	97	0	7	0	495
1:45 PM	0	133	65	0	4	187	0	1	0	0	0	0	95	0	6	0	491
2:00 PM	0	121	71	0	10	168	0	0	0	0	0	0	95	0	13	0	478
2:15 PM	0	132	106	0	10	197	0	0	0	0	0	0	97	0	7	0	549
2:30 PM	0	112	72	0	11	186	0	0	0	0	0	0	94	0	8	0	483
2:45 PM	0	108	91	0	8	192	0	0	0	0	0	0	109	0	9	0	517
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2108	1186	0	113	2888	0	1	0	0	0	0	1796	0	125	0	8217
APPROACH %'s :	0.00%	64.00%	36.00%	0.00%	3.76%	96.20%	0.00%	0.03%					93.49%	0.00%	6.51%	0.00%	
PEAK HR :	12:30 PM - 01:30 PM																TOTAL
PEAK HR VOL :	0	561	311	0	32	764	0	0	0	0	0	0	470	0	38	0	2176
PEAK HR FACTOR :	0.000	0.923	0.915	0.000	0.615	0.901	0.000	0.000	0.000	0.000	0.000	0.000	0.911	0.000	0.950	0.000	0.946
		0.952				0.913								0.914			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake
Control:

Project ID: 17-7723-001
Date: 10/13/2017

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	0	135	144	0	13	113	0	0	0	0	0	0	63	0	13	0	481
3:15 PM	0	146	119	0	18	99	0	0	0	0	0	0	52	0	20	1	455
3:30 PM	0	148	157	0	9	104	0	0	0	0	0	0	58	0	10	0	486
3:45 PM	0	150	136	0	8	113	0	0	0	0	0	0	50	0	15	0	472
4:00 PM	0	125	109	0	10	91	0	0	0	0	0	0	52	0	16	0	403
4:15 PM	0	132	163	0	7	74	0	0	0	0	0	0	60	0	12	0	448
4:30 PM	0	147	123	0	13	108	0	0	0	0	0	0	68	0	9	0	468
4:45 PM	0	144	133	0	16	87	0	0	0	0	0	0	52	0	15	0	447
5:00 PM	0	142	122	0	11	92	0	0	0	0	0	0	49	0	10	0	426
5:15 PM	0	126	135	0	10	81	0	0	0	0	0	0	78	0	9	0	439
5:30 PM	0	116	144	0	12	91	0	0	0	0	0	0	59	0	17	0	439
5:45 PM	0	111	134	0	11	85	0	0	0	0	0	0	61	0	1	0	403
6:00 PM	0	79	107	0	8	88	0	0	0	0	0	0	52	0	6	0	340
6:15 PM	0	109	107	0	9	64	0	0	0	0	0	0	42	0	2	0	333
6:30 PM	0	76	93	0	8	56	0	0	0	0	0	0	47	0	7	0	287
6:45 PM	0	107	84	0	9	57	0	0	0	0	0	0	30	0	7	0	294
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1993	2010	0	172	1403	0	0	0	0	0	0	873	0	169	1	6621
APPROACH %'s :	0.00%	49.79%	50.21%	0.00%	10.92%	89.08%	0.00%	0.00%					83.70%	0.00%	16.20%	0.10%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	0	579	556	0	48	429	0	0	0	0	0	0	223	0	58	1	1894
PEAK HR FACTOR :	0.000	0.965	0.885	0.000	0.667	0.949	0.000	0.000	0.000	0.000	0.000	0.000	0.885	0.000	0.725	0.250	0.974
		0.930				0.946								0.928			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake
Control:

Project ID: 17-7723-001
Date: 10/14/2017

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	87	58	0	14	94	0	0	0	0	0	0	80	0	5	0	338
10:15 AM	0	81	64	0	17	110	0	0	0	0	0	0	90	0	11	0	373
10:30 AM	0	96	71	0	9	129	0	0	0	0	0	0	71	0	4	0	380
10:45 AM	0	102	62	0	5	127	0	0	0	0	0	0	88	0	9	0	393
11:00 AM	0	101	55	0	10	135	0	0	0	0	0	0	73	0	16	0	390
11:15 AM	0	128	84	0	6	166	0	0	0	0	0	0	105	0	15	0	504
11:30 AM	0	143	89	0	11	131	0	0	0	0	0	0	71	0	11	0	456
11:45 AM	0	137	59	0	9	132	0	0	0	0	0	0	70	0	10	0	417
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	875	542	0	81	1024	0	0	0	0	0	0	648	0	81	0	3251
APPROACH %'s :	0.00%	61.75%	38.25%	0.00%	7.33%	92.67%	0.00%	0.00%					88.89%	0.00%	11.11%	0.00%	
PEAK HR :	**11:00 AM - 12:00 PM**																TOTAL
PEAK HR VOL :	0	509	287	0	36	564	0	0	0	0	0	0	319	0	52	0	1767
PEAK HR FACTOR :	0.000	0.890	0.806	0.000	0.818	0.849	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.000	0.813	0.000	0.876
		0.858				0.872								0.773			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	156	138	0	10	110	0	0	0	0	0	0	53	0	17	0	484
4:15 PM	0	139	129	0	12	117	0	0	0	0	0	0	67	0	9	0	473
4:30 PM	0	117	108	0	12	104	0	0	0	0	0	0	63	0	11	0	415
4:45 PM	0	111	103	0	9	94	0	0	0	0	0	0	54	0	13	1	385
5:00 PM	0	107	118	0	6	103	0	0	0	0	0	0	61	0	13	0	408
5:15 PM	0	121	104	0	12	95	0	0	0	0	0	0	55	0	5	0	392
5:30 PM	0	95	90	0	5	91	0	0	0	0	0	0	61	0	7	0	349
5:45 PM	0	87	68	0	8	75	0	0	0	0	0	0	59	0	9	0	306
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	933	858	0	74	789	0	0	0	0	0	0	473	0	84	1	3212
APPROACH %'s :	0.00%	52.09%	47.91%	0.00%	8.57%	91.43%	0.00%	0.00%					84.77%	0.00%	15.05%	0.18%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	523	478	0	43	425	0	0	0	0	0	0	237	0	50	1	1757
PEAK HR FACTOR :	0.000	0.838	0.866	0.000	0.896	0.908	0.000	0.000	0.000	0.000	0.000	0.000	0.884	0.000	0.735	0.250	0.908
		0.851				0.907								0.947			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 50 & Pioneer Trail
City: South Lake
Control:

Project ID: 17-7723-001
Date: 10/15/2017

Total

NS/EW Streets:	US 50				US 50				Pioneer Trail				Pioneer Trail				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	0	73	51	0	6	212	0	0	0	0	0	0	148	0	1	0	491
11:15 AM	0	85	36	0	6	200	0	0	0	0	0	0	123	0	5	0	455
11:30 AM	0	97	67	0	4	185	0	0	0	0	0	0	144	0	8	0	505
11:45 AM	0	109	55	0	8	184	0	0	0	0	0	0	121	0	7	0	484
12:00 PM	0	99	49	0	3	183	0	0	0	0	0	0	125	0	5	0	464
12:15 PM	0	102	48	0	5	192	0	0	0	0	0	0	148	0	10	0	505
12:30 PM	0	127	61	0	6	198	0	0	0	0	0	0	134	0	10	0	536
12:45 PM	0	87	64	0	7	206	0	0	0	0	0	0	131	0	9	0	504
1:00 PM	0	96	55	0	9	178	0	0	0	0	0	0	109	0	11	0	458
1:15 PM	0	111	66	0	5	196	0	0	0	0	0	0	98	0	7	0	483
1:30 PM	0	108	72	0	6	182	0	0	0	0	0	0	110	0	9	0	487
1:45 PM	0	106	64	0	8	151	0	0	0	0	0	0	97	0	7	0	433
2:00 PM	0	100	60	0	9	170	0	0	0	0	0	0	112	0	4	0	455
2:15 PM	0	118	81	0	2	158	0	0	0	0	0	0	109	0	4	0	472
2:30 PM	0	116	85	0	7	159	0	0	0	0	0	0	106	0	12	0	485
2:45 PM	0	80	63	0	9	144	0	0	0	0	0	0	91	0	9	0	396
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1614	977	0	100	2898	0	0	0	0	0	0	1906	0	118	0	7613
APPROACH %'s :	0.00%	62.29%	37.71%	0.00%	3.34%	96.66%	0.00%	0.00%					94.17%	0.00%	5.83%	0.00%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	0	415	222	0	21	779	0	0	0	0	0	0	538	0	34	0	2009
PEAK HR FACTOR :	0.000	0.817	0.867	0.000	0.750	0.945	0.000	0.000	0.000	0.000	0.000	0.000	0.909	0.000	0.850	0.000	0.937
		0.847				0.939								0.905			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	575	60	1121	238	15	852
Future Volume (veh/h)	575	60	1121	238	15	852
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	593	62	1156	245	15	878
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	535	476	984	1310	31	1114
Arrive On Green	0.30	0.30	0.53	0.53	0.02	0.60
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	593	62	1156	245	15	878
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	26.0	2.5	45.5	2.7	0.7	31.0
Cycle Q Clear(g_c), s	26.0	2.5	45.5	2.7	0.7	31.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	535	476	984	1310	31	1114
V/C Ratio(X)	1.11	0.13	1.18	0.19	0.48	0.79
Avail Cap(c_a), veh/h	535	476	984	1310	103	1189
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	22.0	20.5	1.5	42.1	13.3
Incr Delay (d2), s/veh	71.8	0.1	89.6	0.1	11.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.0	0.9	41.2	2.4	0.4	11.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	102.1	22.1	110.1	1.6	53.2	16.8
LnGrp LOS	F	C	F	A	D	B
Approach Vol, veh/h	655		1401			893
Approach Delay, s/veh	94.5		91.2			17.4
Approach LOS	F		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.0	50.0			56.0	30.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.5			55.0	26.0
Max Q Clear Time (g_c+I1), s	2.7	47.5			33.0	28.0
Green Ext Time (p_c), s	0.0	0.0			6.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	69.6
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	469	15	1338	255	7	894
Future Volume (veh/h)	469	15	1338	255	7	894
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	479	15	1365	260	7	912
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	498	444	1036	1321	16	1151
Arrive On Green	0.28	0.28	0.55	0.55	0.01	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	479	15	1365	260	7	912
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	22.7	0.6	47.5	2.8	0.3	31.4
Cycle Q Clear(g_c), s	22.7	0.6	47.5	2.8	0.3	31.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	498	444	1036	1321	16	1151
V/C Ratio(X)	0.96	0.03	1.32	0.20	0.44	0.79
Avail Cap(c_a), veh/h	498	444	1036	1321	104	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	22.5	19.1	1.4	42.3	12.4
Incr Delay (d2), s/veh	30.5	0.0	149.9	0.1	17.8	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.2	60.1	2.3	0.2	11.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	60.9	22.5	169.0	1.5	60.1	15.7
LnGrp LOS	E	C	F	A	E	B
Approach Vol, veh/h	494		1625			919
Approach Delay, s/veh	59.8		142.2			16.1
Approach LOS	E		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.3	52.0			57.3	28.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	49.5			33.4	24.7
Green Ext Time (p_c), s	0.0	0.0			7.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	90.6
HCM 6th LOS	F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	571	57	1090	309	12	991
Future Volume (veh/h)	571	57	1090	309	12	991
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	583	58	1112	315	12	1011
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	529	470	995	1314	26	1120
Arrive On Green	0.30	0.30	0.53	0.53	0.01	0.60
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	583	58	1112	315	12	1011
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	25.6	2.3	45.9	3.7	0.6	40.7
Cycle Q Clear(g_c), s	25.6	2.3	45.9	3.7	0.6	40.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	529	470	995	1314	26	1120
V/C Ratio(X)	1.10	0.12	1.12	0.24	0.47	0.90
Avail Cap(c_a), veh/h	529	470	995	1314	103	1201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	22.1	20.2	1.6	42.2	15.1
Incr Delay (d2), s/veh	70.3	0.1	66.4	0.1	12.5	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	0.8	35.1	3.1	0.3	16.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	100.6	22.3	86.6	1.7	54.6	24.4
LnGrp LOS	F	C	F	A	D	C
Approach Vol, veh/h	641		1427			1023
Approach Delay, s/veh	93.5		67.8			24.7
Approach LOS	F		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	50.4			56.1	30.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	2.6	47.9			42.7	27.6
Green Ext Time (p_c), s	0.0	0.0			6.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay		58.9
HCM 6th LOS		E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	430	48	1035	392	15	1103
Future Volume (veh/h)	430	48	1035	392	15	1103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	443	49	1067	404	15	1137
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	481	428	1043	1312	31	1172
Arrive On Green	0.27	0.27	0.56	0.56	0.02	0.63
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	443	49	1067	404	15	1137
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	21.0	2.0	48.5	5.1	0.7	50.4
Cycle Q Clear(g_c), s	21.0	2.0	48.5	5.1	0.7	50.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	481	428	1043	1312	31	1172
V/C Ratio(X)	0.92	0.11	1.02	0.31	0.48	0.97
Avail Cap(c_a), veh/h	524	466	1043	1312	102	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	23.9	19.3	1.7	42.4	15.5
Incr Delay (d2), s/veh	20.9	0.1	33.9	0.1	11.1	19.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.7	27.2	4.0	0.4	22.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.8	24.1	53.2	1.9	53.5	34.6
LnGrp LOS	D	C	F	A	D	C
Approach Vol, veh/h	492		1471			1152
Approach Delay, s/veh	49.0		39.1			34.8
Approach LOS	D		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.0	53.0			59.0	28.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	2.7	50.5			52.4	23.0
Green Ext Time (p_c), s	0.0	0.0			2.2	0.5

Intersection Summary			
HCM 6th Ctrl Delay		39.1	
HCM 6th LOS		D	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	575	60	1121	238	15	852
Future Volume (veh/h)	575	60	1121	238	15	852
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	593	0	1156	0	15	878
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	722		1126		32	1266
Arrive On Green	0.21	0.00	0.60	0.00	0.02	0.68
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	593	0	1156	0	15	878
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	12.9	0.0	47.5	0.0	0.7	22.5
Cycle Q Clear(g_c), s	12.9	0.0	47.5	0.0	0.7	22.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	722		1126		32	1266
V/C Ratio(X)	0.82		1.03		0.47	0.69
Avail Cap(c_a), veh/h	1051		1126		113	1351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	15.7	0.0	38.4	7.8
Incr Delay (d2), s/veh	3.5	0.0	33.8	0.0	10.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	25.8	0.0	0.4	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.3	0.0	49.5	0.0	49.0	9.2
LnGrp LOS	C		F		D	A
Approach Vol, veh/h	593	A	1156	A		893
Approach Delay, s/veh	33.3		49.5			9.9
Approach LOS	C		D			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.9	52.0			57.9	21.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.7	49.5			24.5	14.9
Green Ext Time (p_c), s	0.0	0.0			7.3	1.6

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	469	15	1338	255	7	894
Future Volume (veh/h)	469	15	1338	255	7	894
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	479	0	1365	0	7	912
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	613		1185		16	1314
Arrive On Green	0.18	0.00	0.63	0.00	0.01	0.70
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	479	0	1365	0	7	912
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	9.9	0.0	47.5	0.0	0.3	21.2
Cycle Q Clear(g_c), s	9.9	0.0	47.5	0.0	0.3	21.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	613		1185		16	1314
V/C Ratio(X)	0.78		1.15		0.43	0.69
Avail Cap(c_a), veh/h	1106		1185		119	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	13.7	0.0	37.0	6.5
Incr Delay (d2), s/veh	2.2	0.0	78.5	0.0	17.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	39.7	0.0	0.2	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.7	0.0	92.2	0.0	54.3	7.8
LnGrp LOS	C		F		D	A
Approach Vol, veh/h	479	A	1365	A		919
Approach Delay, s/veh	31.7		92.2			8.2
Approach LOS	C		F			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.2	52.0			57.2	17.8
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	49.5			23.2	11.9
Green Ext Time (p_c), s	0.0	0.0			7.9	1.4

Intersection Summary		
HCM 6th Ctrl Delay		53.8
HCM 6th LOS		D

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	571	57	1090	309	12	991
Future Volume (veh/h)	571	57	1090	309	12	991
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	583	0	1112	0	12	1011
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	714		1134		26	1269
Arrive On Green	0.21	0.00	0.61	0.00	0.01	0.68
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	583	0	1112	0	12	1011
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	12.6	0.0	45.2	0.0	0.5	29.6
Cycle Q Clear(g_c), s	12.6	0.0	45.2	0.0	0.5	29.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	714		1134		26	1269
V/C Ratio(X)	0.82		0.98		0.46	0.80
Avail Cap(c_a), veh/h	1060		1136		114	1363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	15.0	0.0	38.2	8.8
Incr Delay (d2), s/veh	3.2	0.0	22.0	0.0	12.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	21.2	0.0	0.3	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	0.0	37.0	0.0	50.3	12.0
LnGrp LOS	C		D		D	B
Approach Vol, veh/h	583	A	1112	A		1023
Approach Delay, s/veh	32.8		37.0			12.4
Approach LOS	C		D			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.6	51.9			57.6	20.7
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.5	47.2			31.6	14.6
Green Ext Time (p_c), s	0.0	0.3			8.7	1.6

Intersection Summary	
HCM 6th Ctrl Delay	26.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	430	48	1035	392	15	1103
Future Volume (veh/h)	430	48	1035	392	15	1103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	443	0	1067	0	15	1137
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	587		1155		32	1310
Arrive On Green	0.17	0.00	0.62	0.00	0.02	0.70
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	443	0	1067	0	15	1137
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	8.5	0.0	35.3	0.0	0.6	32.2
Cycle Q Clear(g_c), s	8.5	0.0	35.3	0.0	0.6	32.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	587		1155		32	1310
V/C Ratio(X)	0.75		0.92		0.47	0.87
Avail Cap(c_a), veh/h	1194		1279		128	1535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	11.8	0.0	33.8	7.9
Incr Delay (d2), s/veh	2.0	0.0	10.6	0.0	10.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	13.5	0.0	0.3	8.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.5	0.0	22.5	0.0	43.9	12.9
LnGrp LOS	C		C		D	B
Approach Vol, veh/h	443	A	1067	A		1152
Approach Delay, s/veh	29.5		22.5			13.3
Approach LOS	C		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.8	47.4			53.2	16.3
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.6	37.3			34.2	10.5
Green Ext Time (p_c), s	0.0	5.6			10.3	1.3

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Analyzed	10:45 - 11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h					0	575		60	0		1121	238	0	15	852	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	605		63	0		1179	250	0	16	896	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					1				1				1			
Pedestrians Crossing, p/h					0				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					668			1429			912	
Entry Volume veh/h					655			1401			894	
Circulating Flow (v_c), pc/h	1517			1179			16			605		
Exiting Flow (v_{ex}), pc/h	266			0			1242			1501		
Capacity (c_{pce}), pc/h					415			1358			745	
Capacity (c), veh/h					406			1331			730	
v/c Ratio (x)					1.61			1.05			1.23	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					310.6			57.3			133.3	
Lane LOS					F			F			F	
95% Queue, veh					37.6			27.7			31.3	
Approach Delay, s/veh				310.6			57.3			133.3		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	136.6						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Analyzed	12:00 - 1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						469		15	0		1338	255	0	7	894	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						488		16	0		1393	265	0	7	930	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					504			1658			937	
Entry Volume veh/h					494			1625			919	
Circulating Flow (v_c), pc/h	1425			1393			7			488		
Exiting Flow (v_{ex}), pc/h	272			0			1409			1418		
Capacity (c_{pce}), pc/h					333			1370			839	
Capacity (c), veh/h					327			1343			822	
v/c Ratio (x)					1.51			1.21			1.12	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					275.4			115.9			89.6	
Lane LOS					F			F			F	
95% Queue, veh					27.6			48.0			25.5	
Approach Delay, s/veh				275.4			115.9			89.6		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	133.9						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Analyzed	1:00 - 2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						571		57	0		1090	309	0	12	991	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						594		59	0		1134	322	0	12	1031	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					653			1456			1043	
Entry Volume veh/h					640			1427			1023	
Circulating Flow (v_c), pc/h	1637			1134			12			594		
Exiting Flow (v_{ex}), pc/h	334			0			1193			1625		
Capacity (c_{pce}), pc/h					434			1363			753	
Capacity (c), veh/h					426			1336			738	
v/c Ratio (x)					1.50			1.07			1.39	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					263.4			62.2			199.5	
Lane LOS					F			F			F	
95% Queue, veh					33.9			29.5			44.2	
Approach Delay, s/veh				263.4			62.2			199.5		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	149.3						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Analyzed	2:00 - 3:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						430		48	0		1035	392	0	15	1103	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						452		50	0		1088	412	0	16	1160	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					502			1500			1176	
Entry Volume veh/h					492			1471			1153	
Circulating Flow (v_c), pc/h	1628			1088			16			452		
Exiting Flow (v_{ex}), pc/h	428			0			1138			1612		
Capacity (c_{pce}), pc/h					455			1358			870	
Capacity (c), veh/h					446			1331			853	
v/c Ratio (x)					1.10			1.11			1.35	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					103.8			75.0			182.3	
Lane LOS					F			F			F	
95% Queue, veh					16.8			33.8			46.7	
Approach Delay, s/veh				103.8			75.0			182.3		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	119.3						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Period	10:45 - 11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	575		60	0		1121	238	0	15	852	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	605		63	0		1179	250	0	16	896	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				354	314			1179	250	429	483	
Entry Volume veh/h				347	308			1156	245	420	474	
Circulating Flow (v_c), pc/h	1517			1179			16			605		
Exiting Flow (v_{ex}), pc/h	16			0			1242			1501		
Capacity (c_{pce}), pc/h				486	486			1358		774	849	
Capacity (c), veh/h				476	476			1331		758	832	
v/c Ratio (x)				0.73	0.65			0.87		0.55	0.57	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				29.0	23.6			21.4	0.0	13.3	12.8	
Lane LOS				D	C			C	A	B	B	
95% Queue, veh				5.9	4.5			12.6		3.5	3.7	
Approach Delay, s/veh				26.4			17.7			13.0		
Approach LOS				D			C			B		
Intersection Delay, s/veh | LOS	18.2						C					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Period	12:00 - 1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	469		15	0		1338	255	0	7	894	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	488		16	0		1393	265	0	7	930	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				267	237			1393	265	440	497	
Entry Volume veh/h				262	232			1366	260	432	487	
Circulating Flow (v_c), pc/h	1425			1393			7			488		
Exiting Flow (v_{ex}), pc/h	7			0			1409			1418		
Capacity (c_{pce}), pc/h				400	400			1370		862	938	
Capacity (c), veh/h				392	392			1343		844	918	
v/c Ratio (x)				0.67	0.59			1.02		0.51	0.53	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				29.2	24.7			46.7	0.0	11.2	10.9	
Lane LOS				D	C			F	A	B	B	
95% Queue, veh				4.7	3.7			24.1		3.0	3.2	
Approach Delay, s/veh				27.1			39.3			11.0		
Approach LOS				D			E			B		
Intersection Delay, s/veh | LOS	28.7						D					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	Existing 2016
Time Period	1:00 - 2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	571		57	0		1090	309	0	12	991	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	594		59	0		1134	322	0	12	1031	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				346	307			1134	322	490	553	
Entry Volume veh/h				339	301			1112	316	481	542	
Circulating Flow (v_c), pc/h	1637			1134			12			594		
Exiting Flow (v_{ex}), pc/h	12			0			1193			1625		
Capacity (c_{pce}), pc/h				506	506			1363		782	857	
Capacity (c), veh/h				496	496			1336		766	839	
v/c Ratio (x)				0.68	0.61			0.83		0.63	0.65	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				25.0	20.8			18.4	0.0	15.4	15.0	
Lane LOS				C	C			C	A	C	B	
95% Queue, veh				5.1	4.0			10.7		4.5	4.8	
Approach Delay, s/veh				23.0			14.4			15.2		
Approach LOS				C			B			C		
Intersection Delay, s/veh | LOS	16.4						C					

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HCS7 Roundabouts Report

General Information		Site Information	
Analyst	KJ	Intersection	US 50 / Pioneer Trail
Agency or Co.	El Dorado County	E/W Street Name	Pioneer Trail
Date Performed	3/16/2017	N/S Street Name	US 50
Analysis Year	Existing 2016	Analysis Time Period (hrs)	0.25
Time Period	2:00 - 3:00 PM Summer Weekend	Peak Hour Factor	0.97
Project Description	US 50 / Pioneer Trail	Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	430		48	0		1035	392	0	15	1103	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	452		50	0		1088	412	0	16	1160	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				266	236			1088	412	553	623	
Entry Volume veh/h				261	231			1067	404	542	611	
Circulating Flow (v_c), pc/h	1628			1088			16			452		
Exiting Flow (v_{ex}), pc/h	16			0			1138			1612		
Capacity (c_{pce}), pc/h				528	528			1358		891	967	
Capacity (c), veh/h				517	517			1331		872	947	
v/c Ratio (x)				0.50	0.45			0.80		0.62	0.65	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				16.3	14.7			16.6	0.0	13.8	13.7	
Lane LOS				C	B			C	A	B	B	
95% Queue, veh				2.8	2.3			9.4		4.4	4.9	
Approach Delay, s/veh				15.6			12.0			13.7		
Approach LOS				C			B			B		
Intersection Delay, s/veh | LOS	13.2						B					

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US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

Construction Year 2019 Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	586	61	1141	243	16	867
Future Volume (veh/h)	586	61	1141	243	16	867
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	604	63	1176	251	16	894
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	535	476	983	1309	33	1114
Arrive On Green	0.30	0.30	0.53	0.53	0.02	0.60
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	604	63	1176	251	16	894
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	26.0	2.5	45.5	2.8	0.8	32.0
Cycle Q Clear(g_c), s	26.0	2.5	45.5	2.8	0.8	32.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	535	476	983	1309	33	1114
V/C Ratio(X)	1.13	0.13	1.20	0.19	0.49	0.80
Avail Cap(c_a), veh/h	535	476	983	1309	103	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	22.1	20.5	1.6	42.1	13.5
Incr Delay (d2), s/veh	79.7	0.1	98.5	0.1	10.7	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	0.9	43.6	2.4	0.4	12.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	110.0	22.2	119.1	1.6	52.8	17.4
LnGrp LOS	F	C	F	A	D	B
Approach Vol, veh/h	667		1427			910
Approach Delay, s/veh	101.7		98.4			18.0
Approach LOS	F		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.1	50.0			56.1	30.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.5			55.0	26.0
Max Q Clear Time (g_c+I1), s	2.8	47.5			34.0	28.0
Green Ext Time (p_c), s	0.0	0.0			6.6	0.0

Intersection Summary		
HCM 6th Ctrl Delay		74.8
HCM 6th LOS		E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	478	15	1362	260	7	910
Future Volume (veh/h)	478	15	1362	260	7	910
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	488	15	1390	265	7	929
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	498	444	1036	1321	16	1151
Arrive On Green	0.28	0.28	0.55	0.55	0.01	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	488	15	1390	265	7	929
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	23.3	0.6	47.5	2.9	0.3	32.6
Cycle Q Clear(g_c), s	23.3	0.6	47.5	2.9	0.3	32.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	498	444	1036	1321	16	1151
V/C Ratio(X)	0.98	0.03	1.34	0.20	0.44	0.81
Avail Cap(c_a), veh/h	498	444	1036	1321	104	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	22.5	19.1	1.4	42.3	12.6
Incr Delay (d2), s/veh	34.8	0.0	160.4	0.1	17.8	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	0.2	63.1	2.3	0.2	12.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.4	22.5	179.5	1.5	60.1	16.4
LnGrp LOS	E	C	F	A	E	B
Approach Vol, veh/h	503		1655			936
Approach Delay, s/veh	64.1		151.0			16.7
Approach LOS	E		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.3	52.0			57.3	28.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	49.5			34.6	25.3
Green Ext Time (p_c), s	0.0	0.0			7.2	0.0

Intersection Summary		
HCM 6th Ctrl Delay		96.3
HCM 6th LOS		F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	581	58	1110	314	12	1009
Future Volume (veh/h)	581	58	1110	314	12	1009
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	593	59	1133	320	12	1030
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	529	470	995	1314	26	1120
Arrive On Green	0.30	0.30	0.53	0.53	0.01	0.60
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	593	59	1133	320	12	1030
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	25.6	2.3	45.9	3.7	0.6	42.4
Cycle Q Clear(g_c), s	25.6	2.3	45.9	3.7	0.6	42.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	529	470	995	1314	26	1120
V/C Ratio(X)	1.12	0.13	1.14	0.24	0.47	0.92
Avail Cap(c_a), veh/h	529	470	995	1314	103	1201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	22.1	20.2	1.6	42.2	15.4
Incr Delay (d2), s/veh	77.0	0.1	74.6	0.1	12.5	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	0.8	37.4	3.2	0.3	17.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	107.3	22.3	94.8	1.7	54.6	26.4
LnGrp LOS	F	C	F	A	D	C
Approach Vol, veh/h	652		1453			1042
Approach Delay, s/veh	99.6		74.3			26.7
Approach LOS	F		E			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	50.4			56.1	30.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	2.6	47.9			44.4	27.6
Green Ext Time (p_c), s	0.0	0.0			5.7	0.0

Intersection Summary		
HCM 6th Ctrl Delay		63.8
HCM 6th LOS		E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	438	49	1053	399	16	1123
Future Volume (veh/h)	438	49	1053	399	16	1123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	51	1086	411	16	1158
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	487	433	1040	1315	33	1169
Arrive On Green	0.27	0.27	0.56	0.56	0.02	0.63
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	452	51	1086	411	16	1158
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	21.9	2.1	49.3	5.3	0.8	54.0
Cycle Q Clear(g_c), s	21.9	2.1	49.3	5.3	0.8	54.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	487	433	1040	1315	33	1169
V/C Ratio(X)	0.93	0.12	1.04	0.31	0.49	0.99
Avail Cap(c_a), veh/h	514	458	1040	1315	100	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	24.2	19.7	1.7	43.1	16.4
Incr Delay (d2), s/veh	22.7	0.1	40.2	0.1	10.9	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.8	29.4	4.3	0.4	25.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.1	24.3	59.9	1.9	54.0	40.3
LnGrp LOS	D	C	F	A	D	D
Approach Vol, veh/h	503		1497			1174
Approach Delay, s/veh	51.0		44.0			40.5
Approach LOS	D		D			D

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.1	53.8			59.9	28.7
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	2.8	51.3			56.0	23.9
Green Ext Time (p_c), s	0.0	0.0			0.0	0.3

Intersection Summary			
HCM 6th Ctrl Delay		43.8	
HCM 6th LOS		D	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	586	61	1141	243	16	867
Future Volume (veh/h)	586	61	1141	243	16	867
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	604	0	1176	0	16	894
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	732		1121		33	1262
Arrive On Green	0.21	0.00	0.60	0.00	0.02	0.67
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	604	0	1176	0	16	894
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	13.2	0.0	47.5	0.0	0.7	23.6
Cycle Q Clear(g_c), s	13.2	0.0	47.5	0.0	0.7	23.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	732		1121		33	1262
V/C Ratio(X)	0.82		1.05		0.48	0.71
Avail Cap(c_a), veh/h	1046		1121		112	1345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	15.9	0.0	38.5	8.0
Incr Delay (d2), s/veh	3.7	0.0	40.8	0.0	10.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	28.1	0.0	0.4	7.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.6	0.0	56.7	0.0	48.8	9.7
LnGrp LOS	C		F		D	A
Approach Vol, veh/h	604	A	1176	A		910
Approach Delay, s/veh	33.6		56.7			10.4
Approach LOS	C		E			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.0	52.0			58.0	21.3
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.7	49.5			25.6	15.2
Green Ext Time (p_c), s	0.0	0.0			7.5	1.6

Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	478	15	1362	260	7	910
Future Volume (veh/h)	478	15	1362	260	7	910
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	488	0	1390	0	7	929
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	622		1181		16	1310
Arrive On Green	0.18	0.00	0.63	0.00	0.01	0.70
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	488	0	1390	0	7	929
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	10.1	0.0	47.5	0.0	0.3	22.3
Cycle Q Clear(g_c), s	10.1	0.0	47.5	0.0	0.3	22.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	622		1181		16	1310
V/C Ratio(X)	0.78		1.18		0.43	0.71
Avail Cap(c_a), veh/h	1102		1181		118	1417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	13.9	0.0	37.1	6.7
Incr Delay (d2), s/veh	2.2	0.0	88.7	0.0	17.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	43.1	0.0	0.2	5.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.7	0.0	102.6	0.0	54.4	8.2
LnGrp LOS	C		F		D	A
Approach Vol, veh/h	488	A	1390	A		936
Approach Delay, s/veh	31.7		102.6			8.6
Approach LOS	C		F			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.2	52.0			57.2	18.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	49.5			24.3	12.1
Green Ext Time (p_c), s	0.0	0.0			8.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	59.0
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	581	58	1110	314	12	1009
Future Volume (veh/h)	581	58	1110	314	12	1009
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	593	0	1133	0	12	1030
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	723		1130		26	1265
Arrive On Green	0.21	0.00	0.60	0.00	0.01	0.68
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	593	0	1133	0	12	1030
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	12.9	0.0	47.5	0.0	0.5	31.2
Cycle Q Clear(g_c), s	12.9	0.0	47.5	0.0	0.5	31.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	723		1130		26	1265
V/C Ratio(X)	0.82		1.00		0.46	0.81
Avail Cap(c_a), veh/h	1055		1130		113	1357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	15.5	0.0	38.4	9.2
Incr Delay (d2), s/veh	3.4	0.0	27.3	0.0	12.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	23.7	0.0	0.3	9.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.1	0.0	42.9	0.0	50.5	12.9
LnGrp LOS	C		F		D	B
Approach Vol, veh/h	593	A	1133	A		1042
Approach Delay, s/veh	33.1		42.9			13.3
Approach LOS	C		D			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	52.0			57.7	20.9
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.5	49.5			33.2	14.9
Green Ext Time (p_c), s	0.0	0.0			8.8	1.6

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	438	49	1053	399	16	1123
Future Volume (veh/h)	438	49	1053	399	16	1123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	0	1086	0	16	1158
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	592		1160		34	1314
Arrive On Green	0.17	0.00	0.62	0.00	0.02	0.70
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	452	0	1086	0	16	1158
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	8.9	0.0	37.5	0.0	0.6	34.5
Cycle Q Clear(g_c), s	8.9	0.0	37.5	0.0	0.6	34.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	592		1160		34	1314
V/C Ratio(X)	0.76		0.94		0.47	0.88
Avail Cap(c_a), veh/h	1162		1244		125	1493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	12.3	0.0	34.7	8.3
Incr Delay (d2), s/veh	2.1	0.0	12.6	0.0	9.8	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	14.9	0.0	0.4	10.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	0.0	24.9	0.0	44.5	14.2
LnGrp LOS	C		C		D	B
Approach Vol, veh/h	452	A	1086	A		1174
Approach Delay, s/veh	30.3		24.9			14.6
Approach LOS	C		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.9	48.8			54.7	16.7
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.6	39.5			36.5	10.9
Green Ext Time (p_c), s	0.0	4.8			10.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Analyzed	10:45-11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						586		61	0		1141	243	0	16	867	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						616		64	0		1200	256	0	17	912	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					680			1456			929	
Entry Volume veh/h					667			1427			911	
Circulating Flow (v_c), pc/h	1545			1200			17			616		
Exiting Flow (v_{ex}), pc/h	273			0			1264			1528		
Capacity (c_{pce}), pc/h					406			1356			736	
Capacity (c), veh/h					398			1329			722	
v/c Ratio (x)					1.68			1.07			1.26	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					339.1			64.1			148.4	
Lane LOS					F			F			F	
95% Queue, veh					39.9			30.1			33.8	
Approach Delay, s/veh				339.1			64.1			148.4		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	150.7						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Analyzed	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					515			1689			954	
Entry Volume veh/h					505			1656			935	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	278			0			1435			1445		
Capacity (c_{pce}), pc/h					325			1370			830	
Capacity (c), veh/h					319			1343			814	
v/c Ratio (x)					1.59			1.23			1.15	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					307.3			125.2			101.4	
Lane LOS					F			F			F	
95% Queue, veh					29.7			51.2			27.8	
Approach Delay, s/veh				307.3			125.2			101.4		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	147.7						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Analyzed	1:00-2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						581		58	0		1110	314	0	12	1009	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						605		60	0		1155	327	0	12	1050	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					665			1482			1062	
Entry Volume veh/h					652			1453			1041	
Circulating Flow (v_c), pc/h	1667			1155			12			605		
Exiting Flow (v_{ex}), pc/h	339			0			1215			1655		
Capacity (c_{pce}), pc/h					425			1363			745	
Capacity (c), veh/h					417			1336			730	
v/c Ratio (x)					1.57			1.09			1.43	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					290.0			68.7			217.3	
Lane LOS					F			F			F	
95% Queue, veh					36.2			31.8			47.2	
Approach Delay, s/veh				290.0			68.7			217.3		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	163.7						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Analyzed	2:00-3:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						438		49	0		1053	399	0	16	1123	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						461		52	0		1107	420	0	17	1181	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					513			1527			1198	
Entry Volume veh/h					503			1497			1175	
Circulating Flow (v_c), pc/h	1659			1107			17			461		
Exiting Flow (v_{ex}), pc/h	437			0			1159			1642		
Capacity (c_{pce}), pc/h					446			1356			862	
Capacity (c), veh/h					437			1329			845	
v/c Ratio (x)					1.15			1.13			1.39	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					120.4			82.8			198.7	
Lane LOS					F			F			F	
95% Queue, veh					18.4			36.4			50.0	
Approach Delay, s/veh				120.4			82.8			198.7		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	131.6						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	10:45-11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	586		61	0		1141	243	0	16	867	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	616		64	0		1200	256	0	17	912	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				360	320			1200	256	437	492	
Entry Volume veh/h				353	313			1176	251	428	483	
Circulating Flow (v_c), pc/h	1545			1200			17			616		
Exiting Flow (v_{ex}), pc/h	17			0			1264			1528		
Capacity (c_{pce}), pc/h				476	476			1356		766	841	
Capacity (c), veh/h				467	467			1329		750	824	
v/c Ratio (x)				0.76	0.67			0.89		0.57	0.59	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				31.7	25.4			23.1	0.0	13.8	13.3	
Lane LOS				D	D			C	A	B	B	
95% Queue, veh				6.4	4.9			13.5		3.7	3.9	
Approach Delay, s/veh				28.7			19.0			13.5		
Approach LOS				D			C			B		
Intersection Delay, s/veh | LOS	19.5						C					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				273	242			1418	271	448	506	
Entry Volume veh/h				268	237			1390	266	440	496	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	7			0			1435			1445		
Capacity (c_{pce}), pc/h				391	391			1370		854	930	
Capacity (c), veh/h				383	383			1343		836	911	
v/c Ratio (x)				0.70	0.62			1.04		0.53	0.54	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				32.0	26.6			51.8	0.0	11.6	11.3	
Lane LOS				D	D			F	A	B	B	
95% Queue, veh				5.1	4.0			26.0		3.1	3.4	
Approach Delay, s/veh				29.5			43.5			11.4		
Approach LOS				D			E			B		
Intersection Delay, s/veh | LOS	31.5						D					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	1:00-2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	581		58	0		1110	314	0	12	1009	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	605		60	0		1155	327	0	12	1050	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				352	313			1155	327	499	563	
Entry Volume veh/h				346	306			1132	321	489	552	
Circulating Flow (v_c), pc/h	1667			1155			12			605		
Exiting Flow (v_{ex}), pc/h	12			0			1215			1655		
Capacity (c_{pce}), pc/h				496	496			1363		774	849	
Capacity (c), veh/h				487	487			1336		758	832	
v/c Ratio (x)				0.71	0.63			0.85		0.65	0.66	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				27.1	22.3			19.6	0.0	16.2	15.8	
Lane LOS				D	C			C	A	C	C	
95% Queue, veh				5.6	4.3			11.5		4.8	5.2	
Approach Delay, s/veh				24.8			15.3			16.0		
Approach LOS				C			C			C		
Intersection Delay, s/veh | LOS	17.5						C					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	2:00-3:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	438		49	0		1053	399	0	16	1123	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	461		52	0		1107	420	0	17	1181	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				272	241			1107	420	563	635	
Entry Volume veh/h				267	236			1085	412	552	622	
Circulating Flow (v_c), pc/h	1659			1107			17			461		
Exiting Flow (v_{ex}), pc/h	17			0			1159			1642		
Capacity (c_{pce}), pc/h				519	519			1356		883	960	
Capacity (c), veh/h				508	508			1329		865	940	
v/c Ratio (x)				0.52	0.46			0.82		0.64	0.66	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				17.2	15.4			17.5	0.0	14.4	14.3	
Lane LOS				C	C			C	A	B	B	
95% Queue, veh				3.0	2.4			10.0		4.7	5.2	
Approach Delay, s/veh				16.4			12.7			14.4		
Approach LOS				C			B			B		
Intersection Delay, s/veh | LOS	13.9						B					

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US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

Design Year 2039 Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	660	70	1280	280	20	970
Future Volume (veh/h)	660	70	1280	280	20	970
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	680	72	1320	289	21	1000
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	532	474	978	1303	41	1118
Arrive On Green	0.30	0.30	0.52	0.52	0.02	0.60
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	680	72	1320	289	21	1000
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	26.0	2.9	45.5	3.5	1.0	40.2
Cycle Q Clear(g_c), s	26.0	2.9	45.5	3.5	1.0	40.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	532	474	978	1303	41	1118
V/C Ratio(X)	1.28	0.15	1.35	0.22	0.52	0.89
Avail Cap(c_a), veh/h	532	474	978	1303	102	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	22.4	20.7	1.7	42.0	15.1
Incr Delay (d2), s/veh	138.8	0.1	164.0	0.1	9.7	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.8	1.0	61.4	2.9	0.5	16.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	169.3	22.5	184.7	1.8	51.7	23.9
LnGrp LOS	F	C	F	A	D	C
Approach Vol, veh/h	752		1609			1021
Approach Delay, s/veh	155.2		151.9			24.4
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.5	50.0			56.5	30.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.5			55.0	26.0
Max Q Clear Time (g_c+I1), s	3.0	47.5			42.2	28.0
Green Ext Time (p_c), s	0.0	0.0			6.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		114.1
HCM 6th LOS		F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	540	20	1530	290	10	1020
Future Volume (veh/h)	540	20	1530	290	10	1020
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	551	20	1561	296	10	1041
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	497	442	1032	1317	22	1153
Arrive On Green	0.28	0.28	0.55	0.55	0.01	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	551	20	1561	296	10	1041
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	24.0	0.8	47.5	3.3	0.5	41.4
Cycle Q Clear(g_c), s	24.0	0.8	47.5	3.3	0.5	41.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	497	442	1032	1317	22	1153
V/C Ratio(X)	1.11	0.05	1.51	0.22	0.45	0.90
Avail Cap(c_a), veh/h	497	442	1032	1317	103	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	22.7	19.3	1.5	42.2	14.3
Incr Delay (d2), s/veh	73.7	0.0	235.5	0.1	13.9	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	0.3	84.5	2.7	0.3	16.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	104.7	22.7	254.8	1.6	56.1	23.3
LnGrp LOS	F	C	F	A	E	C
Approach Vol, veh/h	571		1857			1051
Approach Delay, s/veh	101.9		214.4			23.6
Approach LOS	F		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.6	52.0			57.6	28.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.5	49.5			43.4	26.0
Green Ext Time (p_c), s	0.0	0.0			6.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	138.3
HCM 6th LOS	F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	660	70	1240	360	10	1130
Future Volume (veh/h)	660	70	1240	360	10	1130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	673	71	1265	367	10	1153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	507	451	1035	1328	22	1151
Arrive On Green	0.28	0.28	0.55	0.55	0.01	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	673	71	1265	367	10	1153
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	25.6	3.0	49.8	4.4	0.5	55.4
Cycle Q Clear(g_c), s	25.6	3.0	49.8	4.4	0.5	55.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	507	451	1035	1328	22	1151
V/C Ratio(X)	1.33	0.16	1.22	0.28	0.46	1.00
Avail Cap(c_a), veh/h	507	451	1035	1328	99	1151
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	24.1	20.1	1.5	44.1	17.3
Incr Delay (d2), s/veh	160.9	0.2	108.9	0.1	14.1	26.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.9	1.1	49.5	3.8	0.3	27.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	193.1	24.3	129.0	1.7	58.3	44.2
LnGrp LOS	F	C	F	A	E	F
Approach Vol, veh/h	744		1632			1163
Approach Delay, s/veh	177.0		100.4			44.3
Approach LOS	F		F			D

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.6	54.3			59.9	30.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	2.5	51.8			57.4	27.6
Green Ext Time (p_c), s	0.0	0.0			0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		98.0
HCM 6th LOS		F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	490	60	1180	450	20	1250
Future Volume (veh/h)	490	60	1180	450	20	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	505	62	1216	464	21	1289
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	507	451	1015	1311	40	1151
Arrive On Green	0.28	0.28	0.54	0.54	0.02	0.62
Sat Flow, veh/h	1781	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	505	62	1216	464	21	1289
Grp Sat Flow(s),veh/h/ln	1781	1585	1870	1585	1781	1870
Q Serve(g_s), s	25.5	2.6	48.9	6.4	1.0	55.4
Cycle Q Clear(g_c), s	25.5	2.6	48.9	6.4	1.0	55.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	507	451	1015	1311	40	1151
V/C Ratio(X)	1.00	0.14	1.20	0.35	0.52	1.12
Avail Cap(c_a), veh/h	507	451	1015	1311	99	1151
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	24.0	20.6	1.9	43.5	17.3
Incr Delay (d2), s/veh	39.1	0.1	98.6	0.2	9.9	65.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	1.0	45.8	5.4	0.6	39.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.2	24.1	119.2	2.1	53.4	83.1
LnGrp LOS	E	C	F	A	D	F
Approach Vol, veh/h	567		1680			1310
Approach Delay, s/veh	66.1		86.8			82.6
Approach LOS	E		F			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.5	53.4			59.9	30.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	45.9			55.4	25.6
Max Q Clear Time (g_c+I1), s	3.0	50.9			57.4	27.5
Green Ext Time (p_c), s	0.0	0.0			0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay	82.0	
HCM 6th LOS	F	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	660	70	1280	280	20	970
Future Volume (veh/h)	660	70	1280	280	20	970
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	680	0	1320	0	21	1000
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	799		1086		41	1232
Arrive On Green	0.23	0.00	0.58	0.00	0.02	0.66
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	680	0	1320	0	21	1000
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	15.4	0.0	47.5	0.0	1.0	32.1
Cycle Q Clear(g_c), s	15.4	0.0	47.5	0.0	1.0	32.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	799		1086		41	1232
V/C Ratio(X)	0.85		1.22		0.51	0.81
Avail Cap(c_a), veh/h	1014		1086		109	1303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	17.2	0.0	39.5	10.2
Incr Delay (d2), s/veh	5.7	0.0	105.7	0.0	9.3	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	47.9	0.0	0.5	10.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.8	0.0	122.9	0.0	48.8	14.1
LnGrp LOS	D		F		D	B
Approach Vol, veh/h	680	A	1320	A		1021
Approach Delay, s/veh	35.8		122.9			14.8
Approach LOS	D		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	52.0			58.4	23.4
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	3.0	49.5			34.1	17.4
Green Ext Time (p_c), s	0.0	0.0			8.2	1.5

Intersection Summary		
HCM 6th Ctrl Delay		66.7
HCM 6th LOS		E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	540	20	1530	290	10	1020
Future Volume (veh/h)	540	20	1530	290	10	1020
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	551	0	1561	0	10	1041
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	683		1150		22	1283
Arrive On Green	0.20	0.00	0.61	0.00	0.01	0.69
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	551	0	1561	0	10	1041
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	11.8	0.0	47.5	0.0	0.4	30.5
Cycle Q Clear(g_c), s	11.8	0.0	47.5	0.0	0.4	30.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	683		1150		22	1283
V/C Ratio(X)	0.81		1.36		0.45	0.81
Avail Cap(c_a), veh/h	1074		1150		115	1380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	14.9	0.0	37.9	8.6
Incr Delay (d2), s/veh	2.5	0.0	166.4	0.0	13.5	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	67.9	0.0	0.3	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.1	0.0	181.3	0.0	51.4	12.2
LnGrp LOS	C		F		D	B
Approach Vol, veh/h	551	A	1561	A		1051
Approach Delay, s/veh	32.1		181.3			12.5
Approach LOS	C		F			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.5	52.0			57.5	19.8
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.4	49.5			32.5	13.8
Green Ext Time (p_c), s	0.0	0.0			9.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	99.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	660	70	1240	360	10	1130
Future Volume (veh/h)	660	70	1240	360	10	1130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	673	0	1265	0	10	1153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	796		1103		22	1231
Arrive On Green	0.23	0.00	0.59	0.00	0.01	0.66
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	673	0	1265	0	10	1153
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	15.0	0.0	47.5	0.0	0.4	44.3
Cycle Q Clear(g_c), s	15.0	0.0	47.5	0.0	0.4	44.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	796		1103		22	1231
V/C Ratio(X)	0.85		1.15		0.45	0.94
Avail Cap(c_a), veh/h	1030		1103		111	1323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	16.5	0.0	39.5	12.3
Incr Delay (d2), s/veh	5.3	0.0	77.1	0.0	13.7	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	39.4	0.0	0.3	17.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.9	0.0	93.6	0.0	53.2	24.4
LnGrp LOS	C		F		D	C
Approach Vol, veh/h	673	A	1265	A		1163
Approach Delay, s/veh	34.9		93.6			24.7
Approach LOS	C		F			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.5	52.0			57.5	23.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.4	49.5			46.3	17.0
Green Ext Time (p_c), s	0.0	0.0			6.5	1.6

Intersection Summary		
HCM 6th Ctrl Delay		55.0
HCM 6th LOS		E

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	490	60	1180	450	20	1250
Future Volume (veh/h)	490	60	1180	450	20	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	505	0	1216	0	21	1289
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	630		1170		42	1319
Arrive On Green	0.18	0.00	0.63	0.00	0.02	0.71
Sat Flow, veh/h	3456	1585	1870	1585	1781	1870
Grp Volume(v), veh/h	505	0	1216	0	21	1289
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1781	1870
Q Serve(g_s), s	11.2	0.0	50.1	0.0	0.9	52.4
Cycle Q Clear(g_c), s	11.2	0.0	50.1	0.0	0.9	52.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	630		1170		42	1319
V/C Ratio(X)	0.80		1.04		0.51	0.98
Avail Cap(c_a), veh/h	1035		1170		111	1331
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	15.0	0.0	38.7	11.2
Incr Delay (d2), s/veh	2.4	0.0	37.0	0.0	9.2	19.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	27.6	0.0	0.5	20.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.8	0.0	52.0	0.0	47.9	30.5
LnGrp LOS	C		F		D	C
Approach Vol, veh/h	505	A	1216	A		1310
Approach Delay, s/veh	33.8		52.0			30.8
Approach LOS	C		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	54.6			61.0	19.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.9	52.1			54.4	13.2
Green Ext Time (p_c), s	0.0	0.0			2.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	660	70	1280	280	20	970
Future Volume (veh/h)	660	70	1280	280	20	970
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	680	0	1320	0	21	1000
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	851		1840		43	1146
Arrive On Green	0.25	0.00	0.52	0.00	0.02	0.61
Sat Flow, veh/h	3456	1585	3647	1585	1781	1870
Grp Volume(v), veh/h	680	0	1320	0	21	1000
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1870
Q Serve(g_s), s	11.8	0.0	18.2	0.0	0.7	28.4
Cycle Q Clear(g_c), s	11.8	0.0	18.2	0.0	0.7	28.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	851		1840		43	1146
V/C Ratio(X)	0.80		0.72		0.48	0.87
Avail Cap(c_a), veh/h	1299		2644		139	1670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	11.8	0.0	30.8	10.3
Incr Delay (d2), s/veh	2.1	0.0	0.5	0.0	8.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	5.6	0.0	0.4	8.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.7	0.0	12.3	0.0	38.9	14.0
LnGrp LOS	C		B		D	B
Approach Vol, veh/h	680	A	1320	A		1021
Approach Delay, s/veh	24.7		12.3			14.5
Approach LOS	C		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.1	37.6			43.6	20.2
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.7	20.2			30.4	13.8
Green Ext Time (p_c), s	0.0	10.9			8.7	1.9

Intersection Summary		
HCM 6th Ctrl Delay		15.9
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	540	20	1530	290	10	1020
Future Volume (veh/h)	540	20	1530	290	10	1020
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	551	0	1561	0	10	1041
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	717		2021		23	1219
Arrive On Green	0.21	0.00	0.57	0.00	0.01	0.65
Sat Flow, veh/h	3456	1585	3647	1585	1781	1870
Grp Volume(v), veh/h	551	0	1561	0	10	1041
Grp Sat Flow(s),veh/h/ln	1728	1585	1777	1585	1781	1870
Q Serve(g_s), s	9.6	0.0	21.6	0.0	0.4	27.9
Cycle Q Clear(g_c), s	9.6	0.0	21.6	0.0	0.4	27.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	717		2021		23	1219
V/C Ratio(X)	0.77		0.77		0.44	0.85
Avail Cap(c_a), veh/h	1297		2641		139	1668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	10.6	0.0	31.3	8.7
Incr Delay (d2), s/veh	1.8	0.0	1.1	0.0	12.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	6.3	0.0	0.2	7.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.7	0.0	11.7	0.0	44.2	12.1
LnGrp LOS	C		B		D	B
Approach Vol, veh/h	551	A	1561	A		1051
Approach Delay, s/veh	25.7		11.7			12.4
Approach LOS	C		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.3	40.8			46.2	17.8
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	47.5			57.0	24.0
Max Q Clear Time (g_c+I1), s	2.4	23.6			29.9	11.6
Green Ext Time (p_c), s	0.0	12.7			9.4	1.7

Intersection Summary	
HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Analyzed	10:45-11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						660		70	0		1280	280	0	20	970	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						694		74	0		1346	294	0	21	1020	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					768			1640			1041	
Entry Volume veh/h					753			1608			1021	
Circulating Flow (v_c), pc/h	1735			1346			21			694		
Exiting Flow (v_{ex}), pc/h	315			0			1420			1714		
Capacity (c_{pce}), pc/h					350			1351			680	
Capacity (c), veh/h					343			1324			666	
v/c Ratio (x)					2.20			1.21			1.53	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					572.6			117.7			264.2	
Lane LOS					F			F			F	
95% Queue, veh					56.3			48.0			51.7	
Approach Delay, s/veh				572.6			117.7			264.2		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	263.2						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Analyzed	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						540		20	0		1530	290	0	10	1020	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						562		21	0		1592	302	0	10	1062	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					583			1894			1072	
Entry Volume veh/h					572			1857			1051	
Circulating Flow (v_c), pc/h	1634			1592			10			562		
Exiting Flow (v_{ex}), pc/h	312			0			1613			1624		
Capacity (c_{pce}), pc/h					272			1366			778	
Capacity (c), veh/h					267			1339			762	
v/c Ratio (x)					2.14			1.39			1.38	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					557.0			191.0			195.8	
Lane LOS					F			F			F	
95% Queue, veh					43.1			74.1			44.9	
Approach Delay, s/veh				557.0			191.0			195.8		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	252.5						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Analyzed	1:00-2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						660		70	0		1240	360	0	10	1130	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						687		73	0		1291	375	0	10	1176	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					760			1666			1186	
Entry Volume veh/h					745			1633			1163	
Circulating Flow (v_c), pc/h	1873			1291			10			687		
Exiting Flow (v_{ex}), pc/h	385			0			1364			1863		
Capacity (c_{pce}), pc/h					370			1366			685	
Capacity (c), veh/h					363			1339			671	
v/c Ratio (x)					2.06			1.22			1.73	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					508.3			119.8			352.2	
Lane LOS					F			F			F	
95% Queue, veh					53.1			49.2			67.9	
Approach Delay, s/veh				508.3			119.8			352.2		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	277.9						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Analyzed	2:00-3:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						490		60	0		1180	450	0	20	1250	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						515		63	0		1241	473	0	21	1314	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					578			1714			1335	
Entry Volume veh/h					567			1680			1309	
Circulating Flow (v_c), pc/h	1850			1241			21			515		
Exiting Flow (v_{ex}), pc/h	494			0			1304			1829		
Capacity (c_{pce}), pc/h					389			1351			816	
Capacity (c), veh/h					382			1324			800	
v/c Ratio (x)					1.49			1.27			1.64	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					258.6			140.6			307.0	
Lane LOS					F			F			F	
95% Queue, veh					30.2			55.8			70.6	
Approach Delay, s/veh				258.6			140.6			307.0		
Approach LOS				F			F			F		
Intersection Delay, s/veh | LOS	220.6						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Period	10:45-11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	660		70	0		1280	280	0	20	970	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	694		74	0		1346	294	0	21	1020	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				407	361			1346	294	489	552	
Entry Volume veh/h				399	354			1320	288	480	541	
Circulating Flow (v_c), pc/h	1735			1346			21			694		
Exiting Flow (v_{ex}), pc/h	21			0			1420			1714		
Capacity (c_{pce}), pc/h				417	417			1351		713	787	
Capacity (c), veh/h				409	409			1324		698	771	
v/c Ratio (x)				0.98	0.87			1.00		0.69	0.70	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				70.6	48.7			41.9	0.0	19.1	18.4	
Lane LOS				F	E			E	A	C	C	
95% Queue, veh				11.6	8.6			22.0		5.5	5.9	
Approach Delay, s/veh				60.3			34.4			18.7		
Approach LOS				F			D			C		
Intersection Delay, s/veh | LOS	35.4						E					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	540		20	0		1530	290	0	10	1020	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	562		21	0		1592	302	0	10	1062	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				309	274			1592	302	504	568	
Entry Volume veh/h				303	269			1561	296	494	557	
Circulating Flow (v_c), pc/h	1634			1592			10			562		
Exiting Flow (v_{ex}), pc/h	10			0			1613			1624		
Capacity (c_{pce}), pc/h				334	334			1366		805	881	
Capacity (c), veh/h				327	327			1339		788	862	
v/c Ratio (x)				0.93	0.82			1.17		0.63	0.65	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				68.8	50.4			97.9	0.0	15.0	14.7	
Lane LOS				F	F			F	A	C	B	
95% Queue, veh				9.3	7.0			41.8		4.5	4.9	
Approach Delay, s/veh				60.1			82.3			14.9		
Approach LOS				F			F			B		
Intersection Delay, s/veh | LOS	58.3						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Period	1:00-2:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	660		70	0		1240	360	0	10	1130	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	687		73	0		1291	375	0	10	1176	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				403	357			1291	375	557	629	
Entry Volume veh/h				395	350			1266	368	546	616	
Circulating Flow (v_c), pc/h	1873			1291			10			687		
Exiting Flow (v_{ex}), pc/h	10			0			1364			1863		
Capacity (c_{pce}), pc/h				439	439			1366		718	792	
Capacity (c), veh/h				430	430			1339		703	776	
v/c Ratio (x)				0.92	0.81			0.95		0.78	0.79	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				56.2	40.1			31.1	0.0	24.5	24.0	
Lane LOS				F	E			D	A	C	C	
95% Queue, veh				10.2	7.5			17.7		7.6	8.2	
Approach Delay, s/veh				48.6			24.1			24.2		
Approach LOS				E			C			C		
Intersection Delay, s/veh | LOS	29.3						D					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year
Time Period	2:00-3:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				T		LT		T	
Volume (V), veh/h					0	490		60	0		1180	450	0	20	1250	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	515		63	0		1241	473	0	21	1314	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				306	272			1241	473	627	708	
Entry Volume veh/h				300	266			1217	464	615	694	
Circulating Flow (v_c), pc/h	1850			1241			21			515		
Exiting Flow (v_{ex}), pc/h	21			0			1304			1829		
Capacity (c_{pce}), pc/h				459	459			1351		841	917	
Capacity (c), veh/h				450	450			1324		823	898	
v/c Ratio (x)				0.67	0.59			0.92		0.75	0.77	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				26.0	21.9			27.3	0.0	19.8	20.1	
Lane LOS				D	C			D	A	C	C	
95% Queue, veh				4.8	3.7			15.7		7.0	7.8	
Approach Delay, s/veh				24.1			19.7			20.0		
Approach LOS				C			C			C		
Intersection Delay, s/veh | LOS	20.5						C					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year with Mitigation
Time Analyzed	10:45-11:45 AM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		T		LT		T	
Volume (V), veh/h					0	660		70	0		1280	280	0	20	970	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	694		74	0		1346	294	0	21	1020	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					2				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.6453	4.3276		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.6667	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				407	361		633	713	294	489	552	
Entry Volume veh/h				399	354		620	699	288	480	541	
Circulating Flow (v_c), pc/h	1735			1346			21			694		
Exiting Flow (v_{ex}), pc/h	21			0			1420			1714		
Capacity (c_{pce}), pc/h				391	452		1393	1393		713	787	
Capacity (c), veh/h				384	443		1363	1363		698	771	
v/c Ratio (x)				1.04	0.80		0.46	0.51		0.69	0.70	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				90.3	37.2		7.1	8.0	-1.0	19.1	18.4	
Lane LOS				F	E		A	A	A	C	C	
95% Queue, veh				13.2	7.2		2.4	3.1		5.5	5.9	
Approach Delay, s/veh				65.4			6.2			18.7		
Approach LOS				F			A			C		
Intersection Delay, s/veh | LOS	23.2						C					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2039 Design Year with Mitigation
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		T		LT		T	
Volume (V), veh/h					0	540		20	0		1530	290	0	10	1020	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	562		21	0		1592	302	0	10	1062	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes					2				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.6453	4.3276		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.6667	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				309	274		748	844	302	504	568	
Entry Volume veh/h				303	269		734	827	296	494	557	
Circulating Flow (v_c), pc/h	1634			1592			10			562		
Exiting Flow (v_{ex}), pc/h	10			0			1613			1624		
Capacity (c_{pce}), pc/h				312	367		1407	1407		805	881	
Capacity (c), veh/h				306	360		1376	1376		788	862	
v/c Ratio (x)				0.99	0.75		0.53	0.60		0.63	0.65	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				86.9	38.1		8.2	9.5	0.0	15.0	14.7	
Lane LOS				F	E		A	A	A	C	B	
95% Queue, veh				10.5	5.8		3.3	4.3		4.5	4.9	
Approach Delay, s/veh				64.0			7.5			14.9		
Approach LOS				F			A			B		
Intersection Delay, s/veh | LOS	19.0						C					

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US 50 / Pioneer Trail Intersection Improvements Project

Technical Appendix

Analysis of Lane Configurations for Roundabout Option

HCS7 Roundabouts Report

General Information		Site Information	
Analyst	KJ	Intersection	US 50 / Pioneer Trail
Agency or Co.	El Dorado County	E/W Street Name	Pioneer Trail
Date Performed	3/16/2017	N/S Street Name	US 50
Analysis Year	2019 Construction Year	Analysis Time Period (hrs)	0.25
Time Period	12:00-1:00 PM Summer Weekend	Peak Hour Factor	0.98
Project Description	US 50 / Pioneer Trail	Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Lane Assignment							LR				TR				LT	
Volume (V), veh/h						478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes									1				1			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763			4.9763	
Follow-Up Headway (s)					2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					515			1418	271		954	
Entry Volume veh/h					505			1390	266		935	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	7			0			1435			1445		
Capacity (c_{pce}), pc/h					325			1370			830	
Capacity (c), veh/h					319			1343			814	
v/c Ratio (x)					1.59			1.04			1.15	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					307.3			51.8	0.0		101.4	
Lane LOS					F			F	A		F	
95% Queue, veh					29.7			26.0			27.8	
Approach Delay, s/veh				307.3			43.5			101.4		
Approach LOS				F			E			F		
Intersection Delay, s/veh | LOS	104.0						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	0
Lane Assignment					L		LR		T		TR		LT		T	
Volume (V), veh/h					0	478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436		4.5436	4.5436		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352		2.5352	2.5352		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				273	242		794	895		448	506	
Entry Volume veh/h				268	237		778	878		440	496	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	278			0			1435			1445		
Capacity (c_{pce}), pc/h				391	391		1411	1411		854	930	
Capacity (c), veh/h				383	383		1380	1380		836	911	
v/c Ratio (x)				0.70	0.62		0.56	0.64		0.53	0.54	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				32.0	26.6		8.7	10.2		11.6	11.3	
Lane LOS				D	D		A	B		B	B	
95% Queue, veh				5.1	4.0		3.7	4.9		3.1	3.4	
Approach Delay, s/veh				29.5			9.5			11.4		
Approach LOS				D			A			B		
Intersection Delay, s/veh | LOS	13.4						B					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0
Lane Assignment					L		LR				TR		LT		T	
Volume (V), veh/h					0	478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %					2	2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h					0	498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes					1				1				2			
Pedestrians Crossing, p/h					2				2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)				4.5436	4.5436			4.9763		4.6453	4.3276	
Follow-Up Headway (s)				2.5352	2.5352			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h				273	242			1689		448	506	
Entry Volume veh/h				268	237			1656		440	496	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	278			0			1435			1445		
Capacity (c_{pce}), pc/h				391	391			1370		854	930	
Capacity (c), veh/h				383	383			1343		836	911	
v/c Ratio (x)				0.70	0.62			1.23		0.53	0.54	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh				32.0	26.6			125.2		11.6	11.3	
Lane LOS				D	D			F		B	B	
95% Queue, veh				5.1	4.0			51.2		3.1	3.4	
Approach Delay, s/veh				29.5			125.2			11.4		
Approach LOS				D			F			B		
Intersection Delay, s/veh | LOS	75.2						F					

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HCS7 Roundabouts Report

General Information

Analyst	KJ
Agency or Co.	El Dorado County
Date Performed	3/16/2017
Analysis Year	2019 Construction Year
Time Period	12:00-1:00 PM Summer Weekend
Project Description	US 50 / Pioneer Trail

Site Information

Intersection	US 50 / Pioneer Trail
E/W Street Name	Pioneer Trail
N/S Street Name	US 50
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.98
Jurisdiction	Caltrans

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
Lane Assignment							LR				TR		LT		T	
Volume (V), veh/h						478		16	0		1362	260	0	7	910	
Percent Heavy Vehicles, %						2		2	2		2	2	2	2	2	
Flow Rate (v_{PCE}), pc/h						498		17	0		1418	271	0	7	947	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes									1				2			
Pedestrians Crossing, p/h									2				2			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)					4.9763			4.9763		4.6453	4.3276	
Follow-Up Headway (s)					2.6087			2.6087		2.6667	2.5352	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h					515			1689		448	506	
Entry Volume veh/h					505			1656		440	496	
Circulating Flow (v_c), pc/h	1452			1418			7			498		
Exiting Flow (v_{ex}), pc/h	278			0			1435			1445		
Capacity (c_{pce}), pc/h					325			1370		854	930	
Capacity (c), veh/h					319			1343		836	911	
v/c Ratio (x)					1.59			1.23		0.53	0.54	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh					307.3			125.2		11.6	11.3	
Lane LOS					F			F		B	B	
95% Queue, veh					29.7			51.2		3.1	3.4	
Approach Delay, s/veh				307.3			125.2			11.4		
Approach LOS				F			F			B		
Intersection Delay, s/veh | LOS	120.5						F					

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