Markleeville Creek Floodplain Restoration Project
Alpine County, California

Initial Study/Mitigated Negative Declaration - Volume I

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Acronyms

ADA	Americans with Disabilities Act
APCDs	Air Pollution Control Districts
APE	Area of Potential Effects
AWG	Alpine Watershed Group
BCC	Birds of Conservation Concern
BMPs	Best Management Practices
CAA	(Federal) Clean Air Act

CAAQS	California Ambient Air Quality Standards
CAEPA	California Environmental Protection Agency
Cal-IPC	Californai Invasive Plant Council invasive plant inventory
CARB	California Air Resources Board
CCC	Civilian Conservation Corps
CCIC	Central California Information Center
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected species
CFR	Code of Federal Regulations
CH_4	Methane
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CRHR	California Register of Historical Resources
CSC	California Special Concern species
CWA	(Federal) Clean Water Act
dBA	Decibel- A-Weighted Value
DBH	Diameter at Breast Height
DPR	(California) Department of Parks & Recreation
DTSC	(California EPA) Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	US Environmental Protection Agency
ER	Ecosystem Restoration
ERA	Emergency Relief Administration
ESA	(Federal) Endangered Species Act
FC	Federal Candidate Species
FE	Federally Endangered Species
FEMA	Federal Emergency Management Agency
FGC	(California) Fish and Game Code
FHWA	Federal Highway Administration
FPD	Federally Proposed for Delisting
FPPA	Farmland Protection Policy Act

FPT,FPE	Federally Proposed Threatened or Endangered Species
FSORAG	Forest Service Outdoor Recreation Accessibility Guidelines
FSS	Forest Service Sensitive
FT	Federally Threatened Species
GBUAPCD	Great Basin Unified Air Pollution Control District
GBVAB	Great Basins Valleys Air Basin
GCSD	Statewide General Construction Stormwater Discharge
GHG	Greenhouse Gases
GWP	Global Warming Potential
HFCs	Hydrofluorocarbons
IRWMP	Integrated Regional Water Management Plan
IS/MND	Initial Study/ Mitigated Negative Declaration
IWM	Integrated Water Management
LCT	Lahontan Cutthroat Trout
L_{eq}	Equivalent Continuous Noise Level
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MPOs	Metropolitan Planning Organizations
MPUD	Markleeville Public Utilities District
MRZ	Mineral Resource Zone
msl	(above) mean sea level
N_2O	Nitrous Oxide
NAHC	(California) Native American Heritage Commission
NDEP	Nevada Department of Environmental Protection
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Services
NO_2	Nitrogen Dioxide
NOI	Notice of Intent
NO_x	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination Systems
NRHP	National Register of Historical Places
NSP	National Park Services
O_3	Ozone
Pb	Lead
P-C	Production-Consumption
PCC	Portland Cement Concrete
PFCs	Perfluorocarbons

PM	Particulate Matter
PM_{10}	Respirable Particulates
$PM_{2.5}$	Fine Particulates
Porter-Cologne	Porter-Cologne Water Quality Control Act
PRC	(California) Public Resources Code
ROW	Right-of-Way
RWQCB	(Lahontan) Regional Water Quality Control Board
SE	State Endangered species
SF_6	Sulfur hexafluoride
SMARA	(California) Surface Mining and Reclamation Act of 1975
SO_2	Sulfur Dioxide
SR	State Rare species
ST	State Threatened species
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
US	United States
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VMT	Vehicle Miles Traveled
WDRs	Waste Discharge Requirements
Williamson Act	California Land Conservation Act
WQ	Water Quality

1 Overview

1.1 Introduction

The Markleeville Creek Floodplain Restoration Project (Project) is intended to re-establish the natural form and function of Markleeville Creek at the site of the former United States Forest Service (USFS) Markleeville Guard Station. The Project will re-create the streamside habitat by removing the floodwalls and artificial fill material, and re-vegetating all disturbed areas. In addition to addressing the environmental restoration needs of this site, the Project will also provide various community benefits including utility improvements and public access for recreation such as walking paths, interpretive signage, picnicking and parking.

There are three project sponsors involved - Alpine County (County), Markleeville Public Utility District (MPUD) and the Alpine Watershed Group (AWG). As landowner, Alpine County is the lead agency. Both the AWG and MPUD are key stakeholders and primary planning entities focused on the direct benefits to the watershed and sewer utility, respectively. Various other community and agency partners are assisting with project development and/or involved on the Technical Advisory Committee (TAC).

1.2 CEQA Review

The proposed Project is a project under the California Environmental Quality Act (CEQA). In accordance with Section 15051 of the CEQA Guidelines, “Criteria for Identifying the Lead Agency”, Alpine County (the County), as a public agency carrying out the proposed Project, is the lead agency. Therefore, the County has prepared this Initial Study to determine if the proposed Project may have a significant effect on the environment.

1.3 Location

The Project is located in Alpine County, California in the town of Markleeville on the north side of Highway 89, in the Markleeville US Geological Survey (USGS) Quadrangle map, NE ¼ of the SE ¼ of Section 21, T10N, R20E MDBM (See Figure 1.1).

The Project site is located in the town of Markleeville, immediately east and downhill from the Alpine County Administration Center. Land uses to the north and west are urban (commercial and public), while those to the south and west are residential. Land uses to the east are a mix of rural agricultural, public institutional (including the site), and open space/recreation.

The project boundary (see Figure 1.2) includes an approximately 5.48 acre area that formerly housed the USDA Forest Service (USFS) Markleeville Guard Station. The site includes Markleeville Creek and immediate adjacent areas downstream of the Highway 89 Bridge and Millberry Creek downstream of the MPUD access road to its confluence with Markleeville Creek. The parcels within the project boundary are primarily owned by the County (APNs 002-280-002-0, 002-280-003-0, 002-280-005-0, 002-280-006-0, and include a portion of a private parcel along the MPUD access road (002-260-002-0). The MPUD holds access easements along all pipelines and a blanket access easement that includes the access road. A portion of the site lies within the Caltrans right-of-way (ROW) along Highway 89.

Figure 1.1 Project Vicinity and Location

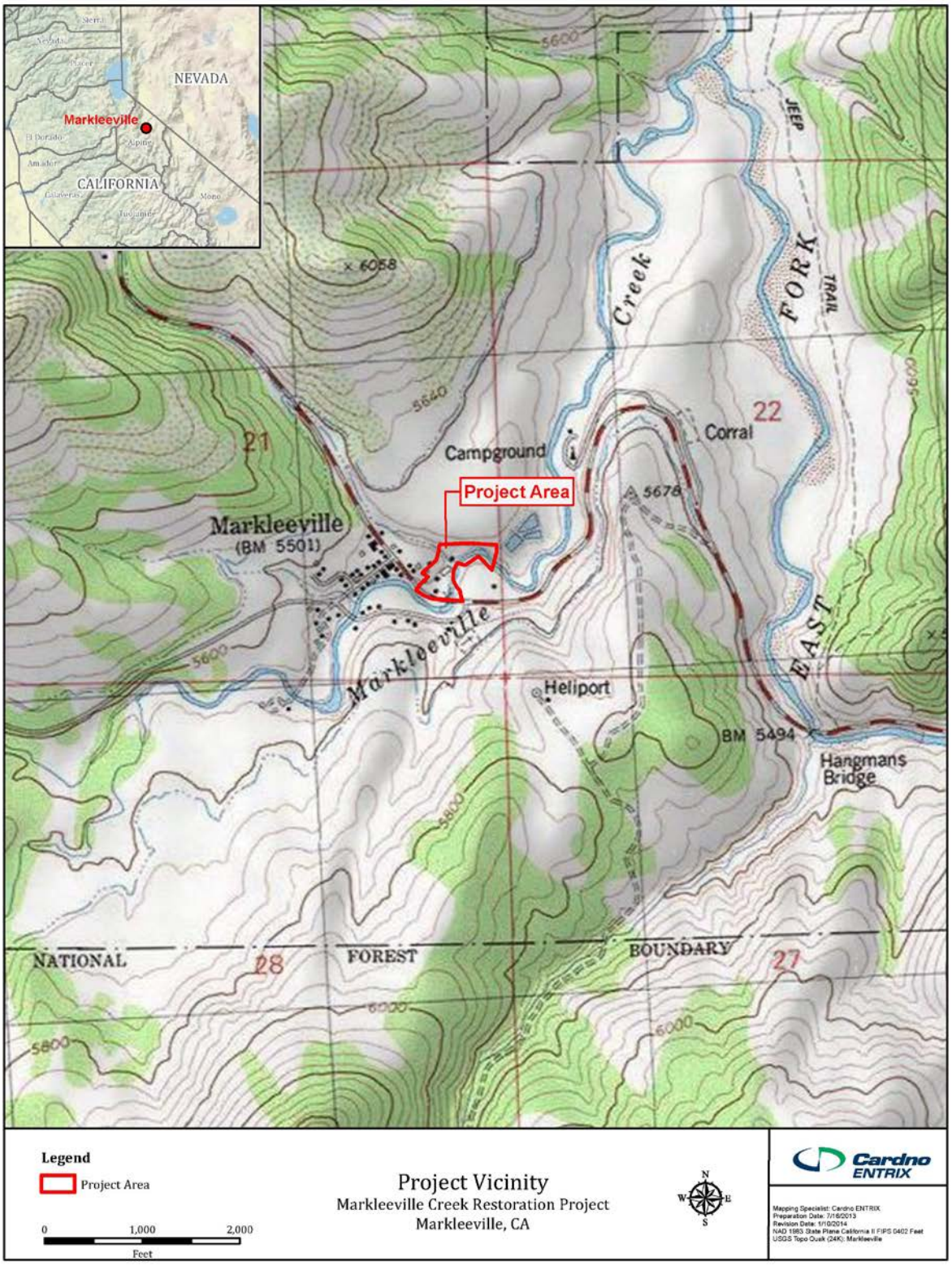
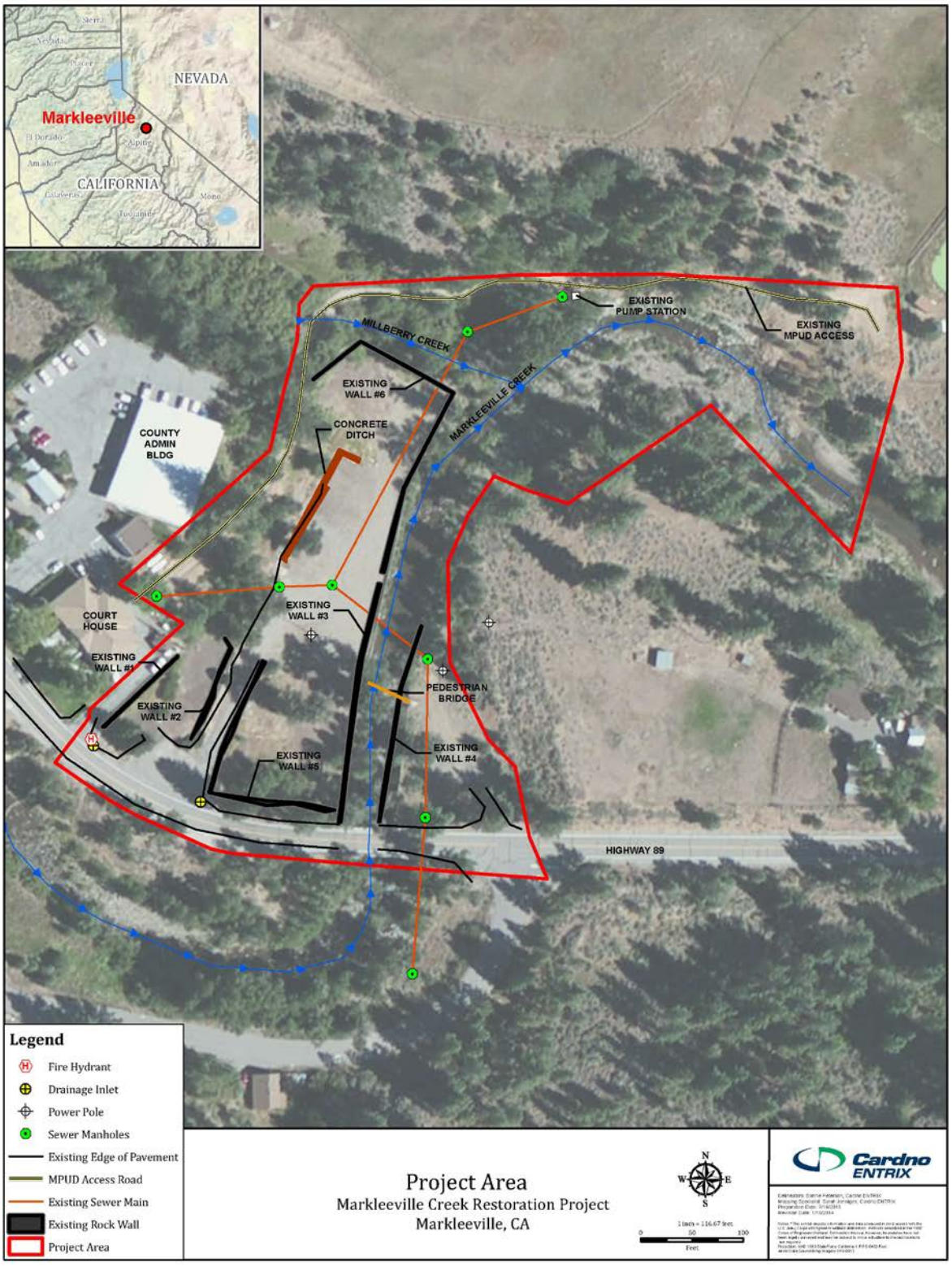


Figure 1.2 Project Area



2 Project Description

2.1 Background

2.1.1 Site History and Flooding

The project reach of Markleeville Creek has been highly altered since the 1930s, when initial portions of rock floodwalls were constructed to isolate the former floodplain and the area was cleared, graded and native soils were buried with fill to allow construction of the USFS Guard Station facility.

The placement of fill and the erection and extension of the floodwalls over the decades allowed the developed uses and prevented inundation during typical seasonal runoff or small floods. However, the site remained subject to significant and repeated flooding during major storm events. Historical information indicates that the building pads and other developed portions of the site were inundated by floods in 1937, 1950, 1955, 1997 and 2005 (see Appendix A). Hydraulic modeling demonstrates that the floodwalls prevent inundation from creek overbanking in the 2- and 5-year runoff events, but do not prevent flooding from the 10-year or greater events, including the 100-year event.

Several of the existing sewer manholes within the project site are not accessible during inclement weather or flood conditions. The existing access road to the MPUD sewer pump station and wastewater treatment plant has limited access to large vehicles (such as vacuum trucks) during inclement weather or floods. The existing sewer pump station along the MPUD access road is not accessible during flood events. Additionally, the existing pump station site does not have sufficient space for bypass pumping, temporary power, and maintenance/construction activities while maintaining access to the treatment plant.

Following the 1997 flood, the County and MPUD installed rock gabion slope stabilization measures along the left bank of Markleeville Creek downstream of the existing MPUD pump station within the site to protect the road, sewer force main and the USFS campground waterline. The stabilization measures included placed rocks at the toe of the streambank, rock gabion baskets at the toe of slope, and erosion blanket and vegetation on the upper slope to the MPUD road.

2.1.2 Project History

The Markleeville Creek Restoration Project has been identified as a priority floodplain restoration project for the Upper Carson River Watershed in three watershed-level planning and assessment documents – the Upper Carson River Watershed Stream Corridor Condition Assessment (MACTEC 2004), the Carson River Watershed Adaptive Stewardship Plan (2007) and the Carson River Watershed Floodplain Management Plan (CWSCD 2008). The Markleeville Creek Restoration Project has been incorporated in the Tahoe Sierra Integrated Regional Water Management Plan (IRWMP) and would meet a variety of the IRWMP's water quality (WQ), ecosystem restoration (ER) and integrated water management (IWM) objectives.

The Alpine Watershed Group (AWG) has led the planning efforts for this project since 2005, working closely with several project partners. Site restoration planning began with the creation of a Technical Advisory Committee (TAC) that included diverse representatives from the County, the State of California and the U.S. Forest Service, which owned the property. AWG staff and volunteers performed community outreach and education regarding the need for site restoration. Initial funding secured from the State of California Department of Water Resources (California Urban Streams Restoration and Flood Control Act) supported preliminary planning and design and produced a draft Restoration Design Plan and Report in May 2007 (RCI 2007). Some aspects of the sanitary sewer system modifications, the USFS building removals, and the landownership transfer were not yet completed or resolved at that time.

The County and AWG continued planning and funding efforts focused on the transfer of land ownership to local control while the USFS completed the removal of buildings and off-site relocation of their Guard Station facility in June 2010. The USFS and the County executed a Memorandum of Understanding regarding the land transfer. The County summited a Townsite Act[10] application several years prior to grant funding through the California River Parkways Program (awarded November 2012), and the land transfer process was completed as of the County Board of Supervisors authorization on December 23, 2013.

AWG secured additional grant funding from the Sierra Nevada Conservancy in fall of 2011 to support exploration of design options regarding the sanitary sewer system modifications, updated agency and community input, additional active participation of the MPUD, consideration of environmental impact analysis and permit requirements, and final design development.

As of January 2014, the project team has completed the project description and environmental analysis reflected herein, including the 95% restoration design plan set, concept design for the sewer system modifications, and supporting technical studies. The final steps in the planning stage will involve completion of the sewer design and any necessary modifications to the CEQA document. Project leaders and TAC members will maintain communications and continue their search for implementation funding.

2.1.3 Purpose

The primary purpose of the Project is to re-establish the natural geomorphic form and ecosystem functions of Markleeville Creek and its floodplain. The Project will counteract the historic site disturbance, which included: installation of buried and above ground utilities; construction of structures for flood control; native vegetation clearing; and, placement of artificial fill, building pads and related features. The geomorphic and ecosystem restoration will directly improve water quality protection and enhance community recreation and environmental tourism values.

Changes to the existing sewer system infrastructure on-site are a necessary prerequisite to fully realize the primary restoration purpose. Additionally, sewer infrastructure modifications on the site will fulfill high priority MPUD needs to: extend the lifespan of the facilities; improve reliability; provide safer year-round accessibility; and reduce the probability of any water quality risks posed by continued exposure of the aging pipes, manholes, and pump station to flooding. Therefore, improvement of the MPUD sewer infrastructure is also a key purpose of the Project.

2.2 Project Goals and Objectives

The primary goals of the Project are to: 1) restore the natural stream channel and floodplain; and, 2) provide community benefits for residents and tourists.

The Project's ecosystem goal is to restore the floodplain and streamside environment to more closely resemble its natural state by reconnecting the stream to its historic floodplain and improving geomorphic function. The ecosystem objectives are:

> Restore degraded wetlands to reestablish natural water filtering processes

> Restore floodplain functions to reduce damaging effects of floods and to allow ecological benefits of overbanking

[10] The Townsite Act allows the sale of National Forest System Lands to counties, cities or other local governmental subdivisions if those lands would serve community objectives that outweigh the public objectives and values of retaining the lands in Federal ownership. Community objectives include community parks and other recreation areas for local citizens.

- Enhance degraded streams to support healthy and viable native fish populations
- Reduce nutrient and sediment loads to receiving water bodies
- Restore and expand riparian vegetation and floodplain wetland biogeochemical cycling

The Project's primary community benefit goal is focused on MPUD infrastructure improvements.

The infrastructure objectives are:

- Relocate key sewer system infrastructure out of the floodplain
- Reduce the potential for sewer system overflows
- Replace aging pipes, manholes and pump stations to extend their lifespan
- Reduce the threat of water quality impairments from flooding, leaks or spills
- Provide safe access to sewer system infrastructure during all weather conditions
- Improve safety of year-round access to MPUD treatment ponds

The Project's other community benefit goal is to enhance recreational and educational opportunities for both visitors and residents. These community objectives are:

- Provide formal public access for vehicles, bicycles, and pedestrians, including ADA compliant access to a scenic and recreational resource
- Install initial recreation features including informal walking paths, benches, and picnic opportunities
- Protect core areas of existing mature riparian vegetation to limit net adverse effects on site aesthetics
- Salvage and save representative elements of the rock floodwalls for future reuse in decorative or interpretive features
- Create continuing opportunities for community involvement with site adaptive management, monitoring, and environmental education and interpretation
- Facilitate future public recreation facilities and services, including a public restroom, interpretive trails, constructed fishing access or additional picnic areas.

2.3 Project Components

2.3.1 Major Elements

The Project has three major elements: sewer system modifications; floodplain restoration; and, public access facilities. These elements are related and complimentary, but must be implemented in a specific sequence. The sewer system modifications need to occur first in time, so that the floodplain restoration can utilize the entire footprint of existing disturbed ground, some of which now includes sewer manholes and other infrastructure. The public access facilities could be implemented concurrently with the floodplain restoration. If the restoration portion of the work was delayed for a significant period of time, the new MPUD access road and pump station/force main could still be constructed and commissioned in anticipation of the future restoration work. This would allow for immediate construction on floodway restoration work in the future, since the pump station would already be constructed and operational.

2.3.1.1 Sewer System Modifications

The sewer system modifications include three components:

> Replacement and relocation of sewer pipelines under the site, with changes to the location and extent of gravity versus pressure (force main) pipes.

> Construction of a new pump station along the new pipeline alignment

Modification of the access road location, profile, and drainage facilities

2.3.1.2 Channel and Floodplain Restoration

The channel and floodplain restoration includes several components that accomplish the ecosystem restoration objectives:

> Removal of artificial fill and floodwall obstructions

> Lower and reshape topography to reconnect active floodplain surfaces on both sides of Markleeville Creek

> Realign and reshape portions of the Markleeville Creek streambank

> Realign the Millberry Creek channel plan and profile and reconnect it to the restored floodplain

Re-vegetate existing barren surfaces and all surfaces disturbed by construction with native plant communities

2.3.1.3 Public Access Facilities

The public access facilities element includes several components to achieve and support the community benefit objectives:

> Construct a new off-highway paved parking lot west of Markleeville Creek

> Construct new stormwater drainage and treatment facilities for both the proposed parking area as well as for existing Caltrans highway runoff

> Improve the driveway configuration and safety

> Construct an ADA-compliant trail and install informal walking paths in the restored site

> Create a picnic area and provide resting benches along the trails

> Accommodate future public access and interpretation features, including:

  o An ADA accessible public restroom, bicycle parking, signage and trail markers

2.3.2 Design Features

The following section summarizes the available design information describing the proposed features, performance guidelines and/or applicable design criteria for each of the three major components of the Project. Figure 2.1 provides an overview of the combined result of all three of the Project elements, and Figures .2.2 and 2.3 illustrate the distinct elements. Additional graphics and description of the proposed sewer system modifications at approximately 10% level of design are included as Appendix B. The 95% level of design plans, specifications, and cost estimate for the floodplain restoration and public access facilities are attached as Appendix C.

Figure 2.1 Overview of all Project Elements

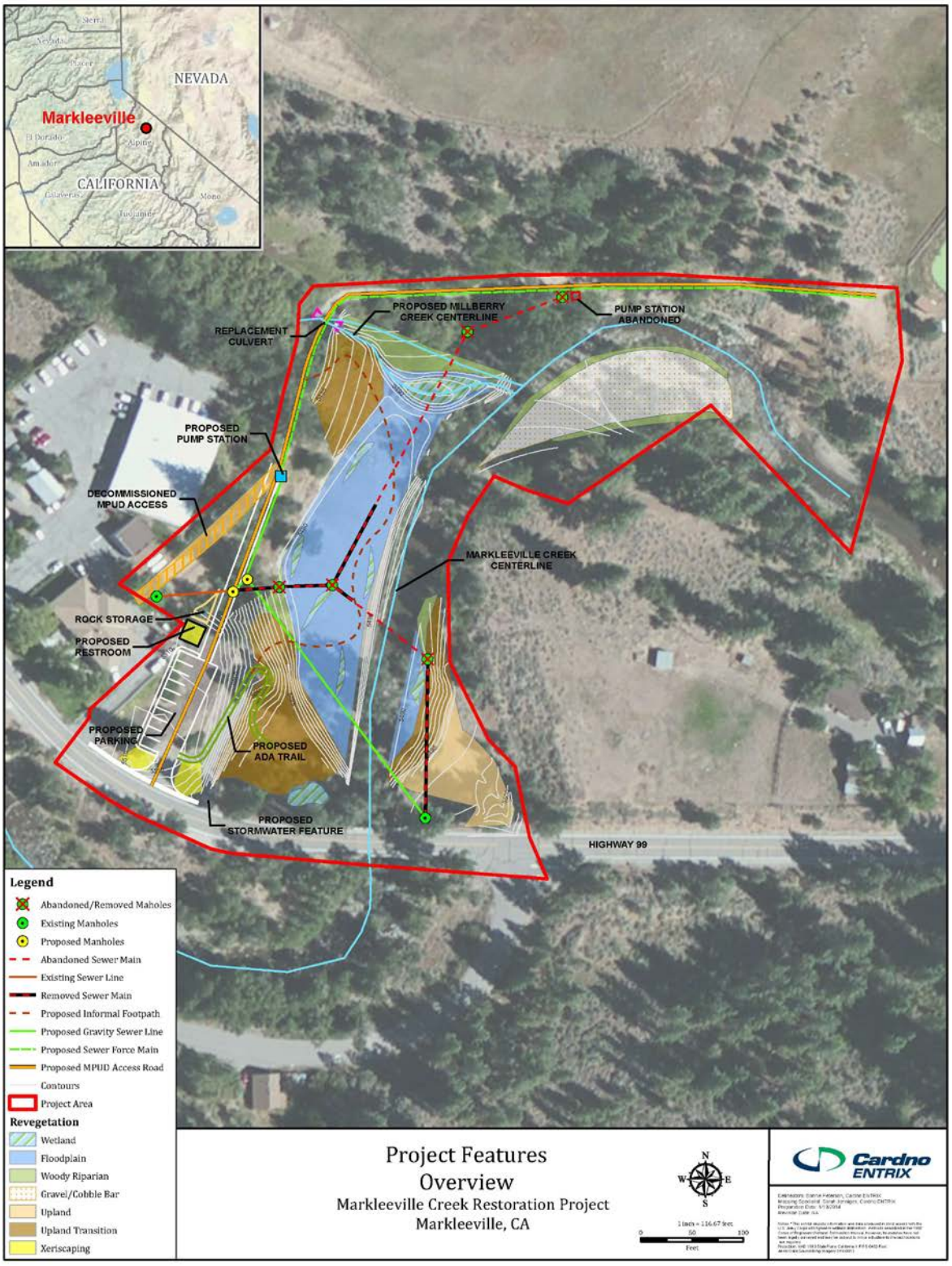


Figure 2.2 Overview of Sewer System Modifications

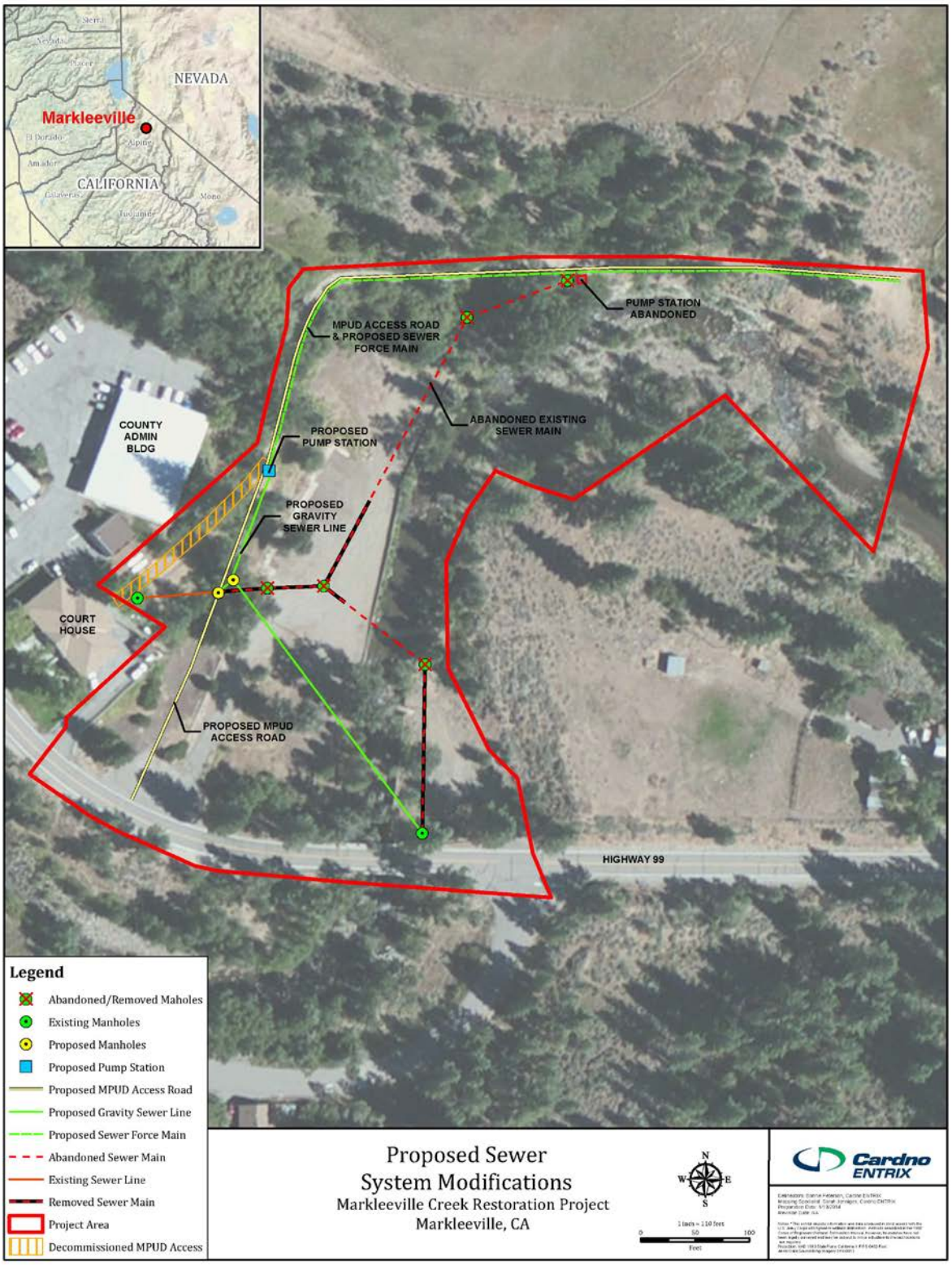
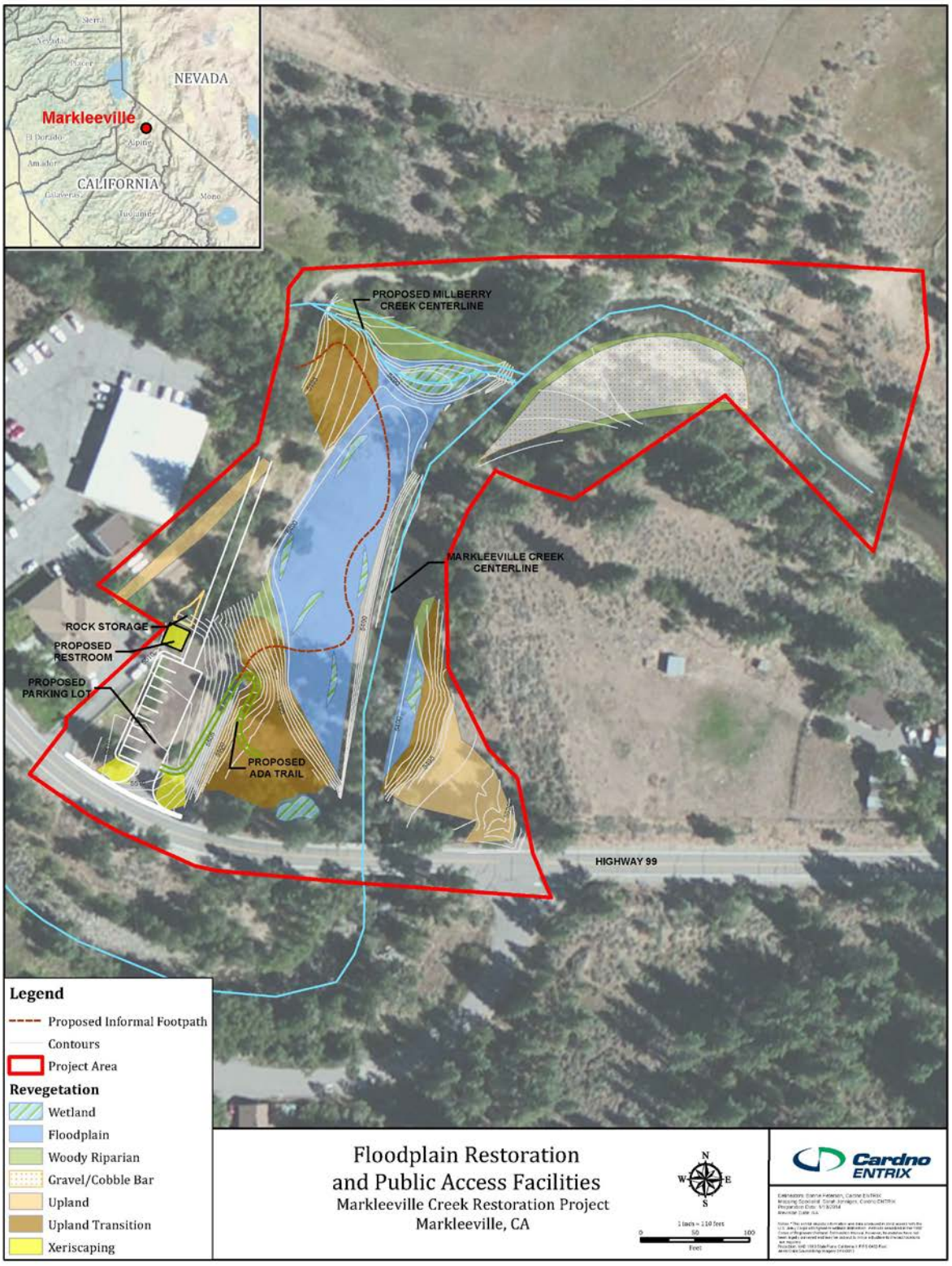


Figure 2.3 Overview of Ecosystem Restoration and Public Access Features



2.3.2.1 Sewer System Modifications

The sewer system modifications would generally include demolition, removal, and/or abandonment of existing on-site facilities and the construction of new replacement on-site facilities. Schematic diagrams related to the sewer system modifications are provided in Appendix B. The final design will provide an access road, sewer manholes, and pump station that is accessible to maintenance vehicles at all times, regardless of weather conditions. The maximum expected flood elevation for a 100-year flood within the project boundary is about 5496 feet above mean sea level (msl). All new surface sewer facilities will be constructed one to two feet above the 100-year (projected) flood elevation as not to become inundated (See Appendix Figure B-1).

The replacement and relocation of the MPUD sewer pipelines will:

> Abandon in place the existing gravity pipeline undercrossing of Markleeville Creek. The existing pipe segment under the creek is 8-inch concrete-encased steel gravity pipe at a depth of 1.3 feet bgs constructed in 1967 (see Appendix Figure B-2). Pipe abandonment would be performed by cutting the pipe ends outside the creek banks, filling the internal pipe space with concrete, and capping the ends of the abandoned pipe.

> Construct a new gravity pipeline undercrossing Markleeville Creek with an 8-inch concrete-encased PVC gravity pipe (see Appendix Figure B-3) at a depth of two feet below the creek bottom[11], to be installed using open trench methods. The new creek undercrossing would be constructed with a 0.5% minimum slope.

> Remove approximately 203 feet of existing asbestos concrete gravity sewer pipeline and one manhole east of Markleeville Creek. Install 80 feet of new 8-inch PVC gravity pipe at a depth of 5 to 19 feet below finished grade. Install a new drop manhole adjacent to Hwy 89 via open trench methods.

> Remove about 640 feet of existing asbestos concrete gravity sewer pipeline and three (3) manholes west of Markleeville Creek. Install 518 feet of new 8-inch PVC gravity pipe at a depth of 5 to 22 feet below finished grade.

> Temporarily abandon the decommissioned manholes in place until the floodplain restoration phase, at which time they would be removed.

  o If the floodplain restoration element did not happen within three to five years, an additional 93 feet of sewer line would be installed to connect the new pump station to the existing sewer system (at a new manhole constructed in the uplands near the proposed access road).

> Remove about 335 feet of existing force main along the new MPUD access road and install about 670 feet of new force main pipeline using open trench methods.

> Install lockable new manhole lids, and, if the floodplain restoration element does not happen three to five years, fit remaining manholes within the 100-year floodplain with watertight locking lids.

The MPUD sewer pump station changes will:

> Remove the existing screening manhole and existing pump station, using construction access off of the existing MPUD access road. These removals will likely occur concurrently with the access road improvements. The existing gravity sewer pipelines north of Millberry Creek would be abandoned in place.

[11] *Statements of depth for the proposed sewer features are relative to proposed finished grade as opposed to existing ground. Statements of depth for the existing sewer features are relative to existing topography.*

- Construct a new pump station along the MPUD access road and new pipeline alignment (see Appendix B for schematic plans).
    - The new pump station shall meet Hydraulic Design Institute specifications with pumping capacity equal to that of the existing sewer pump station. Pump station design will include provisions for maintaining the storage time-to-overflow in the event of a pump station failure or malfunction. Currently, time-to-overflow is a minimum of six hours during peak flow conditions, which is provided by a combination of wet well volume and lower collection piping and manholes. To maintain this time buffer, the proposed pump station wet well diameter or depth would be increased for storage. This improvement will provide additional safeguards and reliability for sewer function and maintain the response time necessary to procure emergency equipment and contractors in the event of a major failure or blockage.
    - Provide sufficient space for MPUD operations staff and/or emergency vehicles to access and maintain the system during all weather conditions.
    - Locate the new pump station to provide necessary hydraulic grade for conveyance from gravity sewers to the pump station.
    - Locate the new pump station outside the 100-year floodplain boundary and at a finished elevation above the maximum anticipated 100-year flood height. The wet well structure will have a depth of approximately 25 feet below grade.

The modification of the MPUD access road location, profile and drainage facilities will:

- Relocate the MPUD access road entry point to be co-located with the proposed parking lot at the southwest corner of the site. This will eliminate the need for maintenance vehicles to travel between the courthouse and administration buildings and allow for a lower gradient road profile. The road would have a 12 foot travel width, and would be equipped with a locked pipe-gate to prevent unauthorized vehicle use but allow emergency response as well as MPUD use.
- Modify the MPUD access road profile and cross section to reduce the maximum road profile slope and to create a more uniform standard cross section that is 12 feet wide with two (2) percent crown and minimum cover of three (3) feet over the new sewer and relocated water line pipes.
- Co-locate the existing USFS campground water supply pipeline along the new MPUD road alignment (with 10 feet of minimum lateral separation from the proposed sewer pipeline)
- Improve roadside stormwater drainage along the entire access road between Hwy 89 and the MPUD treatment ponds, including the provision of two (2) drop inlet/culvert outfalls to reduce potential for erosive stormwater runoff across or down the road

Replace and realign the culvert crossing at Millberry Creek and raise the road bed elevation between two (2) and four (4) feet at it existing low point to provide adequate cover and separation for the new sewer pipeline as well as to ensure that the road will not be inundated by flood waters.

2.3.2.2 Channel and Floodplain Restoration

The removal of artificial materials and structures along the channel and on the floodplain will target removal of features that directly impair the geomorphic and ecological functions and those features and materials that are unsuitable for reuse on the site. The plan set, specifications, and cost estimate for the proposed restoration are attached as Appendix C, and incorporated herein as part of the project description.

Approximately 4,400 cubic yards total cut of artificial fill would be removed. Approximately 160 linear feet of floodwall would be removed on the east side of the channel downstream of the Caltrans ROW. A total of 570 linear feet of floodwall would be removed on the west side of Markleeville Creek downstream of the

Caltrans ROW, including 170 feet along Millberry Creek. This represents a total volume of 158 cubic yards (assuming and average width of 1.5 feet and average height of five feet). Portions of the rock floodwall would be salvaged, particularly representative sections with high quality characteristics, and stored in a 280 square foot upland long-term storage location along the MPUD access road adjacent to the reserved restroom building pad. These materials would be available for future use in public access and interpretation features.

The lowering of the floodplain and changes to the Markleeville and Millberry Creeks follows geomorphic design principles to reconstruct natural appearing and naturally functioning stable channels with connected floodplains. The active floodplain grading would improve overbanking along Markleeville Creek during 2-year and 5-year events or larger, which equate to peak flows of 378 and 993 cfs, respectively (RCI 2007). The desired finished floodplain elevation (approximately 5490 ft msl) was selected using a combination of: hydraulic modeling to optimize for overbanking during these flows (see Appendix D for HEC-RAS model information); the estimated thickness of artificial fill on the site (see RCI 2007 appendices); and, probable stable streambank heights for the soils and vegetation[12]. The lowering of topography to reconnect the active floodplain along Markleeville Creek following these guidelines requires excavation averaging 2.3 feet below the existing surface, and ranging from zero (0) feet to six (6) feet of maximum excavation. The residual streambank height will range from one to three feet.

The 25,140 square foot restored active floodplain would be meet the finished elevation (5490 ft msl) and shaping per the grading plan, including several isolated depressions, as well as specifications that require the floodplain to be graded to achieve 'natural-looking' variability in its final shaping, and the incorporation of some partially buried large rock (i.e., boulder and cobble) and large woody debris (i.e., logs with attached root wads). The total restored floodplain including all areas up to the 100-year boundary would be 1.4 acres.

The direct modifications to Markleeville Creek's alignment would be changing the west bank's curvature where it had been straightening along the floodwall. To restore natural curvature, about 300 linear feet of the top-of-bank along the west side would be moved laterally between 0 to five (5) feet away from the existing floodwall position. The toe-of-bank would either remain at its present location or be moved further towards the channel center (up to five feet). Together, these bank realignments create a more gently sloped bank and a more natural curve in the river plan form.

A variety of re-vegetation approaches will be integrated in the streambank stabilization throughout the project reach, low angled herbaceous dominated banks along the east bank, rock toe with woody top-of-bank vegetation along much of the west bank, some areas of steep banks with overhanging woody vegetation, and a few locations with low density top-of-bank vegetation.

The existing multi-level large cobble and boulder sediment bar on the right bank of Markleeville Creek downstream of Millberry Creek, which was last substantially modified by the 1997 flood event, would be reshaped. This would reduce the hydraulic confinement between the bar and the left channel bank at the toe of slope below the MPUD access road. Approximately 13,445 square feet bar surface would be modified. Given the existing topographic irregularity of the bar and the desire to limit disturbance of mature vegetation along the right bank overflow channel, the range of excavation depth would vary from zero to three feet, averaging about 1.6 feet and resulting in a net cut volume of roughly 800 cubic yards. All of the river rock boulders, cobble, gravel and sand that will be skimmed from the bar would be reused on-site after being sorted.

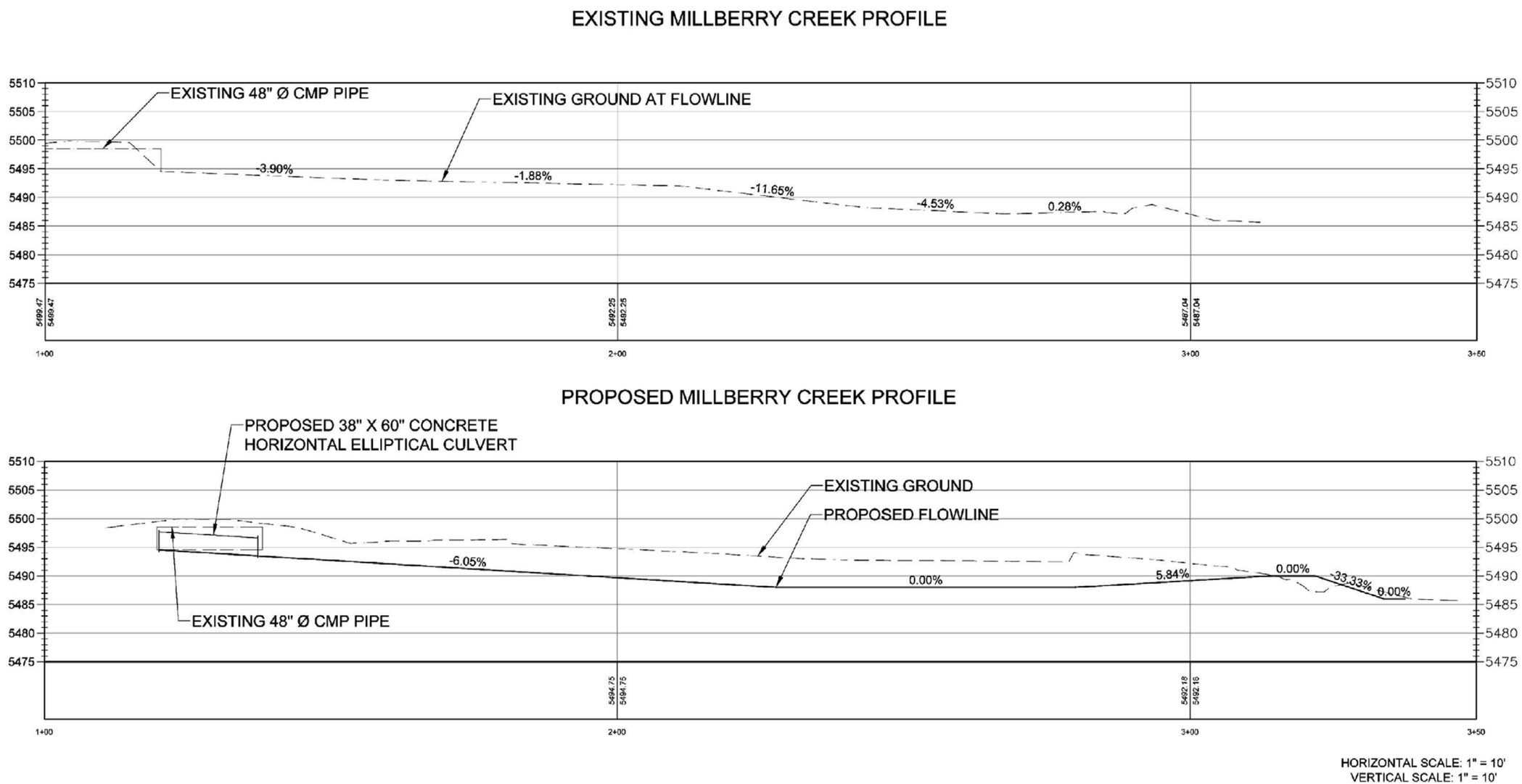
Changes to the low flow channel bed of Markleeville Creek would be limited to two bed stabilization and habitat enhancement riffle sections, one immediately downstream of Millberry Creek and another in the

[12] Estimates by Cardno using Bank Stability Toe Erosion model (BSTEM) and similar soil and hydraulic properties from Upper Truckee River.

vicinity of the new sewer pipeline crossing (Figure 2.2). Each riffle treatment would include sub-surface rock that is sized and installed to be stable up to the 25–year peak streamflow event, covered by a minimum of 1 to 2 feet thick surface layer of poorly sorted, rounded river rock ranging from sand through gravel sizes and including randomly placed boulder and cobble. The riffle treatment at Millberry Creek would be approximately 32 feet wide, covering the full width of the active channel with sub-surface rock keyed in under the boulder and cobble bar. However, the treatment would have limited upstream/downstream extent to the minimum disturbance area for construction equipment access across the channel (approximately 15 feet). The upstream riffle treatment would be in the vicinity of the new sewer pipeline crossing and would provide supplemental sub-surface bed stabilization over the infrastructure while ensuring streambed materials are consistent with desired aquatic habitat conditions.

The modifications to the Millberry Creek channel will backfill its existing entrenched channel to become part of a unified floodplain and will restore Millberry overbanking under typical seasonal peak flows. A new, smaller capacity Millberry Creek low-flow channel would be constructed along a more sinuous alignment across the restored floodplain. The changes to the Millberry Creek profile would extend upstream of the MPUD road crossing to smooth the profile, decrease the number of grade breaks, reduce the maximum channel bed slope from 12 percent to 6 percent, and install resistant cobble riffle and step sections extending 90 feet downstream of the new culvert outfall and about 16 feet upstream of the Markleeville Creek confluence (Figure 2.4).

Figure 2.4 Millberry Creek Profiles



Re-vegetation of the site would include short-term protections but focus on long-term restoration of self-sustaining native plant communities throughout most of the site. The re-vegetation plan and specifications address all areas that have been cleared historically and remain degraded or barren, as well as all construction disturbance areas that will not otherwise be stabilized for paved surfaces, trails, or stormwater features (see Appendix C). The re-vegetation design would replicate the character of similar stream reaches within the watershed in terms of plant structure, species composition, and appearance. While much of the site would have riparian vegetation, the design includes a range of target vegetation suited to the various geomorphic surfaces and their anticipated hydrology relative to the stream channel, floodplain, and groundwater elevations.

The re-vegetation plan and specifications prioritize the reuse of salvaged topsoil wherever possible and the placement of salvaged sod in depressions to support wetter plant species. In these locations, the rough grading would be required to be deep enough to meet finished grade after the placement of salvaged topsoil and/or sod.

Vegetation management in the naturalized floodplain, channel margins and adjacent upland sections of the site would be passive. Periodic vegetation treatments to clear the ADA trail ensure line of sight along the MPUD access road, or to address adverse local vegetation damage from floods or concentrated foot traffic would be conducted by County staff and/or AWG volunteers.

A very small area of managed landscaping will be included along the Caltrans ROW and on the immediate margins of the proposed parking lot. The landscaped area includes 570 sq ft on the northwest side of the proposed driveway and 800 sq ft on its southeast side. Existing mature non-native trees in these landscaped locations would be preserved, and any re-vegetation would use native, drought-tolerant species, since long-term irrigation would not be provided.

The range of re-vegetation methods will include: on-site salvage and harvest of cuttings; seeding, container plantings; and combinations of seeding and container plantings with erosion control blanket and other temporary BMP measures. The reuse of salvaged topsoil and selective use of topsoil amendments is required in the plans and specifications to foster successful plant establishment.

Temporary irrigation will be provided to support plant establishment during the contractor's two year re-vegetation performance period.

Additional vegetation management activities, including the possibility of additional native plantings for interpretive use may be performed in the future, but would not be part of the Project to be constructed under public bid.

The sewer system element would include temporary re-vegetation measures to ensure that areas directly disturbed by that phase of the work would be stabilized during the interim period before implementation of the floodplain restoration. Additionally, the sewer system element would be required to implement permanent re-vegetation of their direct disturbance areas if the floodplain restoration element would not be implemented within two growing seasons.

2.3.2.3 Public Access Facilities

The public access facilities will include construction of engineered features to support vehicle and pedestrian access and to safely convey and treat stormwater, as well as efforts to facilitate immediate and eventual environmental education, interpretation, and recreational uses.

A 4,000 square foot off-highway paved vehicle parking lot will be constructed west of Markleeville Creek that provides nine (9) vehicle spaces, including one (1) ADA space, and will require:

> Removal and disposal 110 linear feet of existing rock/concrete retaining wall about five feet high and two feet wide (an estimated 41 cubic yards of material)

- Removal and disposal of about 5,050 square feet of existing asphalt pavement (an estimated 262 cubic yard volume, assuming asphalt is four inches thick)
- Earthwork reshaping of the existing fill slopes and incorporating suitable replacement/additional reused fill to create a stable parking lot pad with side slopes no steeper than 2:1.
- Installation of 72 CY (assuming 4" thick) of asphalt pavement striping, etc.

The driveway west of Markleeville Creek on HWY 89 would be reconfigured to serve the new parking lot and the realigned MPUD access road and improve the driveway dimension, angle, and visibility. The existing unpaved entrance off HWY 89 east of Markleeville Creek would be decommissioned and replaced with more naturalized topography including a drainage swale that dissipates flow on the restored floodplain.

On-site stormwater treatment to accommodate the 100–year, 1-hour rainfall runoff generated on the proposed paved parking lot and to accept run on from the 10,252 sq ft of adjacent hill slope will be included by installing 240 linear feet of a four foot wide, one and a half foot deep porous pavement along the margins of the parking lot. Although the capacity of the trenches is large assuming 40% void space and overflow discharge would not be expected, the trenches will have an outfall that is co-located with the closest proposed MPUD access road's drainage outfall.

Stormwater generated on HWY 89 will be prevented from mingling with the runoff in the new parking lot and reconfigured driveway. A new drop inlet and 13 feet of conveyance pipe will be installed to route the highway runoff to a 80 feet long rock-lined channel and a 675 cubic foot stormwater pre-treatment basin. These stormwater management features will accommodate the 100-year, 1-hour rainfall runoff from HWY 89 and be located entirely within the Caltrans ROW. They will pre-treat stormwater rather than continue the existing direct stormwater discharge to Markleeville Creek.

A paved ADA trail extending 224 feet from the parking lot to the margins of the restored floodplain and terminating in a 18 foot wide viewing platform will be constructed to meet the following standards:

- Accessibility Guidelines and Standards for Americans with Disabilities Act (ADA) -Accessibility Guidelines for Buildings and Facilities; Recreation Facilities as Published in the Federal Register by the Architectural and Transportation Barriers Compliance Board.
- Current Report from the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas.
- Specific requirements for the " Design of Outdoor Recreation Access Routes" as specified in Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG), dated 5/22/06 or later, conforming to the required widths, radii, sustained running slopes, cross slopes, passing space (if needed), rest areas, vertical clearance, etc.

Approximately 457 linear feet of informal walking pathways (composed of decomposed granite about 3 feet wide) will be installed within the restored floodplain west side of the creek and be accessed from the ADA trail and/or the MPUD access road. While the changes to the streambanks will require removal of the existing pedestrian bridge feature, informal pedestrian access to both Markleeville and Millberry creeks would be maintained and even improved by: removal of the floodwalls; the provision of pathways; and diverse streambank treatments.

A picnic area will be provided in the more developed use area near HWY 89, along with resting benches along the pathways within the site.

A 400 square foot footprint location is identified adjacent to the parking lot and along the new MPUD sewer alignment for a future public restroom facility.

The 1370 square foot area of xeriscaping adjacent to the proposed driveway can accommodate future bicycle parking, entrance signs and there is ample space for interpretative signage to be added along the trails and/or around the picnic area.

2.4 Project Phasing

The TAC considered the technical sequencing requirements of the three major project elements, along their total cost estimates, and recognized that multiple funding sources may be required and/or may be suited to the major components of the project. Therefore, implementation is envisioned as multiple steps. The implementation of each step must occur in the stated sequence, but all could be completed in a given construction year if adequate funding was obtained. Alternatively, the steps could be executed independently over a series of years as funding is secured.

The sewer system modifications are a critical path item to be completed in order for the ecologic/geomorphic restoration to proceed and for public access elements to be subsequently added without hindrance. Ideally, these modifications would be constructed relatively early in a given construction season and be followed immediately by implementation of the floodplain restoration and public access elements. It would also be relatively easy for all elements to be implemented over a one to three year window. However, it must be acknowledged that circumstances could prevent construction of all elements within a reasonable time frame.

At this time, it is not certain whether the project would be implemented in a single construction season, in multiple sequential seasons, or in two distinct separate phases, due to construction funding constraints. Two extremes are considered: the first assumes that construction happens as quickly as possible (concentrated in one season); and, the second assumes that a period of one or more years passes between construction of the sewer system elements and the restoration elements.

While all elements of the Project are desired to meet the overall purpose, goals, and specific objectives, there is some degree of independence. For example, the sewer system modifications could be implemented independent of the other two elements, but would require adjustments for permanent re-vegetation. Similarly, the public access elements could be implemented independent of the other two elements, but a modified parking, driveway, and trail layout would be required. Finally, it is theoretically possible that the floodplain restoration could occur whether or not the other two elements are constructed. However, realizing the full benefits of this element is dependent on the sewer system modifications. The floodplain restoration design would require substantial changes if the sewer system modifications were not constructed, and the changes might not be acceptable to the MPUD or the Lahontan Regional Water Quality Control Board (RWQCB).

2.4.1 Sewer System Phasing Options

Depending on the timing of sewer system funding and floodplain restoration construction funding, the proposed sewer modifications could undergo a single construction phase or multiple phases (see Appendix Figures B-5 and B-6).

2.4.1.1 Single Phase

All sewer facilities construction occurs during same construction period as floodplain restoration work

1. Construct the proposed new access road, sewer pump station, force main, manholes, and gravity sewer lines (in relocated areas) west of Markleeville Creek.
2. Connect and activate the new sewer system infrastructure (including pump station) west of Markleeville Creek.
3. Begin mass grading for the floodway restoration work.

4. Construct new sewer pipe undercrossing at Markleeville Creek and connect to new sewer system infrastructure.
5. Remove surface features of existing screening manhole and sewer pump station to 5 feet below grade. Abandon in place (and backfill with concrete) existing screening manhole and sewer pump station from 5 feet below grade to bottom of structure.
6. Abandon the sewer pipe undercrossing at Markleeville Creek and all other sewer lines with a cover greater than 3 feet. Remove all other sewer infrastructure.

2.4.1.2 Multiple Phase

2.4.1.3 Phase 1 – sewer improvements performed in advance of floodway restoration work

1. Construct the proposed access road to the proposed new pump station location.
2. Construct the new pump station (fully equipped) and force main.
3. Construct a new sewer line and manhole to tie the existing sewer system into the new pump station/force main.
4. Remove surface features of existing screening manhole and sewer pump station to 5 feet below grade. Abandon in place (and backfill with concrete) existing screening manhole and sewer pump station from 5 feet below grade to bottom of structure.
5. Abandon in place sewer pipelines that have been disconnected from the system.
6. Ensure that all manholes within the project area are lockable and watertight.

2.4.1.4 Phase 2 – sewer improvements performed with floodway restoration work

1. Construct the proposed new gravity sewer mains and manholes (in relocated areas) west of Markleeville Creek.
2. Connect and activate new gravity sewer mains west of Markleeville Creek.
3. Begin mass grading for floodway restoration work
4. Construct new sewer pipe undercrossing at Markleeville Creek and connect to new sewer system infrastructure.
5. Abandon the sewer pipe undercrossing at Markleeville Creek and all other sewer lines with a cover greater than 3 feet. Remove all other sewer infrastructure.
6. Complete access road improvements and crossing over Millberry Creek.

2.4.1.5 Alternate Sewer Project Completion

In the event that the floodplain restoration is not funded for implementation within five years, an alternate completion of the sewer system project would occur.

1. Raise existing sewer manhole lids within project area to elevation above 100-year flood event.
2. Secure facilities with lockable lids and access hatches.

2.5 Construction Activities

At this time, it is uncertain whether the Project will be implemented as one, two or more publicly bid contracts. The construction funding sources may dictate which elements would be contracted by the County and/or MPUD. The most likely construction scenario is two construction projects (multiple phase)

that are led by the County but overseen by both the County and MPUD. For worst case impact analysis of some topics, construction carried out in multiple or delayed phases is assumed.

The following discussion of construction activities includes information that would be common to all phases of construction and all elements of the Project, along with particular variations or options that would be expected.

2.5.1 Personnel and Equipment

2.5.2 Construction Personnel and Employee Vehicles

Sewer System:

- 3 to 5 construction personnel (2 – 3 vehicles)
- 1 construction supervisor (1 vehicle)
- 2 electrical/mechanical personnel (1 vehicle)
- 1 inspector (1 vehicle)

Floodplain Restoration

- 4 to 6 construction personnel (3-5 vehicles)
- 1 construction supervisor (1 vehicle)
- 1 electrical/mechanical personnel (1 vehicle)
- 1 inspector (1 vehicle)

Public Access

- 4 to 6 construction personnel (3-5 vehicles)
- 1 construction supervisor (1 vehicle)
- 1 electrical/mechanical personnel (1 vehicle)
- 1 inspector (1 vehicle)

2.5.3 Heavy Equipment

Sewer System:

- Excavator (1) for sewer mains and manholes – duration of sewer improvements
- Large Bore Drill Rig (1) for pump station structure – 1 week
- Dump truck (20 trips) for select backfill material and off-haul/disposal
- Materials delivery flatbed (4 trips)

Floodplain Restoration

- Excavator (1) for grading and channel construction on Millberry – duration of Restoration
- Front end Loader for moving materials – duration of Restoration
- Backhoe for re-vegetation of the site – 4 weeks
- Dump trucks (2) for moving excavated materials on and off site
- Materials delivery flatbed (4 trips)

Public Access

- > Excavator (1) For grading of parking lot and trail features – duration of improvements
- > Dump truck (10 trips) for asphalt, select backfill material and off-haul/disposal
- > Asphalt Paver for parking lot and trail – duration 4 days

2.5.4 Duration

The estimated duration for each major element is provided below. It is possible that construction of each element could be concurrent or partially overlapping.

Sewer System – 16 weeks

Floodplain Restoration - 8 weeks

Public Access – 8 weeks

2.5.5 Schedule

The active construction would be scheduled to minimize disruption to the community's summer tourism activities, limit the quantity of streamflow to divert and manage, while still holding the risk of rainstorm runoff low.

Normal work hours would be 7 a.m. to 7 p.m. Monday through Friday. No nighttime or weekend work would be authorized.

2.5.6 Access, Traffic, Staging, Storage

The Contractor shall acquire and move all equipment and materials to the site, provide a field office, install project signs, temporary Best Management Practices (BMPs) and fencing.

The primary access points shall include the existing entry points from Hwy 89 and the existing MPUD access road (for the sewer system improvements, only). Temporary access within the site will be confined to the areas inside the grading disturbance limits whose final grade and treatment will be per final grading and re-vegetation plans (see Appendix C).

The Contractor shall provide traffic control in compliance with Caltrans and any other agencies with jurisdiction over the proposed routes for delivery and removal of materials from the site. Traffic control and maintenance of traffic at the site will be ensured by the Contractor for the duration of the project, consistent with and approved traffic control plan. Additionally, the Contractor shall provide safety notifications to the Sherriff, Fire, Ambulance and Public Works and comply with required safety measures. No road or street shall be closed to the public except with the permission of the Owner and proper governmental authority.

All construction staging areas on-site will be as designated on the plans and shall not occur in the right-of-way. Any other on- or off-site staging and temporary storage locations would require approval from property owners. All staging and storage areas shall be located on previously disturbed land or paved surfaces, and shall be fitted with temporary BMPs, including construction limit fencing.

2.5.7 Utilities and Services

Fire hydrants on or adjacent to the site shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor to insure the use of any sidewalks and private and public driveways, and the proper functioning of all gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses.

Existing surface water drainage facilities and underground and overhead utilities, including gas, sewer, water, power and telephone lines, lying within the limits of work, or that will be affected by construction,

shall be maintained in operation and be protected from any damage, unless such structures are noted for removal on the improvement plans. The Contractor shall coordinate construction measures with the owner of the utility, or other proper authority.

2.5.8 Vegetation Handling

2.5.9 Vegetation Protection/Avoidance

No trees, logs, shrubs, brush or woody debris shall be removed from the site, including the creek, without being so indicated on the plans or marked in the field by the Engineer. All trees to be protected in-situ shall be clearly marked with limit fencing provided along their drip line. All trees greater than 6 inch (breast height diameter, or (DBH)) to be avoided, but that may require possible disturbance within their drip line, would be provided from injury by trunk protection. All shrubs and existing wetland vegetation to be protected in-situ shall be clearly marked for avoidance with limit fencing.

2.5.10 Vegetation Salvage for Reuse

Trees, logs, shrubs, brush or woody debris to be salvaged as marked on the plans shall be removed and reused on site as part according to the plans and specifications.

No intact wetland sod or other suitable native organic materials (e.g., living willows, alders) shall be removed from the site, including the creek, without being so indicated on the plans or marked in the field by the Engineer. No uncontaminated topsoil shall be removed from the site, including the creek, without being so indicated on the plans or marked in the field by the Engineer. Living vegetation, sod, and topsoil to be salvaged shall be sorted, stored on-site, and reused according to the plans and specifications to ensure the greatest probability of successful re-establishment.

2.5.11 Vegetation Removal

Trees, logs, shrubs, brush, woody debris or stumps to be removed from the site shall be removed completely, aside from those deemed suitable for use on the project as wood chip mulch by the Engineer.

2.5.12 Noxious Weed Measures

Weed infestations identified by a qualified vegetation specialist before project implementation will be hand treated or flagged and avoided, depending on the species present and project constraints. If ground disturbance is necessary within the infested area, this soil will not be reused on site and would be labeled as contaminated and shipped to a licensed landfill.

To minimize the risk of introducing noxious weeds several precautions shall be taken, including: off-road equipment and vehicles will be cleaned of attached mud, dirt, and plant before enter the Project site; staging areas shall not be in weed-infested areas; imported rock, gravel, soils, fill, mulch, and seed shall be weed-free; ground disturbance shall be limited to the project disturbance limits; and, the re-vegetation shall encompass all disturbed and barren ground.

2.5.13 Rock and Soil Handling

No native rock (boulder, cobble, gravel or sand) shall be removed from the site, including the creek, without being so indicated on the plans or marked in the field by the Engineer. All native rock to be reused on the site would be sorted to meet specifications for size classifications and distributed according to the plans and specifications.

All excavation and grading activities would incorporate on-site inspection by a qualified specialist to identify soils suitable for reuse and to conduct an approved soil sampling and testing plan that can determine contamination that would require special handling or disposal.

2.5.14 Abandonment-in-Place of Selected Infrastructure

The sewer improvement element of the project would abandon certain segments of the existing buried sewer infrastructure in place, using measures consistent with federal and state regulations. To facilitate the long-term geomorphic processes and ecological health of the floodplain soils and re-vegetation effort without risks to erosion, sedimentation or water quality, no infrastructure that within two (2) feet of the finished grade would be abandoned in place outside the existing Markleeville Creek banks. The existing 8-inch steel (encased in concrete) sewer line crossing under Markleeville Creek would be abandoned in place to minimize disturbance within the existing creek flow line (see Appendix B).

2.5.15 Existing Infrastructure and Materials

Some existing infrastructure and materials would be removed during the sewer improvement phase while others would be removed during the restoration phase. The following descriptions are generalized for either.

The portions of the existing sewer system that will not be abandoned in place would be removed completely and properly disposed of off-site, including any special disposal measures for the asbestos-lined concrete pipes.

Based on the site history, it is possible that some remnant water supply, stormwater, septic, or other infrastructure could be present within the fill material and excavation limits. The construction specifications would include measures to inspect and identify such materials for removal and off-site disposal.

Based on the site history, it is possible that some of the soil and fill materials within the excavation limits may have contamination that would render them unsuitable for reuse on site, and/or could require special handling and disposal.

All excavation and grading activities would incorporate on-site inspection by a qualified specialist to identify soils suitable for reuse and to conduct an approved soil sampling and testing plan that can determine contamination that would require special handling or disposal.

The existing wooden pedestrian bridge would be removed completely and properly disposed of off-site.

None of the existing rock walls within the Caltrans right-of-way would be removed.

The existing floodwalls along Markleeville creek that would be removed include sections of mixed construction methods and materials. The portions of the floodwall that are dominated by concrete would be removed completely and properly disposed of off-site. The portions that are ‘rock walls’, comprised of cobble and mortar, as identified on the plans or by the Engineer, would be dismantled carefully to maintain sections to the degree possible and to salvage cobble material for reuse. The salvaged sections and rock material would be stored in the designated long-term storage location (adjacent to the reserved public restroom pad) for future reuse as part of interpretive and/or decorative features.

The existing rockwall along the access driveway includes a combination of concrete and rock and mortar sections and would be removed completely and properly disposed of off-site.

2.5.16 Water Quality Protection

Water quality protection during active construction and through the re-vegetation period would be required to ensure stormwater generated on-site and runoff that would travel to and/or through the site, including any stockpile and storage areas can be accommodated without risk to the receiving waters.

The specific temporary measures, locations, and the duration of time that they will be required would vary depending upon whether all elements of the project are constructed in a single season, sequential seasons, or during discrete implementation years. For example, temporary water quality protection for the sewer modifications would have a different spatial extent, dewatering and diversion needs, and potential

monitoring locations if the sewer modifications would be implemented more than one season prior to the restoration elements. Additionally, long-term BMPs would be required of the sewer modification construction to ensure water quality protection if the restoration element was not anticipated to be constructed within two or more growing seasons.

In all cases, the active construction would be performed in conformance with an approved Storm Water Pollution and Prevention Plan (SWPPP). The Storm Water Pollution and Prevention Plan shall include, but is not limited to:

> Descriptions of BMP to be implemented

> Dewatering and diversion requirements

> Site-specific diagrams indicating proposed locations of erosion control devices

> Provisions for installing, maintaining, removing, and disposing of erosion control devices.

While construction would be scheduled during a low flow time of year to minimize the potential for saturated soils and shallow groundwater, it is possible that subsurface flow would be intercepted. This would require implementation of an approved dewatering plan including proper pre-treatment of any pumped water prior to discharge to receiving waters.

2.5.17 Air Quality Protection

Air quality protection during Project construction would be required to ensure particulate matter, i.e. fugitive dust, emissions would be limited. The following fugitive dust control measures as outlined in the Great Basin Unified Air Pollution Control District's Rule 401 will be implemented during construction.

A person shall take reasonable precautions to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the property from which the emission originates. Reasonable precautions include, but are not limited to:

> Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

> Application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts;

> Installation and use of hoods, fans, and fabric filters, to enclose and vent the handling of dusty materials. Adequate contaminant methods shall be employed during such handling operations;

> Use of water, chemicals, chuting, venting, or other precautions to prevent particulate matter from becoming airborne in handling dusty materials to open stockpiles and mobile equipment; and

> Maintenance of roadways in a clean condition.

2.5.18 Noise Restrictions

Noise control measures consisted with the Alpine County Code section 18.68.090 would be required on the project. The following measures will be incorporated in the construction specifications to reduce noise generation:

> Noise-generating construction activities will be restricted to Monday through Friday from 7 a.m. to 7 p.m.

> All construction equipment will have sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

> Equipment idling prohibited when equipment is not in use.

2.5.19 Aquatic Resources Protection

While construction would be scheduled during a low flow period to minimize the quantity of natural streamflow to deal with, an aquatic resource rescue and relocation plan would be required to isolate any fish or other aquatic resources from the active construction areas. Depending on the particular runoff conditions during construction, a rescue and relocation plan may be needed on Millberry Creek as well as on Markleeville Creek.

2.5.20 Cultural Resource and Archaeological Protection

Since the Project will include subsurface excavation that could disturb previously unknown historic or archaeological resources and the site is adjacent to the National Register-listed Alpine County Courthouse, several mitigation measures shall be required to protect cultural and archaeological resources during construction, as described in Chapter 3, below.

2.6 Post-Construction Activities

2.6.1 Contractor Obligations

The Contractor(s) would be obligated to provide as-built records for sewer infrastructure installed as part of this project.

The Contractor(s) would be obligated to provide As-built records on grading and floodplain restoration (surveyed in post-construction) to reflect any changes during construction from design.

Specifically, the re-vegetation work, to be conducted and/or overseen by a licensed Landscape Contractor must be maintained for two years to ensure proper establishment success, and to perform any required supplemental or re-treatments to meet re-vegetation performance requirements and release the required ‘maintenance bond.

2.6.2 Permit and CEQA Compliance

Alpine County would implement CEQA mitigation monitoring and reporting and oversee compliance with permit conditions (which would be primarily the responsibility of the contractors and MPUD for the various construction elements).

2.6.3 Sewer System Monitoring and Maintenance

The MPUD would perform routine and any emergency inspections and repairs of the sewer system infrastructure, consistent with their normal operating procedures and governing regulations.

2.6.4 Long-Term Operations & Maintenance/Adaptive Management

Alpine County and the AWG will collaborate to provide the long-term operation, maintenance and management of the site. AWG watershed volunteers have been, and will continue to be, a key element in this process. Volunteers will be involved in an annual work day, Markleeville Creek Day, in order to maintain the restoration site. Volunteers will also contribute to the pre- and post-project site monitoring, including water quality testing, bioassessment sampling, and photo documentation. Site stewardship will also involve appropriate vegetation maintenance, including the removal of hazardous fuels and of invasive weeds. Other needs that will be addressed on an as-needed basis include re-vegetation, bank stabilization and trail maintenance.

2.7 Environmental Review and Potential Permits and Approvals

County CEQA review, County and MPUD project approvals, and all applicable permits shall be obtained before commencement of the proposed Project. Table 2.1 lists the anticipated reviews, permits, and approvals that would be necessary to implement the Project activities. Due to the uncertainty of project

phasing and how the project may be constructed as one or more publicly bid contracts, the actual approvals and permits could differ.

Table 2.1 Anticipated Permits and Approvals

Agency/Entity	Applicable Laws	Permit/Action
Alpine County	California Environmental Quality Act, Section 15000 et seq.	
California Department of Fish and Wildlife, Region	California Fish and Game Code	Streambed Alteration Agreement
California Department of Transportation		ROW Encroachment Permit
California Regional Water Quality Control Board (Lahontan Regional Board)	Clean Water Act, Section 401;	Water Quality Certification; NPDES Construction Activities Permit
California State Office of Historic Preservation	National Historic Preservation Act, Section 106	
Great Basin Unified Air Pollution Control District		Construction Permit
Markleeville Public Utility District	MPUD Ordinances	Inspection Agreement
Private Landowner - MPUD Easement Holder		Possible Modification to Easement
U.S. Army Corps of Engineers, Sacramento District	Clean Water Act, Section 404	

3 Environmental Checklist

As required under CEQA, this Initial Study/Mitigated Negative Declaration (IS/MND) includes a discussion of potential adverse environmental impacts associated with both construction and operation of the Proposed Project.

The following terminology is used in this document to describe the various levels of environmental impacts associated with the Project:

> A finding of *no impact* is identified if the analysis concludes that the proposed Project would not affect a particular environmental topical area in any way.

> An impact is considered *less than significant* if the analysis concludes that the proposed Project would not cause a substantial adverse change in the environment. This category is also used to identify factors that would experience beneficial change due to the Project.

> An impact is considered *less than significant with mitigation* if the analysis concludes that the proposed Project has the potential to cause a substantial adverse change in the environment, but the proposed Project includes measures to mitigate the potential impact to a less than significant level.

> An impact would be considered a *potentially significant* impact if the analysis concludes that the proposed Project could cause a significant environmental effect. Proposed Projects that potentially produce a significant impact(s) warrant the greater level of analysis and consideration provided by an Environmental Impact Report (EIR).

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

3.1 Aesthetics

3.1.1 Impact Analysis

Impacts related to the Proposed Project are identified in Table 3.1 with detailed discussion further below.

Table 3.1 CEQA Checklist for Aesthetic Resources

I. Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have substantially adverse effect on a scenic vista?	☐	☐	☐	☒

Table 3.1 CEQA Checklist for Aesthetic Resources

I. Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a) No Impact.

b) Less-than-Significant. The entire length of State of California highways within Alpine County are designated scenic highways. The Project will not degrade the existing visual character or quality of the scenic highway corridor, but would result in beneficial long-term improvement, since the existing barren potions of the site would be restored to have natural, native vegetation. This would be a less-than-significant impact.

c) Less-than-Significant. The Project would not degrade the existing visual character or quality of the site, but would result in beneficial long-term improvement, since the existing barren portions of the site would have natural, native vegetation restored. This would be a less-than-significant impact.

d) No Impact. The Project would not produce any long-term light or glare sources, and construction would be restricted to daylight hours, so no impact would occur.

3.2 Agriculture

3.2.1 Regulatory Setting

3.2.1.1 Federal Regulations

Farmland Protection Policy Act (FPPA)

The Farmland Protection Policy Act (FPPA) of 1981 [Sections 1539-1549 P.L. 97-98, Dec 22, 1981], requires the Secretary of Agriculture to establish and carry out a program to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland" [7 USC 4201-4209 & 7 USC 658].

3.2.1.2 State Regulations

Williamson Act

The California Land Conservation Act (Williamson Act) of 1965 is the state's principal policy for the "preservation of a maximum amount of the limited supply of agricultural land in the state" (Cal.

Government Code Section 51220(a)). The purpose of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act enables private landowners to contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. In return for this guarantee by landowners the government jurisdiction assesses taxes based on the agricultural value of the land rather than the market value, which typically results in a substantial reduction in property taxes. There is no Williamson Act land near the project site.

3.2.1.3 Local Regulations

Alpine County General Plan

The following general plan goal was considered when analyzing potential Project-related impacts to agricultural resources:

G. P. GOAL NO. 10 PRESERVE AND PROTECT AGRICULTURAL PRACTICES IN ALPINE COUNTY

3.2.2 Impact Analysis

Impacts related to the Proposed Project are identified in Table 3.2 with detailed discussion further below.

Table 3.2 CEQA Checklist for Agriculture Resources

II. Agricultural and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board.

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

Table 3.2 CEQA Checklist for Agriculture Resources

II. Agricultural and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use?	☐	☐	☐	☒

Discussion

a) No Impact. The Project would not 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 Department of Conservation (CDC), to non-agricultural use.

b) No Impact. The Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract Impact discussion.

c) No Impact. Impact The Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))

d) No Impact. The Project does not occur on forest lands, and no conversions of forest to non-forest uses would result.

e) No Impact. The Project would not involve any changes that could result in conversion of land uses.

3.3 Air Quality

3.3.1 Environmental Setting

3.3.1.1 Climate

The Project is located in Alpine County within the Great Basins Valleys Air Basin (GBVAB). The GBVAB is north of the Mojave Desert, south of the Great Basin between the Sierra Nevada to the west just along the eastern edge of California The GBVAB has substantial elevation changes with Death Valley, the lowest point in the Unities States at 282 feet below sea level, and Mount Whitney, the highest peak in the 48 states at 14,500 feet. These substantial elevation changes brings contrasting weather —Pacific Storms bring winter snow to mountain peaks in the Sierras which quickly changed to precipitation just to the east with more arid conditions to the south.

3.3.1.2 Existing Local Air Quality

Air quality in the GBVAB is managed by the Great Basin Unified Air Pollution Control District (GBUAPCD). The GBUAPCD was established in 1974 with a joint powers agreement between Alpine, Mono, and Inyo Counties. The GBUAPCD is responsible for enforcing Federal, State, and local air quality regulations and ensuring that the GBVAB is in compliance or moving towards compliance with the federal and state air quality standards.

Alpine County is either in "attainment" or "unclassified" for every state and federal air quality standard with the exception of Respirable Particulates (PM10) which is designated as "nonattainment" under the state standard (see Table 3.3 below). However, the "non-attainment" designation was made for the whole GBUAPCD area. As noted in the Alpine County General Plan, none of the test sites used to make this determination are located in Alpine County, where the Project is located. The predominant sources of PM10 pollution in Alpine County is from controlled burns and wildfires. Overall, due to the rural lifestyle, low population density, and limited industry, the County's air quality is generally good.

3.3.2 Regulatory Setting

3.3.2.1 Federal Regulations

Federal Clean Air Act

The Federal Clean Air Act (CAA) establishes the framework for modern air pollution control. The Act, enacted in 1970 and amended in 1990, directs the EPA to establish ambient air quality standards for six pollutants: ozone (O3), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO2), particulate matter (PM10, Fine Particulates (PM2.5)) and sulfur dioxide (SO2). These standards are divided into primary and secondary standards, the former are set to protect human health, the latter are set to protect environmental health, such as plant and animal life.

3.3.2.2 State Regulations

California Clean Air Act

The California CAA focuses on attainment of the California Ambient Air Quality Standards (CAAQS). These standards are more stringent than federal regulations with respect to certain Criteria Pollutants and averaging periods. Responsibility for monitoring the CAAQS is placed on the Air Resources Board (CARB) and local air pollution control districts. Table 3.3 describes Alpine County Area designations for State and National Ambient Air Quality.

Table 3.3 Alpine County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Unclassified	Unclassified/Attainment
PM10	Nonattainment1	Unclassified
PM2.5	Attainment	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassifiable/ Attainment
Nitrogen Dioxide	Attainment	Unclassifiable/ Attainment
Sulfur Dioxide	Attainment	Unclassifiable
Sulfates	Attainment	-
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	-

Table 3.3 Alpine County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Visibility Reducing Particles	Unclassified	-

Source: California Air Resources Board (CARB) 2011

1 The entire Great Basin Unified Air Pollution Control District was designated as non-attainment for the State standard for particle matter equal to or greater than 10 microns is size (PM10). None of the test sites used to determine this classification were located in Alpine County. Alpine County is considered in attainment of Federal Standards for this pollutant (Alpine County 2009).

3.3.2.3 Regional/Local Regulations

Alpine County General Plan

The following goals and policies of the County General Plan were considered in evaluating the potential Project effects:

GOAL NO. 3 MEET OR EXCEED FEDERAL AND STATE AIR QUALITY REGULATIONS

POLICY NO. 3 The County should continue to consult with the Great Basin Unified Air Pollution Control District regarding any proposed project which has the potential to adversely affect ambient air quality.

3.3.3 Impact Analysis

Impacts related to the Proposed Project are identified in Table 3.4 with detailed discussion further below.

Table 3.4 CEQA Checklist for Air Quality

III. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations:

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion

The Project's predominant criteria air pollutant emissions are associated with construction activities, including exhaust emissions from diesel and gasoline powered construction equipment use, including worker vehicle trips, and earthwork activities, e.g., grading, trenching, and cut and fill activities. Construction equipment generates exhaust emissions that include oxides of nitrogen (NOx) and particulate matter (PM). Earthwork activities generate PM (PM10 and PM 2.5) emissions as a result of ground disturbance. Overall, the Project's construction generated emissions would be short-term and intermittently generated.

The only known operational emissions from this project are indirect and associated with the replacement of the pump station. The pump station will be electrically powered and will tie into the local utilities power supply. The replacement of the pump station will be in-kind and will not increase power demand; there will be no increase in indirect pollutant emissions from Project operations. As a result, only construction related emissions impacts will be analyzed below.

a) **No Impact**. Four air quality plans have been developed for specific locations within the GBUAPCD boundaries. However, none of the plans include Alpine County. As a result, and given that the Project's predominant emissions are associated with short-term construction activities, the Project would not conflict with or obstruct implementation of any air quality plans. No impact would occur.

b) **Less-than-Significant with Mitigation**. As mentioned in Section 3.3.1.2 above, the entire area within the boundary of the GBUAPCD, including Alpine County has been designated non-attainment for PM10 under the state air quality standard. However, none of the test sites used to make that determination are located in Alpine County. Alpine County is considered in attainment of the federal air quality standard for PM10 t. The Project's construction activities will generate short-term, intermittent PM10 emissions. To control emissions of PM10 during construction, air quality protections will be implemented as described in Section 2.5.17. With the implementation of these air quality protection measures the Project would not result in any permanent air quality changes or contribute to any existing or projected air quality violations, and risks of potential violations of air quality standards during active construction would be less-than-significant with mitigation.

c) **No Impact**. As previously discussed, the Project would generate short-term emissions from construction activities, including emissions of PM 10 which is currently designated "non-attainment" under the state air quality standard. To control PM emissions air quality protection measures (details identified in Section 2.5.17) will be implemented during construction. Given that the Project would predominantly generate short-term, intermittent criteria pollutant emissions, including PM10 and air quality protection measures would be implemented to control PM, the Project would not contribute to any cumulatively considerable net increase in any criteria pollutants for which this region is in non-attainment status, i.e., PM10. No impact would occur.

d) **No Impact**. Sensitive receptors are places where the elderly, children, and people that are more susceptible to the adverse effects of air pollutants are housed. Sensitive receptors include schools, daycare facilities, convalescent homes, and hospitals. There are no known sensitive receptors nearby the proposed Project site. Furthermore, the Project would not generate permanent, long-term substantial pollutant concentrations. No impact would occur.

e) **Less-than-Significant**. The Project includes modifications to the existing sewer system infrastructure with one of the objectives being to reduce the potential for sewer system overflows that can create objectionable or offensive odors. Overall, the Project would be a net benefit. The Project would not create any permanent sources of odors, and any possible odors associated with the excavation and removal of sewer system infrastructure to be decommissioned as part of the project would be transient and localized to the site, without the possibility to affect substantial numbers of people; less than significant impacts would occur.

3.4 Biological Resources

3.4.1 Environmental Setting

Information on the biological resources described in this section is based on results of recent field surveys and earlier reports on the Project site, including RCI (2007) and California Department of Fish and Game (2004). Field surveys were conducted to assess general site conditions and identify areas of potential value for biological resources in August and October 2006 (RCI 2007) and in January 2012 by Cardno ENTRIX; and to perform a wetland delineation in May 2012 by Cardno ENTRIX. The following sources were also reviewed: the California Department of Fish and Wildlife California Natural Diversity Data Base (CNDDB) (CDFW 2013); data from the United States Fish and Wildlife Service (USFWS) (USFWS 2013a) and California native Plant Society (CNPS) species lists (CNPS 2013); CalFlora non-native plant database (CalFlora 2013); California Invasive Plant Council invasive plant population database (Cal-IPC 2013); and known critical habitat maps (USFWS 2013b).

Vegetation communities were mapped based on field surveys conducted in January 2012 and May 2012 by Cardno ENTRIX. Information on dominant species present within the Project area, riparian/wetland habitat condition, age class structure of existing riparian vegetation, presence of special-status plant and wildlife species, and presence of noxious/invasive species were documented during the surveys.

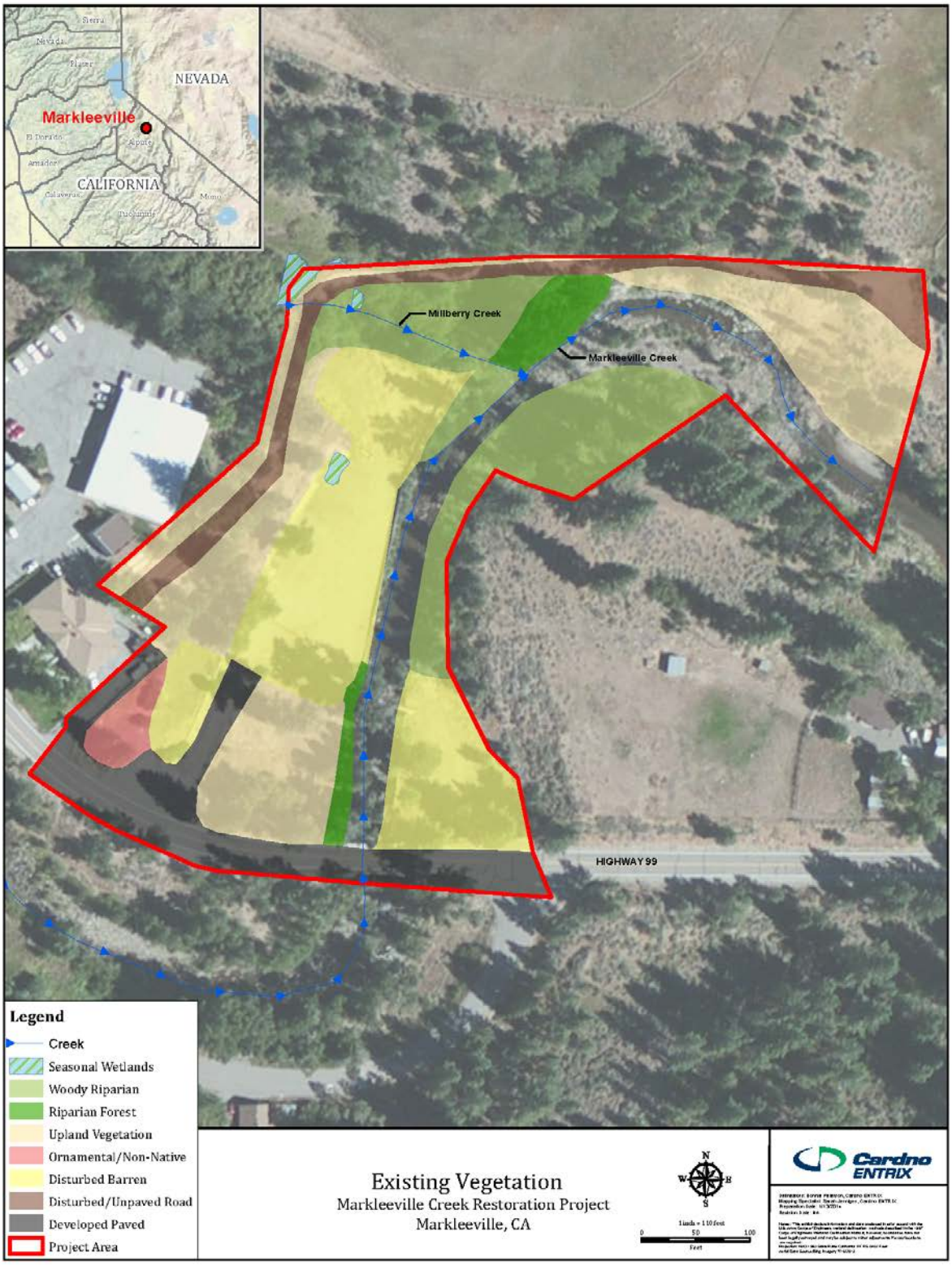
A wetland delineation was conducted in May 2012 by Cardno ENTRIX (Appendix E). Vegetation community classification was based on A Manual of California Vegetation, Second Edition (Sawyer, et al., 2009). Habitat for common and special-status wildlife species within these vegetation communities was based on a review of A Guide to Habitat Classification of California (Mayer and Laudenslayer, 1988).

Existing information on noxious weeds and invasive plant species known to occur or potentially occurring in the vicinity of the Project was obtained from the CalFlora (CalFlora 2013) and Cal-IPC (Cal-IPC 2013) databases. These sources were reviewed to identify noxious weeds and non-native species of potential concern within the Project area prior to conducting the 2012 spring field surveys. General locations of noxious and invasive weeds encountered during field surveys were mapped in the field and information on the population documented (density, general location) (Appendix F).

3.4.1.1 Vegetation Communities

The Project is located in the California Floristic Province in the Northern High Sierra Nevada subregion (Hickman 1993). General vegetation communities found on the site include riparian and wetland vegetation communities, upland communities, disturbed areas, and developed areas. The majority of the proposed Project site subject to the proposed improvements is compacted gravel and dirt with minimal vegetation. The transition between the uplands and riparian/wetland is usually abrupt and distinct. Disturbed areas included barren fill areas, unpaved roads, and paved roads. A general description of the upland and disturbed communities follows. Riparian and wetland habitats re described under items (c) and (d), below. The vegetation communities, as well as the disturbed areas within the Project site are shown in Figure 3.1

Figure 3.1 Existing Vegetation



Upland Vegetation Communities and Habitat

Vegetation established in the higher elevations in the Project site is a mix of upland trees, dominated by Jeffrey pine (*Pinus jeffreyi*) and shrubs, including mountain big sagebrush (*Artemisia tridentata*).

> Big Sagebrush *Shrubland* (approximately 1.23 acres) (*Artemesia tridentata shrubland* alliance [Sawyer, et al., 2009]; Sagebrush habitat [Mayer and Laudenslayer, 1988]) occurs in the upland areas in the Project site. The community is a mix of upland trees (primarily Jeffrey pine), and shrub species, including big sagebrush (Artemisia tridentata), Jeffrey pine (*Pinus jeffreyi*), bitterbrush (*Purshia tridentata*), and Woods' Rose (*Rosa woodsii*). Quaking aspen (*Populus tremuloides*) also occur as part of the tree canopy in scattered locations. The understory is fairly sparse, with a mix of upland shrubs and grasses.

> Non-native Vegetation and Disturbed Areas

> Ornamental Trees/ Non-native Annual Grassland (0.09 acres) occur near the courthouse building. This area was historically planted and maintained with ornamental plants. Maintenance has been minimal in recent years and the area is now dominated by various non-native annual grasses. Non-native annual grassland habitats are open grasslands composed primarily of annual plant species.

> Disturbed Barren Areas (1.24 acres) occur within the Project site. Barren habitat is defined by the absence of vegetation. These areas have less than two percent total vegetation cover by herbaceous vegetation and less than ten percent cover by tree or shrub species. They include barren fill and paved and unpaved roads. The paved areas are located in the southwest portion of the Project area near Highway 89. The unpaved road (the MPUD road) extends from the south parking lot of the County Courthouse and runs along the south-north west boundary of the Project area. The floodplain west of Markleeville Creek is primarily disturbed, barren fill. A gravel lot (disturbed, barren fill) also occurs immediately downstream of the Highway 89 bridge on the east side of the creek.

Table 3.5 Plant Species Observed in the Project Area during Field Surveys

Scientific Name	Common Name	National Wetland Indicator Status
Trees		
Alnus sp.	Alder	FACW
Populus trichocarpa	Black Cottonwood	FAC
Pinus Jeffreyi	Jeffery Pine	FAC
Salix exigua	Narrow Leaved Willow	FACW
Salix lutea	Yellow Willow	OBL
Salix spp.		--
Shrubs		
Artemisia campestris	Field Sagewort	UPL
Artemisia tridentata	Basin Big Sage	UPL
Rosa woodsii	Wood's Rose	FACU
Chrysothamnus sp.		--
Purshia tridentata	Antelope bitterbrush	UPL
Forbs		
Achiellea millefolium	Yarrow	FACU

Scientific Name	Common Name	National Wetland Indicator Status
Agoseris	Dandelion	--
Agoseris heterophylla	Annual mountain dandelion	UPL
Bulbostylis capillaris	Threadleaf beakseed	FAC
Cardamine spp.	Bittercress	--
Cirsium sp.	thistle	--
Collinsia parviflora	Blue-eyed Mary	UPL
Descurainia pinnata	Western tansy mustard	UPL
Epilobium spp.		--
Erigeron breweri	Brewer's Fleabane	UPL
Hosackia spp.		--
Lathyrus latifolius	Sweet pea	UPL
Lepidium campestre	Field pepperweed	UPL
Lotus spp		--
Melilotus spp.	White Sweetclover	--
Polygonum spp.		--
Ranunculus testiculatus	Tubercled crowfoot	UPL
Solidago	Goldenrod	--
Vicia villosa	Hairy vetch	UPL
Grasses and Grasslikes		
Agrostis gigantea Roth	Redtop	FAC
Agrostis variabilis	Mountain bent grass	UPL
Bromus carinatus	California brome	UPL
Bromus tectorum	Cheatgrass	UPL
Bulbostylis capillaris	Threadleaf beakseed	FAC
Carex douglasii	Douglas' sedge	FAC
Carex leptopoda	Slender-footed sedge	OBL
Carex nebrascensis	Nebraska Sedge	OBL
Carex praegracilis	Clustered field sedge	FACW
Carex sp.	sedge	--
Cyperus sp.	sedge	--
Deschampsia sp.	Hairgrass	--
Eleocharis acicularis	Needle spikerush	UPL
Elymus glaucus ssp. glacus	Western rye grass	FACU
Elymus sp.		--
Elymus trachyaulus	Slender wheatgrass	FAC
Equisetum arvense	Common horsetail	FAC

Scientific Name	Common Name	National Wetland Indicator Status
Juncus balticus	Baltic Rush	OBL
Juncus bufonius	Common toad rush	FACW
Medicago lupulina	Black medick	FACU
Poa bulbosa	Bulbous blue grass	UPL
Scirpus microcarpus	Mountain bog bulrush	OBL
Scirpus spp.	Bulrush	--

-- Not enough information to determine native or wetland indicator status since plant was not identified to specie level.

Wetland Indicator Status:
UPL – Upland
FACU – Facultative Upland
FAC – Facultative
FACW – Facultative Wetland

OBL - Obligate

3.4.1.2 Aquatic Habitat

The Project Area includes aquatic habitat of the stream channel(s) of Markleeville and Millberry Creeks, the instream cover, and disconnected/unavailable floodplain habitat.

The stream channel includes the area of Markleeville Creek, a perennial stream with varied habitat types and quality over the full range of flows. Stream channel habitat also includes the area of Millberry Creek, an intermittent stream that lacks habitat in dry seasons and between storms in dry years.

The floodplain area above the banks of Markleeville Creek is not accessible as aquatic habitat during typical seasonal peak flows or small (5-year) flood events due to the presence of floodwalls.

In stream cover includes a variety of stream features that may provide protected habitat for aquatic organisms. Common types of in stream cover include boulders, overhanging vegetation, emergent vegetation, and woody debris.

3.4.2 Regulatory Setting

3.4.2.1 Federal Regulations

Federal Endangered Species Act (ESA)

The US Fish and Wildlife Service (USFWS) has jurisdiction over candidate species, and species proposed or listed as threatened or endangered under the ESA. Enacted in 1973, the ESA prohibits the "take" of, possession, sale or transport of proposed, candidate, or listed species. Take is broadly defined as "…the action of harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct." Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from the National Marine Fisheries Service (NMFS) and/or USFWS through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of ESA, depending on whether the federal government is involved in permitting or funding the Project. The Section 7 authorization process is used to determine if a proposed project with a federal nexus, such as the Project, would jeopardize the continued existence of a listed

species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitat in nonfederal activities.

Section 404 of the Clean Water Act (CWA)

The US Army Corps of Engineers (USACE) and the US Environmental Protection Agency (EPA) regulate the discharge of dredge or fill material into waters of the United States (US) under Section 404 of the CWA ("waters of the United States" include wetlands and lakes, rivers, streams, and their tributaries). Wetlands are defined for regulatory purposes as areas "…inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated solid conditions" (333 CFR 328.3, 40 CFR 230.3). Project proponents must obtain a permit from USACE for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed action.

Clean Water Act, Section 401 (Regional Water Quality Control Board)

CWA Section 401 requires every applicant seeking a federal permit or license for any activity that might result in a discharge to a water of the United States to obtain water quality certification. This certification is issued by the State and is intended to verify that the proposed activity will comply with State water quality standards. The Project contains waters of the US that will be filled and are therefore subject to Section 401 of the CWA Section 401 Water Quality Certification will be required. The Lahontan Regional Water Quality Control Board is a responsible agency under CEQA and will rely on this CEQA document in approving the CWA 401 Certification.

Executive Order 11990: Protection of Wetlands

Executive Order 11990, signed May 24, 1997, directs federal agencies to refrain from assisting in or giving financial support to proposed projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or deregulation of wetlands. A proposed project that encroaches on wetlands may not be undertaken unless the agency has determined that (1) there are no practicable alternatives to construction, (2) the proposed project includes all practicable measures to minimize harm to wetlands affected, and (3) the impact will be minor.

Migratory Bird Treaty Act and Bald and Gold Eagle Protection Act

The Migratory Bird Treaty Act (MBTA, 16 United States Code Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct take. The MBTA protects migrant bird species from take through setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Gold Eagle Protection Act prohibits the take or commerce of any part of these species. The USFWS administers both Acts and reviews federal agency actions, such as funding of proposed projects that may affect species protected by the Acts.

3.4.2.2 State Regulations

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) is responsible for administering the California Endangered Species Act (CESA) Section 2080 of the California Fish and Game Code (FGC) prohibits "take" of any species that the Fish and Game Commission determines to be an endangered species or a threatened species. However, CESA does allow for take that is incidental to otherwise lawful development projects.

Sections 2081(b) and (c) of CESA allow CDFW to issue an incidental take permit for a State-listed threatened and endangered species only if specific criteria are met. These criteria are reiterated in Title 14 of CCR, Sections 783.4(a) and (b):

- The authorized take is incidental to an otherwise lawful activity
- The effects of the authorized take are minimized and fully mitigated
- The measures required to minimize and fully mitigate the effects of the authorized take:
- Are roughly proportional in extent to the effect of the taking on the species
- Maintain the applicant's objectives to the greatest extent possible
- Are capable of successful implementation
- Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures
- Issuance of the permit will not jeopardize the continued existence of a state-listed species

2081 incidental take permits cannot be issued for species that are "fully protected" under State law. Several State-listed species are also listed as threatened or endangered under the Federal ESA. Section 2080.1 allows CDFW to make a determination that a Federal incidental take authorization for a species also listed by the State is consistent with CESA. Section 2080.1 consistency cannot be issued for federally listed species that are "fully protected" under State law.

Section 1602 of the California Fish and Game Code: Lake or Streambed Alteration Agreement

Section 1602 of the FGC provides the mechanism through which the State can ensure the protection of its waters during construction in or near lakes and streams. This section of the code requires notification of activity that might affect lakes and streams and identifies the process through which a project proponent can come to an agreement with the State regarding the protection of resources, both during and following construction.

CEQA Guidelines Section 15380

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a "candidate species" that has not yet been listed by the USFWS or CDFW. CEQA, therefore, enables an agency to protect a species from significant project impacts until the respective government agencies have an opportunity to list the species as protected, if warranted.

In general, plants appearing on the California Native Plant Society (CNPS) List 1 (plants believed to be extant, and rare, threatened or endangered plants in California) and List 2 (rare, threatened, or endangered plants in California but more numerous elsewhere) are considered to meet CEQA's Section 15380 criteria. Impacts to these species would therefore be considered "significant," requiring mitigation.

Fish and Game Code – Sections 3503, 3503.5, 3513

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act. These regulations could require that elements of the Proposed Project (particularly vegetation removal or construction near nest trees) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

3.4.2.2.1 Local Regulations

Alpine County General Plan

Below are the key Alpine County General Plan Goals and Policies relative to biological resources:

Alpine County's General Plan (2009) includes specific goals, objectives, and policies pertaining to the preservation and protection of wetland areas, including riparian habitats and sensitive plant and wildlife species (Alpine County 2009), as follows:

G. P. GOAL NO. 8 PRESERVE AND PROTECT WETLAND AREAS

POLICY NO. 8
Minimize development in or conversion of wetlands.

IMPLEMENTATION MEASURE: Require the submittal of detailed wetland delineation, performed by a qualified biologist, for development projects proposed in or near suspected wetland areas.

IMPLEMENTATION MEASURE: Require proponents of development projects in wetland areas to mitigate impacts on wetlands such that, at minimum, there will be no net loss of either wetland habitat values or acreage.

IMPLEMENTATION MEASURE: Require U.S. Army Corps review prior to County approval of projects impacting wetlands.

IMPLEMENTATION MEASURE: No use that would involve significant vegetation removal or earth disturbance should be allowed in stream environment designated areas. Due to the generalized standard used to delineate stream environments, variances in the above standards should be allowed where it can be proven projects will not generate unmitigable significant adverse effects upon the following features: groundwater recharge, surface water quality, aquatic or riparian habitat, wetlands, archaeological sites, aesthetics, and cliff or stream bank erosion. The County may approve projects that would impact designated stream environment areas where it is found that negative effects upon any of the listed parameters are outweighed by public need or concern.

G. P. GOAL NO. 9 PROTECT AND INCREASE THE POPULATIONS OF THREATENED, RARE, OR ENDANGERED PLANT SPECIES

POLICY NO. 9
Areas containing or suspected of containing rare, endangered, or threatened plants should not be disturbed without providing the California Department of Fish and Game a reasonable period of time within which to investigate, remove, or otherwise protect them.

G. P. GOAL NO. 13 PROTECT THE CRITICAL HABITAT OF ALL FEDERAL OR STATE LISTED SENSITIVE, THREATENED, RARE, OR ENDANGERED WILDLIFE

POLICY NO. 13
The County should provide the California Department of Fish and Game notice of all development that may encroach upon the critical habitat of sensitive, threatened, rare or endangered species with reasonable time for the Department to respond with recommendations for project alternatives and mitigation measures.

3.4.3 Impact Analysis

Table 3.6 CEQA Checklist for Biological Resources

IV. Biological Resources

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

Discussion

a) Less-than-Significant with Mitigation. A special-status plant species is defined as any species that is granted status by a federal, state, or local agency. Federally listed species are defined as those species granted status by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA) and include threatened (FT), endangered (FE), proposed threatened or endangered (FPT, FPE), candidate (FC), or listed species proposed for delisting (FPD); or by the USFS as a Forest Service Sensitive (FSS) species. State of California listed plant species, which are granted status by CDFW under the California Endangered Species Act (CESA), include rare (SR), threatened (ST), or endangered (SE) species. Under the California Environmental Quality Act (CEQA), special-status plants include species listed by CNPS as rare, threatened, or endangered in California (CNPS Lists 1B and 2) (CNPS 2013). In addition, this document includes raptor species protected under Section 3503.5 of the Fish and Game Code and bird species protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703–711).

A special-status wildlife species is defined in this document as any species that is granted status by a federal, state, or local agency. Federally listed species are those granted status by federal agencies as

FT, FE, FPT, FPE, FC, FPD, or FSS. Also included are those species listed by USFWS as Birds of Conservation Concern (BCC) which include "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" (USFWS 2008). State of California listed wildlife species are defined as those species granted status as ST, SE, California Fully Protected species (CFP), and species of special concern (CSC).

Information on special-status plant and wildlife species, including fish species, known to occur or potentially occurring in the vicinity of the Project were obtained from: the California Department of Fish and Wildlife California (CDFW) Natural Diversity Data Base (CNDDB); data from the United States Fish and Wildlife Service (USFWS); California Native Plant Society (CNPS) species lists (CNPS 2013); focused literature review; and known critical habitat maps (USFWS 2013b). These sources were reviewed to create a list of potential species that may occur within the Project vicinity Species that were determined as being unlikely to occur within the Project site were those beyond their known range or to for which there is low habitat suitability for reproduction, cover, and/or foraging. No critical habitat exists in the Project vicinity (USFWS 2013b)

No candidate, sensitive or special status terrestrial plant or wildlife species are known to occur within the Project site; with no records of candidate, sensitive or special status terrestrial plant or wildlife within the Project site (CDFW 2013). None were detected during surveys in the Project site.

One special-status plant species was initially identified as potentially occurring in the Project vicinity: Hall's meadow hawksbeard (*Crepis runcinata ssp. hallii*). However, this species is not expected to occur within the Project boundaries due to a lack of suitable habitat. See Table 3.7 for the list of the species initially identified as potentially occurring and rationale for determination of "not likely to occur".

Table 3.7 Listed and Candidate Special-Status Species Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Species Presence Onsite (Likely/ Possibly/ Unlikely)	Rationale
Plants					
Hall's meadow hawksbeard	*Crepis runcinata ssp. hallii*	CRPR 2B.1	Found in moist, alkaline valley bottoms at elevations between 375 – 2,100 feet (1230 – 6889 meters)	Unlikely	Located at Grover Hot Springs in a moist, alkaline meadow fed by the hot springs. Suitable habitat conditions not present in Project site.
Amphibians					
Yosemite toad	*Anaxyrus* (=*Bufo*) *canorus*	FC-T, SSC	Restricted to central high Sierra Nevada. Prefers mountain, alpine meadow, lodgepole pine, successional stages of mixed conifer, Jeffrey pine, red fir. Typically at elevations between 6,400 to 11,300 feet.	Unlikely	Suitable habitat not present at Project site.
Mountain yellow-legged frog	*Rana sierrae*	FC-E, SC-E	Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadows. Breeds in shallow water in low gradient perennial streams and lakes.	Unlikely	Suitable habitat not present at Project site and presence of predatory fish (trout) further reduces the likelihood of this species to being present.
Birds					
Great Gray Owl	*Strix nebulosa*	SE	Found in mixed conifer or red fir forest habitat, in or on edges of meadows. Requires large diameter snags in a forest with high canopy closure.	Unlikely	Suitable habitat not present at Project site.
Mammals					
Fisher – West Coast DPS	*Martes pennanti*	FC, SC-E	Typically found in intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. This species uses cavities, snags, logs and rocky areas for cover and denning. This species requires large areas of mature dense forest.	Unlikely	Suitable habitat not present at Project site.

Common Name	Scientific Name	Status	General Habitat Description	Species Presence Onsite (Likely/ Possibly/ Unlikely)	Rationale
Fish					
Lahontan cutthroat trout	*Oncorhynchus clarki henshawi*	FT	Historically in all accessible cold waters of the Lahontan Basin in a wide variety of water temps and conditions. This species cannot tolerate presence of other salmonids. Requires gravel riffles in streams for spawning.	Unlikely	Due to presence of introduced salmonids (rainbow trout, brown trout) the presence of this species is unlikely. They are known to occur upstream of Carson Falls on the East Fork Carson, some twenty miles upstream from the confluence of Markleeville Creek and have a low probability of occurrence in Markleeville Creek. CDFW surveys conducted in 1995 did not find this species (CDFW 2004).
Mountain sucker	*Catostomus platyrhynchus*	SSC	Restricted to the Lahontan drainage system and the North Fork of the Feather River. This species generally occupy pool-like habitats, abundance greatest in areas with dense cover.	Possibly	CDFW surveys in 1995 documented Mountain Suckers, however, follow-up surveys in 1998 did not find any (CDFW 2004)

Potential species search based on CNDDB and USFWS species lists for the Heenan Lake, Wolf Creek, Markleeville, Carson Pass, Pacific Valley, Ebbetts Pass, Carters Station, Freel Peak, and Woodfords quadrangles.

Abbreviations:

Federal:
FT: Federally listed as threatened

FC: Federal candidate

FC-T: Federal candidate – threatened

FC-E: Federal candidate – endangered

State:
SE: State listed as endangered

SC-E: State candidate – endangered

CRPR (California Rare Plant Rank) 2B.1: Seriously threatened in California, but are more common elsewhere.

SSC: CDFW Species of Special Concern

A large portion of the Project site is disturbed and barren, with a narrow riparian corridor along the stream margins. In general, the Project site is poor wildlife habitat. Limited wildlife habitat is present on the edges of the Project site where Jeffrey pines are present and in the riparian corridor along the stream margins.

Four special-status wildlife species were initially identified as potentially occurring within the Project vicinity: Yosemite toad (*Bufo canorus*), mountain yellow-legged frog (*Rana sierra*), great grey owl (*Strix nebulosa*), and fisher (*Martes pennant*). None of the species are expected to occur at the Project site due to the lack of suitable habitats present within the Project site and none were observed during field surveys. See Table 3.7 for the list of the species initially identified as potentially occurring and rationale for determination of "not likely to occur".

Trees and other vegetation within and adjacent to the Project site could provide potential nest sites for common raptors that could forage within the Project site. Migratory birds also forage and nest in a variety of habitats, including riparian corridors, and could occur within the Project site. The active nests of most bird species are protected by the Migratory Bird Treaty Act (MBTA) and Section 3503.5 of the Fish and Game Code.

Two special status fish species, Lahontan cutthroat trout (LCT) (*Oncorhynchus clarki henshawi*) and mountain sucker (*Catostomus platyrhynchus*) were identified with the potential to occur in the Project vicinity. The mountain sucker may possibly occur with within the Project site, and is described below. Lahontan cutthroat trout is unlikely to occur due to the presence of introduced rainbow and brown trout.

Mountain sucker is a California State species of special concern. Mountain suckers are a bottom-oriented omnivorous fish occurring at mid to high elevations throughout the western US. In the Carson River watershed they co-occur with the Tahoe sucker (*Catostomus tahoensis*) which is similar in appearance. Mountain suckers are known to occur in the East Fork Carson River watershed and have been collected from Markleeville Creek (NDEP 2007 and CDFW 2004a as cited in NDEP 2007). Mountain suckers undertake seasonal spawning migrations within stream systems in the spring and summer (Moyle 2002). Consequently mountain suckers may be permanently, seasonally, or occasionally present within the Project site.

Impact BIO-1

No special-status plants are likely to occur within the Project site; and none were observed during field surveys. One special-status plant occurred in the vicinity; but is not likely to occur within the Project site due to the absence of suitable habitat conditions. While it is unlikely that habitat conditions could change prior to implementation and allow establishment of any special status plants not yet documented on the site, the mitigation **BIO-1** would minimize the possibility of an impact to special status plants.

Mitigation Measure BIO-1 -Pre-construction plant survey within the project disturbance footprint shall be conducted a qualified biologist to identify any special status plants and create construction exclusion areas.

Impact BIO-2

No special-status terrestrial wildlife or amphibian species are likely to occur within the Project site, and none were observed during field surveys. While it is unlikely that any special status terrestrial wildlife or amphibian species would be present during construction, the mitigation **BIO-2** would minimize the possibility of an impact to special status wildlife.

Mitigation Measure BIO-2 - Pre-construction wildlife and amphibian surveys of the disturbance footprint would be conducted by qualified biologists to identify any special status wildlife and amphibian species present, designate exclusion zones, and/or perform removals.

Impact BIO-3

Construction of the restoration Project could temporarily disrupt avian species utilizing the Project site for nesting, shelter, and/or food sources. While birds likely would fly out of the site during grading and construction activities; nesting birds and their young may not be able to do so. Project activities occurring between the typical avian breeding/nesting season for migratory birds (typically March 1 through August 15 in the project region) could adversely affect nesting birds. In the long-term, restoration of the floodplain and riparian corridor will benefit avian species in by improving the quality and quantity of habitat conditions, including riparian habitat.

If construction occurs during the bird breeding/nesting season (typically March 1 through August 15 in the project region), pre-construction surveys will be conducted by a qualified biologist within two weeks prior to determine presence/absence of raptor and migratory bird nests. Surveys shall be conducted in the Project site and in accessible areas outside the Project site within 300 feet of construction activities. If no nests are found during the survey, no further mitigation will be required. If nests are found, mitigation measure **BIO-3** will be implemented.

Mitigation Measure BIO-3 - Impacts to active nests will be avoided by the establishment and maintenance of buffers around the nests. The appropriate size and shape of the buffers will be determined by a qualified biologist in consultation with the CDFW, and may vary depending on the nest location, nest stage, and construction activity. No project activity will occur within the buffer area until the biologist confirms that the nest is no longer active. Monitoring will be conducted to confirm that the Project activities are not resulting in detectable adverse effects to the active nests.

Impact BIO-4

One special status aquatic species has the potential to occur within the Project site. There is a potential for Project construction activities to impact such species that are present in the upstream areas of the East Fork Carson River system, if they were present at the time of implementation. To avoid the potential for Project construction to adversely affect aquatic special status, the project incorporates the following measures:

Project construction activities within the active stream channels would require dewatering and bypassing of flows around the in-channel work areas. The plans and specifications require that dewatering and bypassing be preceded by fish exclusion/fish rescue of all fish in the bypassed channel, accompanied by relocation to suitable downstream habitat. The fish rescue and relocation plan would be subject to CDFW and USFWS review and be conducted by qualified fish biologists, but some incidental injury or mortality of rescued fish may occur.

Impact BIO-5

The Project will generate beneficial improvements to special status species' habitat, a less-than-significant impact:

Beneficial impacts of the Project on aquatic habitat include expansion of floodplain area, decrease in bank erosion, and increase in instream cover.

The Project would increase active floodplain area. Floodplains provide important low-velocity aquatic habitats for aquatic species during high flow events. Floodplains double as productive areas for feeding by juvenile fishes.

The Project would decrease bank erosion. Bank erosion contributes fine sediment to the stream channel and may degrade food production and spawning habitat for fish species such as LCT and mountain sucker.

The Project would increase the amount of instream cover available to fishes and other aquatic organisms. Boulders, cobbles, and large woody debris would be utilized in the new channel design. These large items provide instream cover and may facilitate channel stability. The expansion of floodplain areas in the new channel design would promote the growth of riparian plant communities that provide emergent and overhanging vegetation.

Impact BIO-6

Two noxious or invasive weed species were encountered during the field surveys: (1) tubercled crowfoot (*Ranunculus testiculatus*), a non-native invasive weed species, was observed at a low density throughout the gravel parking lot; and, (2) cheatgrass (*Bromus tectorum*) (Cal-IPC inventory rating of high13) was observed at a low density through most of the project site and at moderate density along the MPUD access road (particularly along the northern side of the road). No noxious or invasive weeds were observed in the wetlands or other waters or within the riparian corridor (Appendix F).

Construction activities could directly disturb and/or spread existing noxious or invasive plants, and/or introduce weed seeds through equipment and vehicles used on the site, or via materials that are imported to the site. Therefore, the Project incorporates treatment of existing/known occurrences of noxious/invasive species into the plans and specifications, and the specifications also require preventive measures to limit the potential for introductions and spread of weeds during construction or the re-vegetation period.

b) Less-than-Significant. Riparian habitats have high value for many riparian and aquatic species; providing water, thermal cover, migration corridors, and diverse nesting and feeding opportunities for numerous species. Riparian forest occurs along the Markleeville Creek stream margins and dense mature willow scrub is found along Millberry Creek. In addition, vegetation types (habitat types) with a State (S) rank of 1-3 are considered sensitive by the CDFW (CDFW 2010). The Project site supports two CDFW sensitive habitats, Riparian Forest and Salix spp. Woodland Alliance. The Riparian Forest community has a similar composition to the Populus trichocarpa forest alliance (S3-ranking). The Salix spp. Woodland Alliance is composed of sand bar willow (*Salix exigua*), yellow willow (*Salix lutea*, and other willow species. The community is similar in composition to the willow thicket alliances, which have a range of sensitivity rankings depending on dominant species (*Salix exigua* [S4-ranking] and *Salix lutea* [S3-ranking]). The Alpine County General Plan identifies certain vegetation communities, including wetlands and riparian habitats, as sensitive due to their importance as habitat for plants and animals. Both of these habitat types occur in the Project site. Descriptions of the riparian habitat types present in the Project site are provide below. Two seasonal wetlands were delineated in the Project site, and are discussed under item (c), below.

> Riparian Forest (approximately 0.017 acres) (*Populus trichocarpa* forest alliance [Sawyer, et al., 2009]; Montane Riparian Habitat [Mayer and Laudenslayer, 1988]) primarily occurred along the

[13] Cal-IPC ratings are as follows (Cal-IPC 2013):

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

margins of Markleeville Creek. Species within the Markleeville Creek riparian corridor included black cottonwood (Populus trichocarpa), sand bar willow, Oregon ash (*Fraxinus latifolia*), mountain alder (Alnus incana), and quaking aspen. In the Sierra Nevada, Populus trichocarpa occurs mostly at montane elevations with large stands along streams in seasonally flooded and permanently saturated soils. Associated dominant and sub dominant canopy species include white fir (*Abies concolor*), lodgepole pine (*Pinus contorta* spp. *murrayana*), Jeffrey pine, willows, and alders.

> Salix spp. Woodland Alliance (Sawyer, et al., 2009) (approximately 0.86 acres) primarily occurred along Millberry Creek, and was dominated by various species of native willows. In the Sierra Nevada, this community type occurs along streambanks, in floodplains, and near meadows. Species characteristic of this community type include various shrubby willow species (e.g., sand bar willow, arroyo willow (*S. lasiolepis*), shining willow (*S. lucida*), and yellow willow). As discussed above for riparian forests, riparian habitats have high value for many riparian species.

Impact BIO-7

The Project will result in a net expansion of and enhancement to riparian habitat within the site.

The Project grading footprint is purposely focused on those areas necessary to remove artificial fill and materials in the disturbed areas that had been subject to developed land uses since the 1930 and to reconstruct a natural floodplain surface to enhance geomorphic and hydrologic processes that sustain riparian vegetation. The grading plan has been refined and optimized to minimize removal of existing mature riparian vegetation. However, some of the locations that must be temporarily disturbed for Project implementation are presently vegetated with native riparian species. The existing, temporary impact, and projected future areas of riparian habitat in the Project site are listed in Table 3.8.

While the Project will expand riparian habitat area, improve its structure, diversity and quality over the long-term, removal of some existing riparian vegetation will be required. To minimize the magnitude and severity of the possible impacts, the Project plans and specifications require several measures to protect existing vegetation (particularly measures limiting removal of mature trees), salvage and re-use living and dead vegetation, and to re-vegetate using appropriate native riparian species for all enhanced channel margins and floodplain surfaces.

Table 3.8 Riparian Habitat Effects

Habitat Type	Existing Acreage within Project Area	Impact Footprint / Re-vegetation Benefit Area	Individual Tree Removal
		(acres)	Number by diameter
Riparian Forest	0.17	n/a	1 less than 12 inch dbh 3 between 13 and 24 inch dbh 3 over 24 inch dbh
Salix spp. Woodland Alliance	0.86	0.16	
Upland Transition (including Aspen)	0.00	0.48	

[1] Impact footprints includes all areas that are anticipated to be temporarily or permanently impacted by construction of the proposed Project, including staging areas, restoration areas, and access routes.

c) Less-than-Significant with Mitigation.

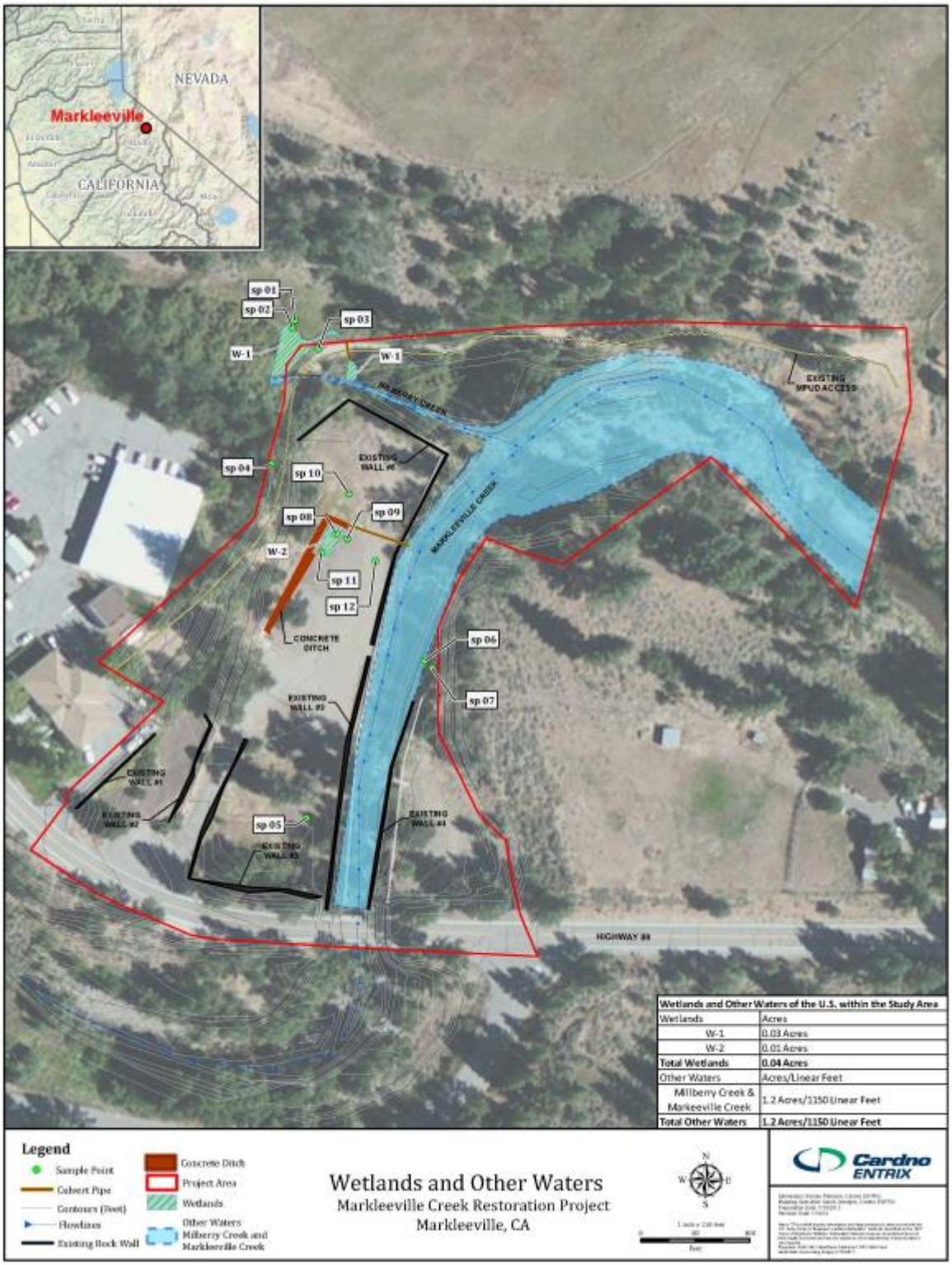
An assessment of potential jurisdictional wetlands and waters was conducted by Cardno ENTRIX in May 2012 to identify potential wetland areas under the US Army Corps of Engineers (USACE) jurisdiction, pursuant to Section 404 of the Clean Water Act and habitats under CDFW jurisdiction, pursuant to Section 1600 of the CDFW Code. The wetland delineation report (attached as Appendix E) provides detailed discussion of wetland resources present in the site. Based on the area delineated for this study, two seasonal wetlands (0.04 acres in total) were located within the Project site. Markleeville Creek and Millberry Creek are wetted sufficiently to be considered relatively permanent non-navigable tributaries to the Carson River traditional navigable water. These areas are shown in Figure 3.1 and in Appendix E. The areas delineated as seasonal wetlands exhibited the characteristics of wetlands including the dominance of wetland vegetation, presence of hydric soils, and hydrologic conditions that results in periods of inundation or saturation on the surface as a result of flooding or ponding. A brief description of each of these wetlands is provided below.

> Seasonal Wetland W-1 (0.03 acre). W-1 is located northeast of Millberry Creek, near the toe of a slope, in the northwest corner of the Project area. W-1 extends on both sides of the utility access road, connecting under the road with a culvert. W-1 includes a willow patch with and dense herbaceous vegetation comprised of sedges and forbs, including (*Carex praegracilis*) and smallfruited bulrush (*Scirpus microcarpus*). Surface water was observed during the site visit and W-1 exhibited the redox dark surface hydric soil indicator. W-1 receives water from direct precipitation, snow melt, and seepage from the adjacent slope, and discharges into Millberry Creek.

> Seasonal Wetland W-2 (0.01 acre). W-2 is a man-induced wetland formed in a shallow depression adjacent to a concrete drainage ditch in the footprint of a previous USFS building, which has since been removed. This wetland exhibits low vegetative cover of facultative and facultative wetland plant species including, toad rush (*Juncus bufonius*) and slender wheatgrass (*Elymus trachycaulu*) and clear and distinct redox concentration within the soil matrix and surface saturation. W-2 is fed by a concrete lined ditch which carried direct precipitation, snow melt, and seepage from the northern slopes into a culvert pipe and discharges into Markleeville Creek.

> Other Waters (0.8 acre; 780 linear feet). Markleeville Creek and Millberry Creek are wetted sufficiently to be considered relatively permanent non-navigable tributaries to the Carson River traditional navigable water.

Figure 3.4 Wetlands and Other Waters of the U.S.



Impact BIO-8

Short-term wetland vegetation removal in the area would occur during construction to allow access to improvement areas, as well as during grading and restoration construction activities. Removal of these habitats will be minimized as discussed below. The existing, temporary impact, and projected future areas of wetlands in the Project site are listed in Table 3.9.

Table 3.9 Wetland Habitat, Impact, and Benefit Areas

Habitat Type	Acreage within Project Area	Acreage within Impact Footprint[1]		Future Acreage
		Temporary	Permanent	
W-1	0.03	0.02	0.01	
W-2	0.01	0.00	0.01	
Wetlands	**0.04**	**0.02**	**0.02**	**0.09**

[1] Includes all areas that are anticipated to be temporarily or permanently impacted by construction of the proposed Project, including staging areas, restoration areas, and access routes.

In the long-term, the Project will increase the area of wetland to 0.09 acres and improve the quality of wetlands by planting a more diverse species assemblage and structure than is present under existing conditions. The result of the restoration will be improved wetland wildlife habitat.

The realignment and improvement of the MPUD access road would modify the cross-road drainage pattern that allows overflow to the downstream (southeast) fragment of W-1 adjacent to Millberry Creek. It would not place fill directly on or in W-1. Additionally, the modification of Millberry Creek to improve its connectivity to the restored floodplain in the form of a low gradient swale along its new alignment will create suitable seasonal wetland habitat.

The excavation of artificial fill and grading to restore a functional floodplain along the western side of Markleeville Creek will remove the existing surface expression of seasonal wetland W-2. However, the final grade, soil and vegetation salvage, and re-vegetation proposed for the restored floodplain will include several locations with shallow depressions that will have soils, surface hydrology, and subsurface moisture conditions appropriate to support the long-term success of wetland plants that will increase the total acreage of wetlands within the Project site by 0.05 acre.

The removal of the existing floodwalls along Markleeville Creek will allow improvement of the channel alignment; there will be a minor (380 square feet) enlargement of the channel area along the west side of the channel accompanied by a minor (1735 square feet) area of boulder and cobble habitat improvements that will foster channel margin filling on the east side of the channel, but no net change in the area of waters of the US. Similarly, changes to the stream bed will be limited to bed subsurface or surface material replacement to ensure adequate cover and stability over the new/realigned sewer crossing and to provide vertical bed stability at the mouth of Millberry Creek. No net loss of open channel would result. The removal of the floodwalls, grading to reconnect the floodplain, and re-vegetation of streambanks will create long-term improvements to the channel habitat diversity and quality.

The modifications of the existing Millberry Creek profile to backfill the existing entrenched channel, relocate the channel, and reconnect it to the restored floodplain will modify the location, but not reduce the area of other waters. The proposed Project will temporarily disturb CDFW-regulated streambeds and banks, and will require the acquisition of a Streambed Alteration Agreement prior to project implementation. The project will comply with Sections 401 and 404 of the Clean Water Act and Section 1602 of the CDFW code.

d) Less-than-Significant. Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to: a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

Construction of the restoration Project could temporarily disrupt the movement of wildlife species along the creek corridor and the movement of fish species in the creeks. However, restoration of the floodplain and riparian corridor will benefit wildlife, amphibian, and fish species in the long-term. Construction of the Project will require temporary measures to remove/exclude wildlife, amphibian, or fish as a means to prevent direct injury, death, or other impacts. These temporary effects will be conducted as biologic resource mitigation practices by qualified personnel to minimize the potential for any ancillary effects.

The Project site provides for wildlife movement up and down the watershed. However, this corridor is currently obstructed by the Highway 89 crossing at the upper end of the Project site and the quality of the corridor has been degraded by past activities on the floodplain. The project would not have an impact related to wildlife movement in the area because no physical obstruction would be created by the project that may inhibit wildlife movement. Implementation of the restoration project would not remove, degrade, or otherwise interfere substantially with the structure or function of the stream wildlife corridor within the Project site. Once construction of the restored floodplain and stream corridor is complete, wildlife movement is expected to be improved compared to pre-project conditions, as lost habitat due to site development in the 1930s will be restored. No native wildlife nursery site occurs within the project site.

Over the long-term, the Project will expand continuous riparian habitat along the Markleeville Creek and Millberry Creek corridor once the floodwall is removed, the floodplain is reconnected, and the riparian forest is re-established. This will improve conditions for movement of terrestrial wildlife. The Project will also improve the quality of the riparian habitat within the Project site. This will enhance conditions over the long-term for migratory birds and raptors that may utilize the Project site.

The Project will create long-term benefits for fish movement and use of the restored connected floodplain, by increasing the frequency and duration of local floodplain inundation, with normal and unimpaired return flow opportunities.

The Project will restore the profile of Millberry Creek to have connectivity to the restored floodplain surface, but the connection to Markleeville Creek will be via a short, high-gradient riffle/cascade feature. This modification is needed to: protect the Markleeville Creek bank from erosion during flood return flows; and, to protect the bed profile of Millberry Creek from erosion. However, this will limit the potential for fish access up Millberry Creek from Markleeville Creek during low flow. Since the existing hydrology of Millberry Creek is intermittent and the existing MPUD road culvert is not at grade, the net change in upstream fish access would be difficult to quantify. Fish movement downstream during high flows would be improved in terms of connectivity to adjoining floodplain habitat. Fish movement upstream or downstream through the new, realigned MPUD culvert would be improved relative to existing conditions. Fish use within Millberry Creek would be improved through the culvert and fish movement during high flows would not be modified.

e) Less-than-Significant. Short-term wetland and riparian vegetation removal in the area would occur during construction to allow access to improvement areas, as well as during grading and restoration construction activities, as described in items (b) and (c) above. Design of the grading plan has been optimized to reduce and minimize the need for removal of mature vegetation. To minimize the magnitude and severity of the possible impacts, the Project plans and specifications require several measures to protect existing vegetation (including limiting removal of large individuals with diameters greater than 6 inches), salvage and re-use living and dead vegetation, and to re-vegetate using appropriate native riparian species for all enhanced channel margins and floodplain surfaces. In the

long-term, the Project will increase the area of wetland and riparian wildlife habitats and improve the quality of wetland and riparian habitats by planting a more diverse species assemblage and structure than is present under existing conditions. The result of the restoration will be improved wetland and riparian wildlife habitat. Therefore, the Project will have a less than significant impact on any local regulations protecting biological resources.

f) No Impact. The Project would not have any effect on an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local regional or state HCP because the Project area is not located within any areas covered by any of these plans.

3.5 Cultural Resources

3.5.1 Environmental Setting

This cultural resources assessment is based on the investigation conducted by Cardno ENTRIX to support the CEQA and permitting process for the Project. The assessment is summarized below and is described in detail in the *Cultural Resources Inventory and Recommendations Letter Report* for the Markleeville Creek Restoration Project (Cardno ENTRIX 2014a), which is incorporated herein by reference (see Appendix G; report on file with the County).

3.5.1.1 Cultural Context

3.5.1.1.1 Ethnographic and Prehistoric Context

The Hung-a-lei-ti band of the Washoe Tribe of California and Nevada lived in the Markleeville area ethnographically and prehistorically. The prehistory of the Washoe people is thousands of years old. Several prehistoric archaeological; sites in and around Markleeville are evidence that Washoe villages preceded Euro-American settlement. Two recently recorded archaeological sites are located immediately northeast and northwest of the project area and include a small lithic scatter and a large prehistoric flaked stone artifact deposit with four bedrock milling features.

The Washoe were hunter-gatherers living in low elevation villages during winter and traveling to higher elevations, camps in the spring, through summer and into fall (d'Azevedo 1986). Hunting, fishing, and plant collecting were all important components of their subsistence strategy. It was likely that the Markleeville villages were occupied during mild winters, but may have been abandoned during hard winters in favor of lower elevation villages. At the same time, Markleeville Creek and the nearby East Fork of the Carson River were probably important fisheries, providing a predictable and consistent year round food resource.

3.5.1.1.2 Historical Context

The earliest records of people in the Alpine County area were written by early explorers. Jedediah Strong Smith was one of the first pioneers to pass through the area now known as Alpine County as early 1826. Kit Carson, of which Carson Pass in Alpine County is named for, is known to have been in this area sometime around 1839. Kit Carson connected with John C. Fremont, another explorer, in approximately 1844, and traveled through the area where Markleeville and Grover Hot Springs are presently located. "Major" John A. Ebbetts, an explorer, passed over the Sierra Nevada Mountains at the pass now named for him, Ebbetts Pass, which is also located in Alpine County.

Markleeville was initially settled by Jacob J. Marklee on September 12, 1861. At this time Marklee began ranching operations on a 160 acre claim of land which is now the townsite of Markleeville (Long et al., 1864? ND:13). His cabin was situated in the area now occupied by the Alpine County Courthouse. By 1863, a town was developed and by 1864 it had a population of 2,620, a telegraph line from Genoa, Nevada, and a post office. On January 19, 1864, Marklee was shot and killed by H.W. Tuttle, apparently

in self-defense over a property rights quarrel (Jackson 1964:30). The records of his trial are on file in Amador County (Linsley 1988:15).

Markleeville became known as a center of trade as well as the terminus of travel during the winter months. By August of 1863, the town was described as a bustling and thriving (Jackson 1964:30). Businesses in Markleeville by 1867 included black smiths, a brewery, brokers, a butcher and baker, a carpenter and builder, a civil engineer, general stores, hotels, several lawyers, liquor stores and a saloon, livery stables, a newspaper (The Alpine Chronicle), physicians, saw mills, a stage line, a post office, and telegraph office (Centennial Book Committee 1987:14).

Markleeville became the county seat in 1875. By this time, the regional mining boom of the 1860s had died and the county population decreased from more than 11,000 to about 1,200. The population in Markleeville also took a downward turn. A fire during the mid-1880s destroyed much of the town and it was never completely rebuilt.

After the mining boom, ranching and lumber were the predominant industries around the Markleeville area. By the turn-of-the-century the town population remained relatively low with only a few small businesses. Although recreational activities increased throughout Alpine County during the 20th century, the population in Markleeville remained low and the business community remained the same.

3.5.1.1.3 Project Area History

Beginning in 1933 a number of administrative structures were constructed for the new Alpine Ranger Station of the Alpine District of the Mono National Forest. These structures were built under the direction of the New Deal programs instituted by Franklin D. Roosevelt to help with national conservation needs as well as provide work for unemployed men during the Great Depression. Crews from the Civilian Conservation Corps (CCC) and the Emergency Relief Administration (ERA) were responsible for construction of seven structures in the project area as well as the installation of the landscape and various other grounds projects such as rock wall construction and water tank installation. The first structures built included the residence, barn, office building and warehouse. Later, but still historic built structures included a visitor information center, bunk house, and a paint/gas shed. Two additional sheds were also built; however, they appear to have been constructed during the late 1950s. A number of retaining walls and walkways were built by the CCC and the ERA around the compound. In April of 1936 a crew of ERA men built several stone walls (Maule 1995). Walls (Wall #3 and #4) were constructed along Markleeville Creek near buildings A and B. The large stone wall between the Alpine County Courthouse and Visitors Office was built prior to the construction of the Markleeville compound (Wall #1). A large portion of the two walls along the creek (Walls #3 and #4) have had a concrete cap installed to increase the height of the wall. The majority of the footbridge was constructed during the fall of 1934 (Maule 1995). These features are labeled on the Project Area map (Figure 1.2). The footbridge had two purposes: 1) to connect the east and west sides of the creek, and 2) to carry pipes across the creek to the B building of the compound. The footbridge was completed sometime in the spring of 1935. In December of 1937 a major flood event swept away the center portion of the bridge. Plans to rebuild and increase the height of the footbridge above the creek were drawn in July of 1938. The actual date of the rebuilding of the footbridge is unknown, but it is assumed it was relatively close to the date of the plans. No major modifications have been made to the footbridge since it was rebuilt.

In 1939 the Ranger Station headquarters was moved to Minden, Nevada. The Alpine Ranger Station then became the Markleeville Guard Station and was used as a fire prevention office, primarily for housing fire suppression equipment and personnel. In 1945 the Mono National Forest was officially transferred to the Toiyabe National Forest in Region 4, abolishing the name Mono but retaining the boundaries of the Alpine District. In 1973 the Alpine District was combined with the Carson District of the Toiyabe, dropping the Alpine name. The compound on the project site remained known as the Markleeville Guard Station.

Over the years a number of changes were made to the structures. Four of the buildings; the visitor's office, administrative office, barn, and the bunk house were moved from their original locations to different areas within the property. Structural modifications were also done to a number of buildings and the rock walls. Because the compound is located on the floodplain of the Markleeville Creek, it experienced a number of flood related events recorded as early as 1937 (Thornburg 1997:9). During the 1937 flood, damage occurred to some of the structures and to the bridge and original rock walls along the creek. After this event, recommendations were made to move the compound to a drier location. However, this did not occur before floods in 1950 and 1955 that resulted in several feet of water in the warehouse during both events. Despite additional changes to the flood protection features to extend or raise walls with concrete after the 1950s, the site and buildings were flooded in 1997 and again in 2005. Structural damage to a number of buildings, as well as damage to firefighting equipment occurred.

In 1998 the USFS renewed efforts to relocate their facilities out of the floodplain and explore a land transfer to the County of Alpine. In 2010 all buildings associated with the Markleeville Guard Station compound were removed and new facilities were constructed at another location. The only remaining features of the Markleeville Guard Station compound include several rock walls, a drainage feature, and a pedestrian bridge across Markleeville Creek.

It should also be noted that a feature on the National Register listed Alpine County Courthouse (NRIS #04001074), Wall #1, is located southeast of the Courthouse adjacent to the project area. It was likely constructed circa 1926-1928 when the Courthouse building was constructed. The Courthouse was designed by regional architect, Frederick J. De Longchamps and constructed entirely of native quarried stone. The building has been continuously utilized as a courthouse since its construction.

3.5.2 Regulatory Setting

3.5.2.1.1 Federal Regulations

The National Register of Historic Places (NRHP)

The NRHP is a list of historic properties that represent the local, state, and national heritage of the United States. The National Park Service (NPS) manages the list for the Department of the Interior; however, each state historic preservation office reviews the eligibility assessments and forwards recommendations for listing from the state level. Listing in the NRHP does not afford a property with protections or restrictions on future uses. The NRHP program is expressly intended to provide recognition of the importance of a property and serve as a record of our nation's heritage for the benefit of future generations.

The National Historic Preservation Act (NHPA) was passed in 1966 to provide a regulatory framework to ensure that significant resources are recognized and protected during federal projects and program through the Section 106 and Section 110 compliance processes. For compliance with the NHPA, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP.

NRHP significance criteria that may be applied to evaluate the cultural resources in this study are defined in 36 Code of Federal Regulations 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and :

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

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

In addition to meeting the four main criteria, properties considered for listing in the NRHP must retain integrity. Integrity refers to the ability of a property to convey its significance. In other words, a historic resources must have intact enough physical characteristics or features in order to communicate its significance under one or more of the NRHP criteria. NRHP guidelines recognize seven aspects or qualities that define integrity. The seven aspects are location, design, setting, materials, workmanship, feeling, and association. The Secretary of the Interior defines these aspects as follows:

> *Location* is the site where the resource was originally constructed.

> *Design* includes the form, plan, and style of a property.

> *Setting* is the physical surroundings of a property.

> *Materials* are the physical surroundings of a property.

> *Workmanship* is the evidence of the craftsmanship or ability of a culture.

> *Feeling* is the property's ability to express a sense of time.

> *Association* is the "direct link" evident between the property and an important event or person.

A property must have both significance and integrity to be considered eligible for listing in the NRHP, because the period of significance establishes the baseline or standard against which integrity is measured. Loss of integrity, if sufficiently great, will overwhelm the historical significance of resource and render it ineligible for listing. In addition to significance and integrity, a resource must be at least 50 years old in order to be eligible for listing in the NRHP unless it meets specific and exacting standards for exceptional significance. A full explanation of the procedures for evaluating historic resources can be found in publications issued by the NPS, including National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service 1982).

Although the current project area, in its entirety, has not been evaluated for federal significance, the majority of the project area that contained the Markleeville Guard Station compound was previously evaluated in 1998. There is the possibility that additional evaluation of federal significance will be required under a Section 404 Clean Water Act (CWA) permit with the Army Corps of Engineers (USACE) and/or California Department of Transportation (Caltrans) Local Assistance. Specific mitigation measures regarding Section 106 of the NHPA cultural resources requirements for cultural resources in the project Area of Potential Effects (APE) are detailed in the *Impact Analysis* section below.

3.5.2.1.2 State Regulations

CEQA and Cultural Resources

Section 15064.4 of the CEQA Guidelines requires that proponents of public and private projects financed or approved by public agencies assess the effects of the project on significant historic resources and unique archaeological resources (as defined in Section 21083.2). *Historical Resources* refers to buildings, sites, structures, objects, or districts that have historical, architectural, archaeological, cultural, or scientific importance. According to CEQA Guidelines (Section 15064.5 [a]), a resource can qualify as a *significant historical* resource for purposes of CEQA review if it meets any of the following criteria:

> It is listed in or determined eligible for listing in the California Register of Historic Resources (CRHR).

- It is included in a local register of historic of historical resources, as defined in Section 5020.1[k] of the California Public Resources Code, or identified as significant in a historical resource survey that meets the requirements of Section 5024.1[g] of the Public Resources Code, unless the preponderance of evidence demonstrates that it is not historically or cultural significant.
- The lead agency determines that it is significant as supported by substantial evidence in light of the whole record.

CEQA requires lead agencies to use specific criteria in evaluating the significance of historical resources potentially affected by a proposed project. The criteria required under CEQA are the same as the CRHR significance criteria discussed in the following section.

California Register of Historical Resources

The CRHR was created by California State Legislature in 1993 and is intended to serve as an authoritative listing of historical and archaeological resources in California. Additionally, the eligibility criteria for the CRHR are intended to serve as the definitive criteria for assessing the significance of historic resources for the purposes of CEQA compliance, establishing a consistent set of criteria for use by all public agencies statewide.

For a historical resource to be eligible for listing in the CRHR, it must be significant at the local, state, or national level under one or more of the following criteria from CEQA Guidelines Section 15064.5(a)(3), Subsections (A)-(D).

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in our past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values.
- It has yielded, or may be likely to yield, information important in prehistoric or history.

Historical resources automatically listed in the CRHR include those historic properties listed in, or formally determined to be eligible for listing in, the NRHP (Public Resources Code Section 5024.1).

Public Resources Code

PRC Section 21083.2 governs the treatment of unique archaeological resources, defined as "an archaeological artifact, object, or site about which it can be clearly demonstrated" as meeting any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a Project will cause a substantial adverse change to a unique archaeological resource, appropriate mitigation measures shall be required to preserve the resource in place and in an undisturbed state. Mitigation measures may include, but are not limited to, 1) planning construction to avoid the site, 2) deeding conservation easements, or 3) capping the site prior to construction. If a resource is determined to be a "nonunique archaeological resource", no further consideration of the resource by the Lead Agency is necessary.

Encountering Human Remains

The possibility of encountering human remains cannot be entirely discounted. Pursuant to PRC Section 7050.5 if human graves are encountered, work should halt in the vicinity and the Placer County Coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification.

3.5.2.1.3 Local Regulations

Alpine County General Plan

The Alpine County General Plan includes several policies (Element I – Section J) that pertain to the Preservation and Promotion of Archaeology and History in Alpine County (General Plan Goal No. 18 Preserve and Promote the Archaeology and History of Alpine County). These policies are as follows:

- Policy No. 18a: The County should cooperate with the Washoe and Miwok Tribes to develop policies for the identification and protection of significant archaeological sites.
- Policy No. 18b: The County should provide notice and necessary information to the Regional Officer governing archaeological sites of any development project that may have the potential to affect an archaeological site. The office should be allowed reasonable time to determine whether the project involves an archaeological site and respond with project alternatives and/or mitigation measures which would lessen or mitigate any identified negative effects.
- Policy 18c: The proponents or applicants for development projects in areas known or suspected of containing historic artifacts should be required to protect any historic sites and/or artifacts that may be found.
- Policy 18d: The County should assist the public in locating and obtaining grants for low interest loans for the preservation and enhancement of historic buildings.
- Policy 18e: The County should promote proactive planning to avoid cultural resource impacts and promote historic preservation through appropriate standards, incentives, and easements.

3.5.3 Impact Analysis

3.5.3.1.1 Methods and Results

The project area for cultural resources consisted of the project footprint and all of the areas of potential disturbance, including staging areas and subsurface excavation, as described in the project description. The vertical impacts of the project include all subsurface impacts in the project area as described in the project description. A records search of the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS) and the Forest Service archives in the Carson Ranger District Headquarters in Carson City, Nevada was conducted. A ¼ mile records search radius was performed in order to gain perspective on the types of cultural resources in the project area.

According to the records there are thirty-two previously recorded cultural resources within a ¼ mile radius of the project area, including one in the project area, the Markleeville Guard Station Compound (P-02-000488). There are nine previous cultural survey studies identified within a ¼ mile radius of the Project APE.

The Native American Heritage Commission (NAHC) and identified/interested Native American individuals, groups, and tribes were contacted regarding the project. This research did not result in the identification of either sacred sites or specific areas of archaeological sensitivity. Please note that SB-18 does not apply to this project as there is no change to the Alpine County General Plan for this undertaking. Furthermore, the Alpine County Museum and the Alpine Historical Society were contacted via letter to find out if they

had any information pertaining to the historical use of the project area. No responses have been received to date of this report.

In January of 2012, a Cardno ENTRIX archaeologist participated in a field kick-off meeting and site review for the Project. In December of 2013, a Cardno ENTRIX professional qualified archaeologist and architectural historian conducted a pedestrian/inventory survey of the entire project area. No archaeological materials and/or sites were identified during this survey.

Several built-environment features were identified in the project area during the survey. All structures associated with the Markleeville Guard Station compound have been removed from the project area. However, several remnant built-environment features of the compound remain and were identified and recorded during the survey on Department of Parks and Recreation (DPR) Site Record forms. The records were appended as supplemental information to the existing Markleeville Guard Station Primary Record, P-02-00488 (1998). The identified features included four rock walls (Wall #2-5), the pedestrian bridge over Markleeville Creek, and a cement sidewalk/drainage feature (see Figure 1.2 for a site map). The features were identified as non-contributing elements to the significance of the Markleeville Guard Station compound in the 1998 Determination of Eligibility for the Markleeville Guard Station. It was noted that the rock walls were in relatively poor condition and did not retain enough integrity to evaluate.

The 1998 determination of eligibility for the compound conducted by the USFS concluded that the Markleeville Guard Station compound overall was not eligible for inclusion on the NRHP due to the fact that past modifications had compromised the design, materials, and workmanship of the original architectural features (Kumiega 1998). Collectively the structures in the compound appeared to be eligible but research proved that only three structures remain in their original location compromising the integrity of location, feeling, and association (Kumiega 1998). The guard station structures were subsequently removed away from the project area in 2010 and the land was transferred from the Forest Service to the County of Alpine in 2013.

An additional large stone wall, Wall #1 (see Figure 1.2 for site map) was identified during the survey at the base of the Alpine County Courthouse. This wall was built prior to the construction of the Markleeville Guard Station compound and is associated with the National Register listed Alpine County Courthouse which was constructed circa 1926-1928. Wall #1 was recorded on separate DPR Site Record forms as an update to the Alpine County Courthouse National Register nomination. While the National Register nomination for the Alpine County Courthouse does not explicitly address the wall, only the courthouse itself listed as a contributing building, the boundary of the National Register property is listed as the entirety of the parcel. As a related infrastructural feature, built in association with the building and built during the period of significance, it appears the retaining wall feature (Wall #1) does contribute to the overall setting of the National Register property. However, the Project does not plan to remove or adversely affect Wall #1.

It should be noted that Caltrans Bridge 31-02, the Markleeville Creek Bridge, which was built in 1929, is within the project area. The bridge was evaluated for the California Historic Bridge Inventory as a Category 5 bridge, meaning it is not eligible for listing in the NRHP (Caltrans 1986).

Historic Resources

Proposed Project impacts to cultural resources are identified in Table 3.10 with detailed discussions following.

Table 3.10 CEQA Checklist for Cultural Resources

V. Cultural Resources

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

Discussion

a) Less-than-Significant with Mitigation The Project would cause a less than significant impact to historical resources as defined in §15064.5 with the implementation of mitigation measures CR-1, CR-2, and CR-3.

As discussed, the records search conducted at the CCIC and Forest Service did reveal the presence of one previously recorded built-environmental resource, the Markleeville Guard Station. This resource was determined ineligible for the NRHP in 1998 by the Forest Service (Kumiega 1998). The field survey identified built environment features associated with the Markleeville Guard Station compound and a rock wall that predates the guard station. There are an additional thirty-one cultural resources located within 0.25 mile of the proposed project area. While it is highly unlikely that these sites would be impacted by the proposed project, their presence suggests that undiscovered archaeological resources could be present in previously undisturbed portions of the project area. The field survey and research on previous ground disturbance, soils testing, etc. in the project area indicates that much of the ground has previously been disturbed as a result of activities associated with the Markleeville Guard Station compound and the repeated flooding and repair of Markleeville Creek. The portion of the area adjacent to Markleeville Creek is; however, an archaeologically sensitive area. It is possible that a buried terrace is present and adjacent to the modern stream channel on both sides of the creek banks. Although no archaeological materials were observed in this area based on the field survey, buried prehistoric site potential in this area remains for ground disturbing activities that take place beyond there and reach native ground. There is also the potential to encounter buried historic-era sites associated with the Markleeville Guard Station throughout the project area.

While it is unlikely that previously unrecorded archaeological deposits or architectural resources would be discovered during construction of the proposed project, the possibility exists that project construction could result in exposure of and impacts to unknown potentially significant resources. In the absence of adequate mitigation measures, the disturbance of an archaeological resource during project implementation would be a significant impact if the discovered resource were determined to be an “historical resource,” that is, if the resource is eligible for listing on the CRHR and/or the NRHP.

Mitigation Measure CR-1—Prepare a Section 106 Cultural Resources Inventory and Evaluation Report and/or Historic Properties Survey Report, Historic Properties Evaluation Report, and Archaeological Survey Report

It is assumed that the requirements of a Section 404 CWA Permit and/or Caltrans Local Assistance will require a Section 106 Inventory and Evaluation. If there is federal involvement, an inventory and evaluation report to the standards of Section 106 of the NHPA is required prior to the commencement of work. This inventory and evaluation must take into account the potential effects on the remaining features of the Markleeville Guard Station compound (previously evaluated), the Wall #1 associated with the National Register-listed Alpine County Courthouse, and Caltrans Bridge 31-02, as well as the potential to encounter buried archaeological materials and/or sites.

Mitigation Measure CR-2—Avoidance and Protection Measures for Rock Wall #1 of the National Register listed Alpine County Courthouse

Rock Wall #1 is the rock wall located closest to the Alpine County Courthouse and will not be removed by the proposed project. The wall appears to be a contributing feature to the overall setting of the National Register listed Alpine County Courthouse, constructed circa 1926-1928. In order to protect this rock wall and avoid evaluation of those impacts under Section 106 of the NRHP for this project, In order to protect this rock wall, it is recommended that a Cultural Resource Protection Plan be established to be used by the contractor(s) while working within ten feet of this resource. The plan shall be prepared by a qualified architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards prior to construction. At a minimum the plan will include:

> A requirement for the placement of perimeter fencing and/or signs around the wall to identify it as a sensitive resource to be avoided:

> Guidelines for the operation of construction equipment adjacent to the wall;

> Guidelines for storage of construction materials away from the wall;

> Requirements for monitoring and documenting compliance with the plan; and

> Education/training of construction workers about the importance of protecting the wall around which they would be working.

Mitigation Measure CR-3—Construction Crew Education/Tailboard Meeting and Accidental Discovery of Archaeological Resources Procedures

Prior to the start of construction, Alpine County will ensure that all construction personnel, including construction forepersons and field supervisors receive training by a qualified professional archaeologist, as defined by the Secretary of the Interior, and who is experienced in teaching non-specialists, to ensure they can recognize cultural resources materials in the event any are discovered during construction.

Furthermore, to avoid any potential adverse effect from the proposed project on accidentally discovered buried historical resources as defined in CEQA Guidelines Section 15064.5(a)(c), Alpine County will distribute a cultural resources "ALERT" sheet to the project's prime contractor; to any project subcontractor (including firms providing services such as demolition, excavation, grading, etc.), or utilities firms involved in soils disturbing activities within the project site. The ALERT sheet provides workers notice that cultural resources may be encountered during excavation and instructions on what to do if evidence of an archaeological site is encountered. Prior to any soils disturbing activities being undertaken, each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including: machine operators, field crew, supervisory personnel, etc. The prime contractor will provide Alpine County with a signed affidavit from the responsible parties (prime contractor, subcontractor[s], and utilities firms) confirming that all field personnel have received copies of the ALERT Sheet.

Should any indication of an archaeological resource be encountered during any soils disturbing activity of the project, the contractor will immediately notify Alpine County and suspend any soils disturbing activities within 150 feet of the discovery until the find can be assessed by a qualified professional archaeologist, the qualified professional will determine what additional measures should be undertaken.

The qualified professional archaeologist will advise Alpine County as to whether the discovery is an archaeological resource, retains sufficient integrity, and it of potential scientific, historical, and/or cultural significance. If an archaeological resource is present, the archaeological consultant will identify and evaluate the archaeological resource. The archaeological consultant will make a recommendation as to what action, if any, is warranted. Based on this information, if warranted, specific additional measures may be implemented.

Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; and/or an archaeological testing program. Alpine County may also require that a site security program be implemented if the resource is at risk from vandalism, looting, or other damaging actions.

Alpine County's archaeological consultant will submit a final report that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource will be provided in a separate removable insert within the final report.

Copies of the final report will be sent Alpine County and the CCIC, along with copies of any formal recordation forms (CA DPR 523 series) and/or documentation for nomination to the NRHP/CRHR. In instances of high public interest or interpretive value, Alpine County may require a different final report content, format and distribution from that presented above.

b) Less-than-Significant with Mitigation. The Project would cause less than a significant impact in the significance of a unique archaeological resources pursuant to §15064.5 with the implementation of Mitigation Measure **CR-3,** above.

CEQA Guidelines Section 15064.5 refers to the Public Resources Code (PRC) Section 21083.2 definition of a unique archaeological resource as follows:

" As used in this section, unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person."

An archaeological property that meets the criteria listed under Section 21083.2 of the PRC is considered a unique archaeological resource for the purposes of CEQA.

No archaeological artifacts, objects, or sites, have been identified within the project area. No unique archaeological resources are known to be present that could be affected by the project. Unless discovery of such materials is uncovered during earth-disturbing activities, the project would have no effect on archaeological resources.

Also noted above, while it is unlikely that previously unrecorded archaeological deposits would be discovered during construction for the proposed project, the possibility exists that project construction could result in exposure and impacts to unknown significant unique resources. In the absence of adequate mitigation measures, the disturbance of a unique archaeological resource during project implementation would be a significant impact if the resource were determined to meet the definition of a unique archaeological resource in PRC Section 21083.2.

Mitigation Measure **CR-3** requires, among other things, that the recommendation of a qualified archaeologist be followed if artifacts are discovered during excavation activities. Recommendations may include evaluation, preservation in place, archaeological test excavation, and/or archaeological data recovery. Implementation of this mitigation measure would reduce the impact to a less than significant level.

c) No Impact. No geologic strata that would contain paleontological resources exist at the site, therefore the project will not directly or indirectly destroy a unique paleontological resource, site, or unique geologic feature and there is no impact.

d) Less-than-Significant with Mitigation. The Project will cause a less than significant impact to disturbance of any human remains, including those interred outside of formal cemeteries with the implementation of mitigation measure **CR-4**, below.

No human remains have been identified within the project area as result of the records search, archaeological fieldwork, or through consultation with the NAHC and interested Native American individuals. However, construction of the proposed project could result in the identification of human remains associated with unrecorded archaeological deposits. According to the California Health and Safety Code (CHSC), six or more human burials at one location constitute a cemetery (Sec. 8100), and disturbance of a Native American cemetery is a felony (Sec. 7052).

Disturbing human remains would be a significant impact and would therefore require mitigation. Mitigation Measure **CR-4**, requires, among other things, that human remains found during excavation activities will be protected until the County Coroner determines there status per PRC Sec. 5097.98.

Mitigation Measure CR-4—Preserve Human Remains if Encountered

If human remains are encountered during construction, Alpine County will notify the Alpine County Coroner immediately, as required by California PRC Code §5097.98. A qualified professional archaeologist will also be contacted immediately. If the County Coroner determines that the remains are Native American, the Coroner will then contact the NAHC, pursuant to Section 7050.5[c] of the California Health and Safety Code.

There will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the County Coroner has determined that no investigation of the cause of death is required or if remains are Native American. If the remains are of Native American in origin:

> Within 24 hours of notification, the NAHC will identify a Native American “most likely descendant” (MLD) to make a recommendation regarding appropriate treatment of the human remains.

> If the identified MLD fails to make a recommendation within 48 hours of being notified, Alpine County will work with the NAHC to determine appropriate means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in PRC Section 5097.98.

3.6 Geology and Soils

3.6.1 Environmental Setting

The Project is in the Sierra Nevada geomorphic province, situated near the crest of the mountain range.

The majority of the site is located on Holocene alluvial (reworked glacial and glacio-fluvial) sediment that has been modified substantially by the construction of flood protection concrete wall(s) and the importation of (up to 3 feet) of fill materials. The alluvium ranges from silt to boulder sizes with the dominant size in the medium to coarse gravel (USFS 1990 soil remediation reports provided as Appendix B in RCI, 2007). Underlying the alluvium is weathered volcanic pyroclastic rock (about 6 to 12 feet depth and/or downstream outcrops) the volcanic rock has weathered to a very stiff, clayey material.

Soil descriptions and photos of seven sample pits are provided in the 2007 design report (RCI 2007). Additional information about subsurface conditions is provided for three monitoring well logs in the USFS 1990 soil remediation report (Appendix B of the RCI 2007 report).

In the disturbed areas that had previously been occupied for buildings, parking, or other quasi-industrial uses while the site was the USFS Guard Station, the soils and subsurface information indicates and average of approximately three feet of imported fill of varied size and gradation (primarily sand and gravel).

3.6.2 Regulatory Setting

3.6.2.1 State Regulations

Seismic Related Regulations

The Alquist Priolo Zoning Act requires the mapping of zones around active faults in California, in an effort to prohibit the construction of structures for human occupancy on active faults and minimize damage due to rupture of a fault. The Seismic Hazard Mapping Act is intended to delineate zones where earthquakes could cause hazardous ground shaking and ground failure. Both of these acts require local cities and counties to regulate activities within these zones. Additionally, Title 24 of the California Code of Regulations, the California Standard Building Code, contains specific requirements for construction with respect to earthquakes intended to be protective of public health.

Stormwater Quality and Erosion Control Regulations

A Statewide General Construction Stormwater Discharge (GCSD) Permit (Order No. 2009-0009-DWQ) was adopted by the SWRCB on September 2, 2009 for construction projects that disturb greater than one acre or have the potential to impair water quality. The permit is required regardless of the time of year that construction occurs. This permit requires a Notice of Intent to be submitted, a SWPPP to be developed and implemented, and monitoring to be conducted. The SWPPP must contain BMPs, other measures to prevent pollution, and a construction timeline. The SWPPP shall demonstrate compliance with erosion and sediment control standards and identify responsible parties. Furthermore, a BMP maintenance program is required by the SWPPP, which should include proper installation and thorough and frequent inspection to ensure the effectiveness of specific BMPs.

3.6.2.2 Local Regulations

Alpine County General Plan

The following goals and policies of the County General Plan were considered in analyzing potential impacts of the Project:

G. P. GOAL NO. 1 CONSERVE SOIL AND RELATED RESOURCES

POLICY NO. 1
Require soils and geologic reports for all land development projects.

3.6.3 Impact Analysis

Proposed Project impacts to geology and soils are identified in Table 3.11 with detailed discussions following.

Table 3.11 CEQA Checklist for Geology and Soils

VI. Geology and Soils

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

Discussion

a) Less-than-Significant. The Project's only proposed structures are sewer infrastructure (e.g., pipes and lift station) that would be built to meet all regulatory codes for the anticipated earthquake hazards. No structures for public access and/or residential use would be included. The replacement of historic fill and retaining wall with engineered fill to support the proposed parking lot would reduce risks of instability during seismic events. This would be a less-than-significant impact.

The Project site is located within the Sierra Nevada and is potentially affected by seismic sources located within the Sierra Nevada Mountains, the Sierra Nevada Foothills Fault System to the west, and the Sierra Nevada Frontal Fault System to the east. The closest trace is about 1.5 miles from the site near Airport Road (http://gmw.consrv.ca.gov/shmp/download/quad/MARKLEEVILLE/maps/MARKLEEVILLE.PDF).

Ground shaking associated with seismic activity could be a source of geologic hazards to life or property at the site. Although the potential maximum earthquake intensity rating could be high, all proposed sewer infrastructure would be compliant with building codes for the maximum expected earthquake intensity (Zone 4). Additionally, the removal of a degraded rock/concrete retaining wall, removal/sorting and reuse

of suitable fill, and re-shaping topography for the proposed parking area will improve the stability of the fill surface.

Risks of liquefaction are considered low and the Project would remove existing fill that is unsuitable for reuse in any structural fills.

Risks of landslide are considered low and the Project would not create or modify any natural slopes exceeding 30 percent, while improving the stability of fill surfaces.

b) Less-than-Significant. The Project would modify the MPUD access road alignment, profile, and drainage to reduce potential erosion and sedimentation, re-establish a vegetated floodplain in the areas now occupied by barren artificial fill, and reduce sediment sources within the degraded Millberry Creek channel. The removal of the floodwalls and reconstruction of natural streambanks along Markleeville Creek may result in occasional, localized erosion. However, no substantial erosion of native topsoil would result from the Project on- or off- site.

c) No Impact. The Project would not create cuts or place fills in areas of landslide, lateral spreading, subsidence or liquefaction.

d) No Impact. The Project would not locate paved parking or sewer infrastructure facilities on expansive soils.

e) No Impact. The Project will not install septic or other alternative waste water systems, or require disposal of wastewater.

3.7 Greenhouse Gas Emissions

3.7.1 Environmental Setting

Greenhouse Gases (GHG) and climate change are a cumulative global issue. CARB and US Environmental Protection Agency (USEPA) regulate GHG emissions within the State of California and the United States, respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

3.7.1.1 Greenhouse Gases (GHG)

Many chemical compounds found in the Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to the Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of the Earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous Oxide), while others are exclusively human-made (like gases used for aerosols).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

> Carbon Dioxide (CO2): CO2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

> Methane (CH4): CH4 is emitted during the production and transport of coal, natural gas, and oil. CH4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

- Nitrous Oxide (N2O): N2O is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- Fluorinated Gases: Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF6) are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases arc typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.

Greenhouse Gas Emissions and Climate Change in California produced 492 million gross metric tons of CO2 equivalents in 2004. Consumption of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7 percent of total GHG emissions in the state. This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2 percent) and the industrial sector (20.5 percent) The 2004 emissions levels were used to determine the AB 32 emission reduction goals. (Atkins, 2012)

In 2009, California emitted 457 MMTCO2e. The transportation sector accounts for 38 percent, electricity generation 23 percent, and industrial 20 percent of total emissions. Increasing vehicle fuel efficiency, developing alternative fuels, reducing vehicle miles traveled (VMT), and increased use of renewable energy generation have been proposed as options for controlling or reducing CO2 emissions from the transportation sector. (Atkins 2012)

3.7.2 Regulatory Setting

3.7.2.1 Federal Regulations

U.S. Environmental Protection Agency (USEPA)

On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the USEPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the USEPA was required to follow the language of Section 202(a) of the CAA. This is because the Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy and other organizations.

On April 17, 2009, the USEPA Administrator signed proposed "endangerment and cause or contributes findings" for GHGs under Section 202(a) of the CAA. The USEPA held a 60-day public comment period, which ended June 23, 2009, and received over 380,000 public comments. These included both written comments as well as testimony at two public hearings in Arlington, Virginia and Seattle, Washington. The USEPA carefully reviewed, considered, and incorporated public comments and has now issued these final Findings.

The USEPA found that six GHGs taken in combination endanger both the public health and the public welfare of current and future generations. The USEPA also found that the combined emissions of these GHGs from new motor vehicle engines contribute to the greenhouse as air pollution that endangers public health and welfare under CAA section 202(a). These Findings were based on careful consideration of the full weight of scientific evidence and a thorough review of numerous public comments received on the Proposed Findings published April 24, 2009. These findings went into effect on January 14, 2010.

3.7.2.2 State Regulations

There are a variety of statewide rules and regulations which have been implemented or are in development in California which mandates the quantification or reduction of GHGs. Under CEQA, an

analysis and mitigation of emissions of GHGs and climate change in relation to a Proposed Project is required where it has been determined that a project will result in a significant addition of GHGs. Certain Air Pollution Control Districts (APCDs) have proposed their own levels of significance. The Placer County APCD, which has regulatory authority over the air emissions from this Project, has not established a significance threshold.

Executive Order S-3-0

Executive Order S-3-05 was established by Governor Arnold Schwarzenegger in June 2006 and establishes the following statewide emission reduction targets through the year 2050:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This Executive Order does not include any specific requirements that would pertain directly to the Proposed Project. However, actions taken by the State to implement these goals may affect the Project, depending on the specific implementation measures that are developed.

ASSEMBLY BILL 32

AB 32, also known as the California Global Warming Solutions Act of 2006, was established in 2006 to mandate the quantification and reduction of GHGs to 1990 levels by 2020. The law establishes periodic targets for reductions, and requires certain facilities to report emissions of GHGs annually. The bill also reserves the ability to reduce emissions targets lower than those proposed in certain sectors which contribute the most to emissions of GHGs, including transportation. Additionally, the bill requires:

- GHG emission standards to be implemented by 2012; and
- CARB to develop an implementation program and adopt GHG control measures “to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources or categories of sources.” CARB issued a draft Climate Change Scoping Plan in December 2008.

The Assembly Bill 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The scoping plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program.

SENATE BILL 375 (LAND USE PLANNING)

SB 375 provides for a new planning process to coordinate land use planning and regional transportation plans and funding priorities, in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), including the Sacramento Area Council of Governments (SACOG), to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit oriented development. SB 375 will be implemented over the next several years.
Regional/Local Regulations

Air Pollution Control District

Alpine County General Plan

G. P. GOAL NO. 3 MEET OR EXCEED FEDERAL AND STATE AIR QUALITY REGULATIONS

POLICY NO. 3
The County should continue to consult with the Great Basin Unified Air Pollution Control District regarding any proposed project which has the potential to adversely affect ambient air quality.

3.7.3 Impact Analysis

Proposed Project impacts to greenhouse gases are identified in Table 3.12 with detailed discussions following.

Table 3.12 CEQA Checklist for Greenhouse Gas Emissions

VII. Greenhouse Gas Emissions

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

Discussion

a) Less-than-Significant. The Project will not create any long-term net greenhouse gas emissions, and would result in a long term benefit from carbon sequestration, after considering methane production from wetlands. Temporary emissions from equipment and vehicles during construction would be less-than-significant with mitigation.

The Project will modify existing soils and vegetation of the site, enlarging and enhancing the riparian, wetland, and vegetated upland and decreasing the barren and paved areas.

Table 3.13 details the estimated differences in sequestered carbon and offsetting methane production at the site under existing versus the future, with Project conditions. The net benefit of the Project is substantial: a 29.62 metric ton increase in carbon sequestration, offset by a 0.02 metric ton increase in methane production (Table 3.13). The benefit of the Project expressed as carbon dioxide equivalent (reduced-produced) is estimated to be 279.30-387.55=108.31.

Table 3.13 Existing and Project Carbon Sequestration and Methane Production

	Existing Pre-Project			Future, with Project		
Cover Type	**Area**	**Sequestered Carbon**	**Methane Production**	**Area**	**Sequestered Carbon**	**Methane Production**
	acres	metric tons	metric tons	acres	metric tons	metric tons
Open Water	0.91	0.0.	0.0	0.72	0.0	0.0
Riparian Vegetation	0.99	39.86	0.0	1.41	57.34	0.0
Wetlands	0.04	0.27	0.02	0.09	0.57	0.04
Upland Vegetation	1.35	36.08	0.0	1.80	47.92	0.0
Disturbed/ Barren	1.23	0.0	0.0	0.58	0.0	0.0
Disturbed/ Unpaved Road	0.36	0.0	0.0	0.32	0.0	0.0
Developed/ Paved	0.60	0.0	0.0	0.56	0.0	0.0
Site TOTAL	**5.48**	**76.21**	**0.02**	**5.48**	**105.83**	**0.04**

Source: Cardno ENTRIX 2014b.

b) No Impact. The Project would not conflict with any greenhouse gas reduction plans, policies, or regulations.

3.8 Hazards and Hazardous Materials

3.8.1 Environmental Setting

A 500-gallon underground storage tank had been historically used to store gasoline on the site until the early 1980s. This tank was excavated and moved to another location on the site, covered and filled with diesel fuel, and resulted in a leak of product into Markleeville Creek. Clean up occurred but the contamination was not eliminated. Following this incident, a 300-gallon diesel tank and a 2,500-galoon gasoline tank were placed in the same area, where they remained until September 1989 (USDA 1990, included in appendices of RCI 2007).

Approximately 550 cubic yards of contaminated soils were excavated and transported to an off-site location for aeration treatment in December 1989. Soil removal in the vicinity of the buried sewer system required logistics to avoid impacts to the pipeline. The excavated materials were replaced with screened rock to immediately above the groundwater level and backfilled with clean overburden materials. Monitoring of water and soil on-site and of the treated materials off-site indicates that there were no further hydrocarbons remaining.

The existing sewer pipeline segments of asbestos concrete only have a risk of becoming hazardous if the materials become airborne due to improper removal methods. Proper removal and disposal measures will be ensured as part of the project plans and specifications.

3.8.2 Regulatory Setting

A hazardous material is defined by the California Environmental Protection Agency (CAEPA), Department of Toxic Substances Control (DTSC), as a material that poses a significant present or potential hazard to human health and safety or the environment if released because of its quantity, concentration, or physical or chemical characteristics (26 California Code of Regulations 25501). Applicable regulations and policies considered relevant to the Proposed Project are summarized below.

3.8.2.1 Federal Regulations

The principal federal regulatory agency responsible for the safe use and handling of hazardous materials is the USEPA. Two key federal regulations pertaining to hazardous wastes are described below. Other applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the Code of Federal Regulations.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act enables USEPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transport, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, the Superfund was amended through the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the clean-up, even if the material was dumped illegally when the property was under different ownership.

3.8.2.2 State Regulations

California regulations are equal to, or more stringent than, federal regulations. USEPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key laws pertaining to hazardous wastes are discussed below.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a report that describes their facilities, inventories, emergency response plans and training programs. Hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered to be hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to, but more stringent than, the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification
- Generation and transport

- > Design and permitting of recycling, treatment, storage, and disposal facilities
- > Treatment standards
- > Operation of facilities and staff training
- > Closure of facilities and liability requirements

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of them. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plant to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including the USEPA, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Other Laws, Regulations, and Programs

Various other state regulations have been enacted that affect hazardous waste management, including:

- > Safe Drinking Water and Toxic enforcement Act of 1986 (Proposition 65), which requires labeling of substance known or suspected by the state to cause cancer; and
- > California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possible contaminate sites in the state.
- > State and federal regulations also require that hazardous materials sites be identified and listed in public records. These lists are:
- > Comprehensive Environmental Response, Compensation, and Liability Information System
- > National Priorities List for Uncontrolled Hazardous Waste Sites
- > Resource Conservation and Recovery Act
- > California Superfund List of Active Annual Workplan Sites
- > Lists of state-registered underground and leaking underground storage tanks.

3.8.2.3 Local Regulations

Alpine County General Plan

G. P. GOAL NO. 25 PROTECT CITIZENS AND PROPERTY FROM DAMAGE BY HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO HARMFUL CHEMICALS, RADIATION LEVELS, GASES, EXPLOSIVES AND HAZARDOUS WASTE

POLICY NO. 25A
Ensure the hazardous waste materials used in business and industry are properly handled and that information on their handling and use is available to fire and police protection agencies.

IMPLEMENTATION MEASURE: Continue to enforce hazardous materials provisions in the County Zoning Code.

POLICY NO. 25B
Ensure the hazardous waste generated in the County is properly planned for, handled, treated and disposed of.

IMPLEMENTATION MEASURE: Enact provisions of the implementation plan provided in the Alpine County Hazardous Waste Management Plan.

IMPLEMENTATION MEASURE: Comply with the California Integrated Waste Management Act which directs counties to prepare an Integrated Waste Management Plan consisting of the following elements:

A. Source Reduction & Recycling

B. Household hazardous Waste

C. Nondisposal Facility

D. Siting

E. Summary Plan

POLICY NO. 25C
Ensure that Alpine County does not become a corridor for transporting hazardous materials, including nuclear waste.

IMPLEMENTATION MEASURE: The Alpine County Board of Supervisors should consider adopting a resolution to establish a hazardous material and nuclear waste transport free County.

3.8.3 Impact Analysis

All hazardous materials are currently regulated and controlled by CAEPA in a manner that minimizes risks of spills or accidents. Any hazardous materials used in the construction start up and operation of the Project, such as diesel for equipment will be handled according to current practices. The Proposed Project impacts from hazardous materials construction and operations related impacts are identified in Table 3.14 with detailed discussions following.

Table 3.14 CEQA Checklist for Hazards and Hazardous Materials

VIII. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Table 3.14 CEQA Checklist for Hazards and Hazardous Materials

VIII. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

a) No Impact. The Project would not require or involve the routine use, transport or disposal of hazardous materials Impact discussion.

b) Less-than-Significant. The Project would not create any long-term mechanism for upset or accidental release of hazardous materials, but implementation will remove existing artificial fill and existing aging infrastructure that could be contaminated and require special handling and disposal to prevent an accidental release.

It is possible that removal of sewer pipeline segments and/or placed fill and other artificial substances within the excavation footprint could include contaminated materials. The Project specifications include measures to sample, test, and determine whether any possible contamination would render the items unsuitable for reuse and/or requiring treatment as a hazardous material. The Project specifications for the sewer system modifications include methods and measures to properly remove and dispose of any asbestos concrete pipe segments.

c) No Impact. The Project would not emit or handle hazardous materials, and is not located within 0.25 miles of an existing or proposed school.

d) No Impact. The Project would not be located on a listed hazardous materials site.

e) No Impact. The Project would not be located in an airport land use plan area or within two miles of a public or public use airport.

f) No Impact. The Project would not be located in the vicinity of a private airstrip.

g) Less-than-Significant. The Project would not impair any emergency response or evacuation, but would improve the reliability, safety, and year-round access for MPUD vehicles to their sewer infrastructure. This would be a less-than-significant impact.

h) Less-than-Significant. The Project would not place new structures and/or substantially increase human exposure to wildland fire hazards. While the Project will re-vegetate areas that are presently barren, it will include long-term monitoring and maintenance of vegetation conditions.

3.9 Hydrology and Water Quality

3.9.1 Environmental Setting

3.9.1.1 Surface Hydrology and Drainage

Markleeville Creek has a broad 60 square mile watershed and joins the East Fork of the Carson River roughly 1.5 miles downstream of the project area to the northeast. The watershed is dominated by conifer forest with minor amounts of meadow. Less than one percent is developed in residential/commercial land uses. At least two diversions route water around the project area to fields downstream of the project area (RCI 2007).

The surface hydrology return-interval calculations by RCI (2007), based on the prior watershed stream corridor assessment (Mactec 2004), shown in Table 3.15 are used to in our hydraulic modeling (Appendix D) to express both the desired overbanking conditions and to screen for any adverse changes under larger flood events.

Table 3.15 Design Flood Flows – Markleeville Creek*

Recurrence Interval	Flow Rate (cfs)
2-year Flow	378
5-year Flow	993
10-year Flow	1,505
25-year Flow	2,613
50-year Flow	3,517
100-year Flow	4,904

*Upper Carson River Watershed Stream Corridor Assessment, Table 4.15

RCI 2007 a detailed hydrologic analysis of the Millberry Creek drainage was not completed as a part of this project. Existing data from an historic US Geological Survey gage station on Millberry Creek was referenced to identify possible flows. The gage station was located upstream of the project site and upstream of the existing diversion near Highway 89. The highest recorded peak flow was 291 cfs on January 31, 1963. The United States Geological Survey indicates this storm event approximately a 50-year storm event (Paulson, R.W., Chase, E.B., Roberts, R.S., and Moody, D.W., Compilers, National Water Summary 1988-89—Hydrologic Events and Floods and Droughts; U.S. Geologic Survey Water-Supply Paper 2375, 591 p.) Other peak flows recorded ranged from a low of 0.7 cfs in May of 1972 to 168 cfs in March of 1969.

Millberry Creek has a narrow five square mile watershed and joins Markleeville Creek near the downstream end of the project area. Millberry Creek drains the highest point of the Markleeville Creek watershed. Millberry Creek is highly modified upstream due to numerous irrigation structures and diversions. The largest diversion, roughly 0.5 mile upstream of the project area, appears to divert 100% of the stream flow during low flows (RCI 2007).

For design purposes, a particular flow for Millberry Creek could not be determined. Two 36-inch pipes are proposed with a full pipe capacity (both pipes combined) of 157 cfs. Total flow capacity of the road overflow is approximately 394 cfs at a flow depth of 10.5 inches across the road. The combined approximate flow capacity of the pipes and road overflow is 551 cfs, almost twice the total 50-year peak flow.

3.9.1.2 Groundwater

Seven test holes were excavated with a backhoe on March 22, 2007 (RCI 2007). Groundwater was observed at a depth of 36 to 48 inches near the creek, which approximated the surface water elevation in the creek. Near the base of the cut slope to the west groundwater was observed at a depth of 16 to 31 inches most likely due to spring influences. Depth to groundwater was greater than 40 inches at the base of the hill on the east side of the creek.

Groundwater monitoring of the site in November 11 1990 indicates groundwater flow approximately parallels the surface water flow and the surface water was about 0.3 feet lower than the groundwater in MW#3 (USFS 1990, in appendices of RCI 2007). A slight but measureable head differential existed, since the rock and concrete wall created some hydraulic separation.

3.9.2 Regulatory Setting

3.9.2.1 Federal Regulations

Clean Water Act

The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the Waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain nonpoint source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). Alpine County is within the jurisdiction of the Lahontan RWQCB (Region 6).

National Flood Insurance Policy Act

The Federal Emergency Management Agency (FEMA) is responsible for managing the National Flood Insurance Program, which makes federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

The National Flood Insurance Program, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation). To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements.

3.9.2.2 State Regulations

Porter Cologne Water Quality Control Act

The State of California established the State Water Resources Control Board (SWRCB), which oversees the nine RWQCBs, through the Porter-Cologne Water Quality Control Act (Porter-Cologne). Through the enforcement of Porter Cologne, the SWRCB determines the beneficial uses of the waters (surface and groundwater) of the State, establishes narrative and/or numerical water quality standards, and initiates

policies relating to water quality. The SWRCB and, more specifically, the RWQCB, is authorized to prescribe Waste Discharge Requirements (WDRs) for the discharge of waste, which may impact the Waters of the US. Furthermore, the development of water quality control plans, or Basin Plans, are required by Porter-Cologne to protect water quality.

Lahontan Regional Water Quality Control Board

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the Regional Water Quality Control Boards conduct planning, permitting, and enforcement activities. As noted above, the Project Area lies within the jurisdiction of the Lahontan RWQCB.

The Lahontan RWQCB administers the NPDES stormwater permitting program for both construction and industrial activities. A construction site disturbing one acre or more of land is subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a SWPPP, which also must be completed before construction begins. Implementation of the plan starts with the commencement of construction and continues through the completion of the Project. Upon completion of the Project, the applicant must submit a Notice of Termination to the RWQCB to indicate that construction is completed.

3.9.2.3 Local Regulations

Alpine County General Plan

G. P. GOAL NO. 6 IMPROVE AND MAINTAIN THE QUALITY OF ALPINE COUNTY'S SURFACE WATER RESOURCES IN COOPERATION WITH THE LAHONTAN AND CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARDS

3.9.3 Impact Analysis

The Proposed Project impacts from construction and operations related impacts to hydrology and water quality are identified in Table 3.16 with detailed discussions following.

Table 3.16 CEQA Checklist for Hydrology and Water Quality

IX. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

Table 3.16 CEQA Checklist for Hydrology and Water Quality

IX. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☐	☒
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

a) Less-than-Significant with Mitigation. The Project will result in long-term improvements to water quality protection, and any temporary adverse impacts will be less than significant with mitigation.

The Project will result in sewer system modifications that would reduce the potential for waste discharge violations over the long-term, since aging sewer pipelines, manholes, and the pump station would no longer be expose to flooding.

The Project will improve the alignment, profile, and drainage of along the MPUD access road, which will reduce potential erosion and sedimentation.

The Project would restore a functional, vegetated floodplain connected to Markleeville Creek that would reduce the potential for erosion to release sediment (including potentially contaminated sediment) during flood events.

The Project will remove residual artificial materials and fill sediments for proper off-site disposal, reducing the potential for entrainment during flood events.

The Project will raise and stabilize the profile of Millberry Creek, eliminating the existing channel sediment sources and providing opportunities for sediment retention on the restored floodplain.

These would be long-term water quality benefits of the Project. Short-term risk of water quality degradation during construction and until vegetation is re-established would be minimized by the Project's commitments in the specifications, along with the following mitigation measures.

Temporary erosion/runoff best management control measures would be implemented during construction to minimize storm water pollution resulting from erosion and sediment migration from the construction, borrow, and staging areas. These temporary control measures would include implementing construction staging in a manner that minimizes the amount of area disturbed at any one time; secondary containment for storage of fuel and oil; and the management of stockpiles and disturbed areas by means of earth berms, diversion ditches, straw wattles, straw bales, silt fences, gravel filters, mulching, re-vegetation, and temporary covers as appropriate. Erosion and storm water pollution control measures would be consistent with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities requirements, and would be included in a site specific Storm Water Pollution Prevention Plan (SWPPP).

After completion of construction activities, the temporary facilities would be demobilized and site restoration measures would be implemented to minimize soil erosion. Site restoration measures for areas disturbed by construction activities, including the borrow area and laydown/staging areas, may include regrading, reseeding, construction of permanent diversion ditches, use of straw wattles and bales, application of straw mulch, and other measures deemed appropriate to meet all applicable erosion control requirements.

b) Less-than-Significant. The Project would not create any groundwater demand, adversely modify groundwater recharge, or lower water tables.

The Project would restore topography, soils and vegetation on the previously disturbed portions of the site to more natural conditions. These changes would result in more frequent surface water inundation to recharge shallow ground water for the benefit of on-site ecological conditions. The Project would also remove the existing floodwalls, which may impede lateral movement of shallow groundwater, thus restoring more natural connectivity between Markleeville Creek and soil moisture and shallow groundwater on the site. These would be beneficial localized effects.

c) Less-than-Significant. The Project will modify drainage on the site, but not in a manner that will result in substantial erosion or siltation on- or off- site.

The Project will remove the surface and sub-surface drainage impediments that are present due to the existing floodwalls as part of the restoration of a functional floodplain. The floodwall removal will be combined with fill removal and re-vegetation treatments such that the drainage changes will not increase erosion and sedimentation risks.

The Project will modify the banks of Markleeville Creek downstream of the Caltrans Right-of-Way (ROW) by removing the existing floodwalls and reconstructing low streambanks comprised of rock, large woody debris, and living vegetation. These changes will allow for a more naturally deformable, but geomorphically stable streambank that could experience minor erosion during flood events. However, the design standards in the plans and details ensure that the new banks will be stable up to the 25-year event and that potential erosion from the site during larger floods would be similar to existing conditions.

The Project will modify the alignment and profile of Millberry Creek, but in a manner that will reduce the channel as a sediment source and provide an opportunity for net sediment retention on the reconnected floodplain.

d) Less-than-Significant. The Project will modify the drainage pattern of the site, and would reconnect the natural floodplain to the creeks, but would not increase runoff volumes or flooding hazards on- or off- the site.

The Project will remove the floodwalls and excavate fill material to reconstruct more natural floodplain topography and allow overflow from the creeks to occur during typical small flood events (i.e., during smaller 2- and 5- year events), rather than just occurring during larger, more potentially damaging events. The Project will not increase the area of impervious surfaces and will re-vegetate barren areas. Therefore, no increase in runoff volumes or peak flows generated on site would be expected.

e) **Less-than-Significant**. The Project would not create or contribute runoff to a stormwater drainage system and would provide stormwater treatment benefits within the site. This would be a less-than significant impact.

f) **No Impact**. The Project would not result in any other temporary or permanent risks to water quality.

g) **No Impact**. The Project would not include any housing.

h) **Less-than-Significant**. The Project would not place any structures within a 100-year flood hazard area, but will reduce impediments to flood flows within the site posed by existing infrastructure. This would be a less-than-significant beneficial impact. The resultant water surface elevations would be slightly lowered and the flood boundary would not be expanded for the 100-year event.

i) **No Impact**.

j) **No Impact**.

3.10 Land Use Planning

3.10.1 Environmental Setting

The Project is located within an established community and will create a publicly accessible open space with naturalized landscape and restored ecological functions, consistent with the applicable land use plans, policies, and the governing land use restrictions in the land transfer agreement executed between Alpine County and the USFS. The site previously had industrial land uses but restricted access as a functioning federal facility.

3.10.2 Impact Analysis

The potential land use and planning related impacts for the Proposed Project are summarized in Table 3.17 with detailed discussions following.

Table 3.17 CEQA Checklist for Land Use Planning

X. Land Use and Planning

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

Discussion

a) **No Impact**. The Project would not create any new barriers in the community and would establish formal public access opportunities at the site.

b) **Less-than-Significant**. The Project would not conflict with any applicable plans, policies, or regulations regarding land use of the site that are intended to avoid or mitigated environmental effects

c) No Impact. There are no applicable HCPs or natural community conservation plans.

3.11 Mineral Resources

3.11.1 Regulatory Setting

3.11.1.1 State Regulations

California Surface Mining and Reclamation Act of 1975 (SMARA)

The loss of regionally significant mineral resource deposits to land uses that preclude mining activities is one of the main emphasis that SMARA was designed to address. The law specifically mandates a two-phased process, commonly referred to as classification-designation, for mineral resources. The California Geological Survey (previously called the California Division of Mines and Geology) is responsible under SMARA for carrying out the classification phase of the process.

The California Mining and Geology Board is responsible for implementing the designation of areas within a production-consumption (P-C) region that contain significant deposits of Portland cement concrete (PCC)-grade aggregate (valued for its versatility and its importance in construction) that may be needed to meet the region's future demand. SMARA requires the State Geologist to classify lands into Mineral Resource Zones (MRZ) based on the known or estimated mineral resource potential of that land. The classification process is based solely on geology, without regard to land use or land ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of lands is recognized and considered in the land use planning process. The MRZ categories are as follows:

> MRZ-1. Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.

> MRZ-2. Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.

> MRZ-3. Areas containing mineral deposits the significance of which cannot be evaluated from available data.

> MRZ-4. Areas where available information is inadequate for assignment to any other MRZ.

In addition to mineral resource conservation, the SMARA regulates surface mining operations within California. The California Mining and Geology Board have established reclamation regulations that fulfill the reclamation requirements of SMARA.

3.11.2 Impact Analysis

Proposed Project impacts to mineral resources are identified in Table 3.18 with detailed discussions following.

Table 3.18 CEQA Checklist for Mineral Resources

XI. Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

Table 3.18 CEQA Checklist for Mineral Resources

XI. Mineral Resources

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

Discussion

a) No Impact.

b) No Impact.

3.12 Noise

3.12.1 Regulatory Setting

3.12.1.1 Federal Regulations

Environmental Protection Agency

The USEPA has identified the relationship between noise levels and human response. The USEPA has determined that over a 24-hour period, an equivalent continuous sound level (L_{eq}) of 70 decibels- A-weighted value (dBA) will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at a L_{eq} of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community

3.12.1.2 State Regulations

California Department of Transportation (Caltrans)

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 2011). The noise abatement criteria specified in the protocol are the same as those specified by Federal Highway Administration (FHWA).

3.12.1.3 Local Regulations

Alpine County General Plan

The Alpine County Noise Ordinance (County Code S 18.68.090) establishes compliance standards.

Table 3.19 Alpine County General Plan Maximum Allowable Noise Exposure by Land Use

Land Use Category	Maximum (dBA)[1]
Residential – Neighborhood (RN)	65
Residential Estates (RE)	60
Institutional (INS)	70

Table 3.19 Alpine County General Plan Maximum Allowable Noise Exposure by Land Use

Land Use Category	Maximum (dBA)[1]
Planned Development (PD)	70
Commercial Recreational (CR)	75
Commercial ©	75

Source: Alpine County Code http://www.codepublishing.com/CA/alpinecounty/?alpinecounty18/AlpineCounty1868.html#18.68.090

3.12.2 Impact Analysis

Potential noise impacts from operations and construction activities are addressed in Table 3.20 with detailed discussions following.

Table 3.20 CEQA Checklist for Noise

XII. Noise

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a) Less-than-Significant. The Project will not generate or modify long-term noise levels at the site or vicinity. Temporary noise during construction will be limited to meet County Code S 18.68.90.

b) Less-than-Significant. The Project will not generate or modify any long-term sources of groundborne vibration or noise. During construction, some procedures for the sewer system modifications may require subsurface activities that may create local vibration or noise, but these

would be low intensity and/or short duration and all sewer pipeline removals, abandonment and new sewer installations would be required to comply with the County Noise Ordinance.

c) No Impact.

d) No Impact.

e) No Impact.

f) No Impact.

3.13 Population and Housing

3.13.1 Impact Analysis

The potential impacts to population and housing are qualified in Table 3.21 with detailed discussions following.

Table 3.21 CEQA Checklist for Population and Housing

XIII. Population and Housing

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

Discussion

a) No Impact. The Project will not induce population growth directly or indirectly.

The Project will modify the existing MPUD sewer system infrastructure on the site, which will relocate and update the facilities to improved system-wide reliability, but the Project will not increase the capacity of the wastewater system.

b) No Impact. The Project will not modify any housing or any housing demand.

c) No Impact. The Project will not remove any housing or require any housing elsewhere.

3.14 Public Services

3.14.1 Impact Analysis

The Proposed Project impacts to public services are qualified in Table 3.22 with detailed discussions following.

Table 3.22 CEQA Checklist for Public Services

XIV. Public Services

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

Discussion

a) Less-than-Significant.

The Project would not substantially modify the need for fire protection services or police services on the site or in the community. The County is responsible for site maintenance as property owners.

The Project would not create any change in demands for school services or facilities.

The Project would provide a new community open space with formal public access, thus expanding the opportunities for recreation and environmental/cultural interpretation that is highly accessible in the urbanized core of Markleeville.

3.15 Recreation

3.15.1 Impact Analysis

Proposed Project Impacts to recreation are qualified in Table 3.23 with detailed discussions following.

Table 3.23 CEQA Checklist for Recreation

XV. Recreation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

Table 3.23 CEQA Checklist for Recreation

XV. Recreation

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

Discussion

a) No Impact. The Project will not modify the use of existing local or regional parks.

b) Less-than-Significant. The Project will include improved public access to the existing site, including the provision of formal vehicle parking and an ADA trail from the parking area to the restored floodplain, along with informal trails within the site. The environmental effects of construction and operation of these features are evaluated herein under relevant topics, but the Project would not induce any additional recreation demands.

The Project will provide on-site recreational improvements, but would not induce additional recreational demands within the community or region. The Project is a previously disturbed site, and the proposed paved areas are within the least environmentally sensitive portions of the site (disturbed and barren areas closest to the highway and adjacent urban land uses). The proposed site design concentrates these uses away from the restored ecological areas.

3.16 Transportation and Traffic

3.16.1 Impact Analysis

Proposed project impacts to transportation and traffic are qualified in Table 3.24 with detailed discussions following.

Table 3.24 CEQA Checklist for Transportation and Traffic

XVI. Transportation/Traffic

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒

Table 3.24 CEQA Checklist for Transportation and Traffic

XVI. Transportation/Traffic

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e. Result in inadequate emergency access?	☐	☐	☒	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion

a) **No Impact**. The Project will not have any impact on plans, ordinances, or policies regarding circulation systems.

b) **No Impact**. The Project will not conflict with any congestion management program.

c) **No Impact**. The Project will not change air traffic patterns.

d) **Less-than-Significant**. The Project will not increase any transportation hazards, and will result in beneficial changes to access to/from the public highway and to the MPUD access road within the site. This would be a less-than-significant impact.

The Project will remove the existing unpaved driveway along Highway 89 east of Markleeville Creek that does not meet typical Caltrans standards for size, angle, and sight lines. The Project will modify the existing paved driveway along Highway 89 west of Markleeville Creek to improve the configuration and drainage. The proposed driveway design will meet Caltrans standards for size, angle, and sight lines. Additionally, the Project will provide formal off-street parking accessible from the new driveway that meets federal and state standards for vehicle parking, including an ADA parking space.

e) **Less-than-Significant**. The Project will modify the existing MPUD access road alignment, profile, and roadside drainage within the site. The changes will provide a more reliable, safe and year-round access road for use by maintenance vehicles, including snow removal equipment. The maximum slope of the road will be reduced to five percent. The replacement of the Millberry Creek culvert and the improved roadside drainage from raising the road profile will prevent inundation of the road during large storms or ponding and icing hazards. Additionally, the relocation of the MPUD sewer pipeline within the access road alignment will eliminate the need for MPUD vehicles to enter inundated areas during flood emergencies.

f) No Impact.

3.17 Utilities and Service Systems

3.17.1 Impact Analysis

The Proposed Project impacts to utilities and service systems are qualified in Table 3.25 with detailed discussions following.

Table 3.25 CEQA Checklist for Utilities and Public Services

XVII. Utilities and Service Systems

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

Discussion

a) No Impact. The Project will not require wastewater services, and will have no effect on the ability of the MPUD wastewater system to meet treatment requirements.

b) Less-than-Significant. The Project will modify the MPUD wastewater system elements in the site to relocate facilities out of the active floodplain and replace aging features, but will not expand or enlarge system capacity. The effects of construction and operation would have a less than significant effect, including mitigation.

Two branches of an eight-inch gravity sewer line owned by the Markleeville PUD meet within the site and flow to the lift station that delivers wastewater to the system's treatment ponds. The lines serve the entire town and were constructed in approximately 1967. The sewer line crosses under Millberry Creek and

Markleeville Creek. The sewer line under Markleeville Creek is concrete encased steel, and the remainder is asbestos-lined concrete. Based on historic experience and hydraulic modeling of existing conditions, three of the existing sanitary sewer manholes may be inundated during the 25-year and greater runoff events, including the 100-year event.

The Project will replace the existing aging wastewater facilities that lie within the floodplain and cross under Markleeville Creek and Millberry Creek. The direct environmental effects of construction and operation of the modified sewer system are evaluated herein under relevant topics. The replacement and updates to the on-site wastewater facilities will extend the life span and reliability of service, improve safety and access for maintenance activities during normal and flood conditions, and reduce the risk of water quality degradation from leaks, spills or other potential failures. However, the Project will not expand the capacity or modify the service area of the wastewater system. Therefore the impacts would be less than significant.

c) Less-than-Significant. The Project will have a less than significant impact on stormwater drainage facilities and will result in beneficial changes to stormwater management on-site.

The Project will modify how stormwater is routed and treated within the site, which will provide several benefits: 1) stormwater conveyed to the site from the upstream watersheds will experience the natural treatment benefits of improved floodplain connectivity and enlarged floodplain areas along Markleeville and Millberry creeks; 2) less stormwater runoff will be generated on the degraded, un-vegetated former building pads and barren parking surfaces once soils and vegetation are restored; 3) stormwater from Hwy 89 that is not treated under existing conditions will be provided with appropriately sized permanent BMPs that pre-treat runoff prior to release onto the floodplain and/or Markleeville Creek; and 4) stormwater runoff that would be generated from the proposed parking lot will be managed by appropriately sized permanent BMPs included in the plans and specifications.

d) No Impact. The Project will have minor construction and re-vegetation phase water demands for dust control and establishment irrigation, but will not require any long-term water supply.

e) No Impact. The Project will not require wastewater services.

f) Less-than-Significant. The Project will require disposal of waste material during construction, which will be performed consistent with the plans and specifications and meet regulatory standards.

The Project plans and specifications incorporate measures to screen, sample, and test the artificial materials, rock, sediment, soils and organic debris that will be disturbed on-site for their suitability for desired reuses as well as to establish any special handling or disposal requirements.

g) Less-than-Significant.

3.18 Mandatory Findings of Significance

3.18.1 Impact Analysis

The mandatory findings of significance including potential impacts to sensitive resources, potential cumulative impacts and potential impacts to human beings are qualified in Table 3.26 and discussed below.

Table 3.26 CEQA Checklist for Assessing Project-Specific Mandatory Findings of Significance

XVIII. Mandatory Findings of Significance

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

Discussion – Mandatory Findings

a) No significant impacts to the environment would occur. Mitigations have been incorporated to reduce potential impacts to biological and cultural resources to a less-than-significant level, as summarized in Table 3. 27.

Table 27: Summary of Mitigation Measures

Mitigation Measure	Summary Description
BIO-1	Pre-construction plant survey within the project disturbance footprint shall be conducted a qualified biologist to identify any special status plants and create construction exclusion areas.
BIO-2	Pre-construction wildlife and amphibian surveys of the disturbance footprint would be conducted by qualified biologists to identify any special status wildlife and amphibian species present, designate exclusion zones, and/or perform removals.
BIO-3	Impacts to active nests will be avoided by the establishment and maintenance of buffers around the nests. The appropriate size and shape of the buffers will be determined by a qualified biologist in consultation with the CDFW, and may vary depending on the nest location, nest stage, and construction activity. No project activity will occur within the buffer area until the biologist confirms that the nest is no longer active. Monitoring will be conducted to confirm that the Project activities are not resulting in detectable adverse effects

	to the active nests.
CR-1	Prepare a Section 106 Cultural Resources Inventory and Evaluation Report and/or Historic Properties Survey Report, Historic Properties Evaluation Report, and Archaeological Survey Report
CR-2	Avoidance and Protection Measures for Rock Wall #1 of the National Register listed Alpine County Courthouse
CR-3	Construction Crew Education/Tailboard Meeting and Accidental Discovery of Archaeological Resources Procedures
CR-4	Preserve Human Remains if Encountered

b) No cumulative impacts would occur and no similar projects are planned.

c) No significant adverse direct or indirect impacts on humans would result.

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5 Appendices List – Volume II (separate document)

Markleeville Creek Floodplain Restoration Project
Alpine County, California

Initial Study/Mitigated Negative Declaration

Appendices - Volume II

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Appendix B	MPUD Sewer Diagrams
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