



**Auburn State Recreation Area  
Mammoth Bar  
General Biological Resources Evaluation**



Prepared for:

**California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation  
Division**

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## LIST OF ABBREVIATED TERMS

AMM	Avoidance and Minimization Measures
BMP	Best Management Practice
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRLF	California Red-legged Frog
CSSC	California Species of Special Concern
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
FESA	Federal Endangered Species Act
FYLF	Foothill Yellow-Legged Frog
GBRA	General Biological Resources Assessment
HCP	Habitat Conservation Plan
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NOAA Fisheries Service	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NPPA	Native Plant Protection Act
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WPT	Western Pond Turtle

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## 1 Introduction

This General Biological Resources Assessment (GBRA) report provides an evaluation of biological resources for the Mammoth Bar Motocross (MX) Track Repair Project (project) located at Mammoth Bar (project site), Auburn State Recreation Area in Placer County, California (Appendix A, Figure 1). The purpose of report is to identify potential sensitive biological resources within the project site, evaluate potentially significant impacts to sensitive resources resulting from project construction, and recommend impact avoidance, minimization, and mitigation measures in accordance with California Environmental Quality Act (CEQA) guidelines. This report will be used during project planning, environmental review, and in support of applications for resource agency permits, if required. This report includes the following sections:

- **Section 2 Project Location and Description:** an overview of the project
- **Section 3 Regulatory Setting:** a list of the federal, state, and local regulations that pertain to the project
- **Section 4 Methods:** includes the approach for field work and literature review
- **Section 5 Environmental Setting:** provides a description of the environmental conditions within the project site, including vegetation communities and associated wildlife habitat present, a discussion of special-status plant and wildlife species, and sensitive communities that are known to occur within the project site
- **Section 6 Biological Impact Assessment:** provides an evaluation of the potential impacts to biological resources that may occur as a result from the project and responses to the CEQA Guidelines Appendix G questions related to biological resources
- **Section 7 Conclusions and Recommendations:** provides recommendations to avoid or minimize impacts to biological resources, as needed, to ensure that the project remains in compliance with all applicable federal, state, and local regulatory requirements.

## 2 Project Location and Description

The project site is within the Auburn State Recreation Area in the Sierra Nevada foothills and is located approximately 30 miles northeast of Sacramento. The project site is situated within the Auburn U.S. Geological Survey (USGS) 7.5-minute quadrangle, Section 5 of Township 13 North, Range 9 East, M.D.B.&M. The majority of the project site is located on a river terrace adjacent to the Middle Fork of the American River (Middle Fork) and contains two motorcycle tracks, picnic areas, and an access road to Mammoth Bar that is used as a whitewater rafting access point. The project site also includes a portion of Mammoth Bar, a natural point bar along the Middle Fork. The land is owned by the federal government and managed by the Bureau of Reclamation. California Department of Parks and Recreation (CDPR) manages the project site for off-highway vehicle (OHV) recreation, and the area has been used by off road enthusiasts

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for nearly 25 years. The project site is approximately 17.5 acres and is surrounded by natural open space.

The Mammoth Bar motocross track was damaged from severe erosion caused by high river flows and flooding in early 2017 (Appendix B Photos). The soil erosion resulted in an unstable, nearly vertical cut bank with up to a 15-foot drop-off. Due to public safety concerns over the drop-off of the cut bank, Mammoth Bar has been closed since January 2017 and was partially re-opened in May 2018.

State Parks intends to re-open Mammoth Bar, including the Mini track, picnic area, and trails, in the near future. However, before re-opening the area, State Parks wants to ensure public safety and reduce potential sediment load into the Middle Fork by stabilizing the cut bank. Accordingly, State Parks proposes re-grading the vertical slope of the cut bank to a more gradual 2:1 slope. The resulting gradual slope will pose less of a safety concern and would minimize sediment load from future high river flows. Additionally, State Parks proposes to level the remaining MX track and stockpile the material for rebuilding of the MX track at a future date. The proposal describes rebuilding the MX track to the uppermost portion of the existing parking lot adjacent to the entrance kiosk, where it would be less likely damaged by erosion caused by high river flows and flooding. The proposed project footprint is approximately 8.26 acres (project footprint; Appendix A, Figure 2).

### **3 Regulatory Setting**

Sensitive biological resources in California are protected under federal, state, and local laws. Since the land is owned by the federal government, the proposed project is exempt from local municipal codes and general plan policies and therefore county and local regulations are not included in this report. However, federal and state laws apply to the proposed project. The following describes laws pertaining to biological resources found on the project site.

#### **3.1 Federal Endangered Species Act**

The Federal Endangered Species Act of 1973 (FESA), as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under FESA. FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States (U.S.) Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), (3) prohibitions against "taking" (i.e., harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take." FESA also discusses recovery plans and the designation of critical habitat for listed species. Both the USFWS and NOAA Fisheries Service share the responsibility for administration of FESA. During the NEPA review process, each agency is given the opportunity

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to comment on the potential of a proposed project to affect plants and animals listed, proposed for listing, or candidate for listing.

### **3.2 Migratory Bird Treaty Act**

The U.S. Migratory Bird Treaty Act (MBTA; 16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) states it is “unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof...” In short, under MBTA it is illegal to intentionally disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. It does not protect all birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA.

### **3.3 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, Title 50 Code of Federal Regulations [CFR] Part 22) prohibits the “take” of bald and golden eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. Take is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To disturb an eagle includes actions that result in the direct injury of an eagle, or activities that would substantially interfere with normal feeding, breeding, or sheltering behavior, or result in nest abandonment. The USFWS oversees implementation of the MBTA.

### **3.4 Clean Water Act**

The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA and the California State Water Resources Control Board enforces Section 401.

#### **3.4.1 Section 404**

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into “waters of the U.S.” “Waters of the U.S.” include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible

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banks and high-water marks. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater 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 soil conditions” (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE’s administration of the Section 404 program and may override a USACE decision with respect to permitting.

Substantial impacts to waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permits’ other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

#### 3.4.2 Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The “401 Certification” is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB).

The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities, and wastewater recycling. The RWQCB recommends the “401 Certification” application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application is not final until completion of environmental review under CEQA. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is proposed to be minimized, and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed.

#### 3.4.3 Section 402

The CWA has nationally regulated the discharge of pollutants to the waters of the U.S. from any point source since 1972. In 1987, amendments to the CWA added Section 402(p), which



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established a framework for regulating nonpoint source stormwater discharges under the National Pollutant Discharge Elimination System (NPDES). The NPDES is a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the U.S. In California, this permit program is administered by the RWQCBs. The NPDES General Construction Permit requirements apply to clearing, grading, and disturbances to the ground such as excavation. Construction activities on one or more acres are subject to a series of permitting requirements contained in the NPDES General Construction Permit. This permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to be implemented during project construction. The project sponsor is also required to submit a Notice of Intent (NOI) with the State Water Resources Control Board Division of Water Quality. The NOI includes general information on the types of construction activities that would occur on the site.

### **3.5 Magnuson-Stevens Fishery Act**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires all federal agencies to consult with NOAA Fisheries regarding all actions or proposed actions permitted, funded, or undertaken, that may adversely affect Essential Fish Habitat (EFH), which is defined as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The phrase “adversely affect” refers to the creation of any impact that reduces the quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alterations of the water or substrate. It additionally indicates the loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quantity and/or quality of the EFH. Federal activities that occur outside EFH, but may nonetheless have an impact on EFH waters, and substrate must also be considered in the consultation process.

EFH has been designated for various life stages of fish species managed with the Fisheries Management Plans under the Magnuson-Stevens Act. These species include Pacific Coast salmonid species, including Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*).

### **3.6 California Environmental Quality Act**

CEQA (Public Resources Code Section 21000 et. seq.) requires public agencies to review activities that may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an Initial Study and Negative Declaration (or Mitigated Negative Declaration) or with an Environmental Impact Report. Certain classes of projects are exempt from detailed analysis under CEQA.

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CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the state or federal ESAs but that meet specified criteria. The state maintains a list of sensitive, or “special-status,” biological resources, including those listed by the state or federal government or ranked by the California Native Plant Society (CNPS) as endangered, threatened, rare, or of special concern due to declining populations. During CEQA analysis for a proposed project, the California Natural Diversity Data Base (CNDDB) is usually consulted. CNDDB relies on information provided by the California Department of Fish and Wildlife (CDFW), USFWS, and CNPS, among others. Under CEQA, the lists kept by these and any other widely recognized organizations are considered when determining the impact of a project.

### **3.7 California Fish and Game Code**

#### **3.7.1 California Endangered Species Act**

The California Endangered Species Act (CESA; Fish and Game Code Section 2050 et seq.) generally parallels the federal Endangered Species Act. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. “Take” is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” This definition differs from the definition of “take” under FESA. CESA is administered by CDFW. CESA allows for take incidental to otherwise lawful projects but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

#### **3.7.2 Lake and Streambed Alteration Program**

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions in the application and, if necessary, prepares a Lake or Streambed Alteration Agreement that includes measures to protect affected fish and wildlife resources.

#### **3.7.3 Native Plant Protection Act**

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code Sections 1900 to 1913). The NPPA is administered by CDFW, which has the authority to designate native plants as endangered or rare and to protect them from take. CDFW maintains a list of plant species that have been officially classified as endangered, threatened, or rare.

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These special-status plants have special protection under California law, and projects that directly impact them may not qualify for a categorical exemption under the CEQA Guidelines.

#### 3.7.4 Fully Protected Species and Species of Special Concern

The classification of California fully protected (CFP) species was CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code (Section 5515 for fish, Section 5050 for amphibian and reptiles, Section 3511 for birds, Section 4700 for mammals) deals with CFP species and states that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species" (CDFW Fish and Game Commission 1998). Take of these species may be authorized for necessary scientific research. This language makes the CFP designation the strongest and most restrictive regarding the take of these species. In 2003, the code sections dealing with CFP species were amended to allow CDFW to authorize take resulting from recovery activities for state-listed species, and the Fish and Game Code has been further amended to allow CDFW to permit CFP take via a Natural Communities Conservation Plan.

California species of special concern (CSSC) are broadly defined as animals not listed under FESA or CESA, but which are nonetheless of concern to CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

#### 3.7.5 Nesting Birds

Nesting birds, including raptors, are protected under California Fish and Game Code Section 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." In addition, under California Fish and Game Code Section 3503.5, "it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Passerines and non-passerine land birds are further protected under California Fish and Game Code Section 3513. As such, CDFW typically recommends surveys for nesting birds that could potentially be directly (e.g., actual removal of

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trees/vegetation) or indirectly (e.g., noise disturbance) impacted by project-related activities. Disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.

### 3.7.6 Non-Game Mammals

Sections 4150-4155 of the California Fish and Game Code protect non-game mammals. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal.” Section 4000 of the California Fish and Game Code defines fur-bearing mammals as pine marten, fisher, wolverine, mink, river otter, gray fox, cross fox, silver fox, red fox, kit fox, raccoon, beaver, badger, and muskrat. A non-game mammal may not be taken or possessed except as provided in the Fish and Game Code or in accordance with regulations adopted by the Fish and Game Commission. The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as non-game mammals and are protected under the California Fish and Game Code regardless of whether they are also protected under an endangered species act.

### 3.8 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by CDFW (i.e., CNDDDB) or the USFWS. The CNDDDB identifies a number of natural communities as rare, which are given the highest priority for conservation efforts (Holland 1986; CDFW 2018). Impacts to sensitive natural communities and habitats must be considered and evaluated under CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

### 3.9 Porter-Cologne Water Quality Control Act

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as “waters of the State,” include isolated waters that are not regulated by the USACE. Any person discharging, or proposing to discharge, waste (e.g., dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

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## 4 Methods

This section describes the methods used to complete the biological resources evaluation. Methods include a database and literature review, field survey, a characterization of plant communities and wildlife habitats and migration corridors, an assessment of sensitive habitats and aquatic features, and a habitat evaluation for special-status species.

### 4.1 Database and Literature Review

Available background information pertaining to the biological resources on and in the vicinity of the project site was reviewed prior to conducting field surveys. Information was compiled and subsequently compared against site conditions during field surveys. The following sources were consulted:

- CNDDDB record search within a 10-mile radius of the property (CDFW 2018)
- CNPS Rare Plant Program *Inventory of Rare and Endangered Plants of California* record search within a 10-mile radius of property (CNPS 2018)
- USFWS list of endangered and threatened species and Critical Habitat record search for the property (IPac; USFWS 2018)
- Aerial photographs of the study area (Google Earth Pro 2018).
- PISCES: California Fish Data and Management Software (UC Davis 2018).
- California Herps, A Guide to the Amphibians and Reptiles in California (California Herps 2018)
- eBird: An online database of bird distribution and abundance (eBird 2018)
- NOAA Fisheries Essential Fish Habitat Mapper (NOAA 2018)
- The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012)
- Auburn State Recreation Area Mammoth Bar Jurisdictional Waters and Wetland Delineation Report (MIG 2018)

### 4.2 Field Survey

A reconnaissance-level biological survey of the project site was conducted on January 2 and 3, 2018 by MIG biologist David Gallagher. During the visit, signs (e.g., tracks, scat, and feathers) and sightings of wildlife, observed plant species, and habitats present within the project site were documented. The project site was also searched for any obvious burrows or dens that could provide habitat for some wildlife species.

### 4.3 Plant Communities and Wildlife Habitats

Plant communities were classified based on existing descriptions in “A Manual of California Vegetation, Second Edition” (Sawyer et al. 2009). However, for certain vegetation and land cover types, the system is too species-specific in its definitions of plant associations and alliances and does not accurately characterize the highly variable species composition of plant

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communities on the project site. In these cases, it was necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature.

All plant communities observed on the project site were evaluated to determine if they are considered sensitive relative to federal and state regulations. Sensitive natural communities are communities that are especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies. Elimination or substantial degradation of these communities would constitute a significant impact under CEQA.

Plant communities were mapped and photographed in the field using a tablet with an Arrow 100 sub-meter GPS receiver and a geo-spatial mobile-device application.

#### **4.4 Jurisdictional Habitats and Aquatic Features**

The project site was inspected for the presence of wetlands, drainages, streams, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that could be subject to jurisdiction by the USACE, RWCQB, or CDFW. Wetlands are defined for regulatory purposes in the 33 CFR 328.3 and 40 CFR 230.3 as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” To be considered subject to federal jurisdiction, a wetland must normally exhibit positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

#### **4.5 Special-Status Species Habitat Evaluation**

During the field survey, the MIG biologist evaluated the suitability of habitats to support special-status species documented in and within the vicinity of the property. For the purposes of this assessment, special-status species include:

- Species listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the FESA (73 Federal Register [FR] 75176, November 9, 2009).
- Species listed or proposed for listing by the state of California as threatened or endangered under the CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines, Section 15380).
- Plants listed as rare under the California NPPA (California Fish and Game Code, Section 1900 et seq.).
- Plants considered by CNPS to be “rare, threatened, or endangered in California” (California Rare Plant Rank [CRPR] 1A, 1B, 2, 3, and 4).
- Animal species listed as CSSC by the CDFW.

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- Animals listed as CFP by the CDFW (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

The potential occurrence of special-status plant and animal species within the project site was initially evaluated by developing a list of special-status species that are known to or have the potential to occur in or in the vicinity of the project site based on a search of current CNDDB, CNPS, and USFWS database records, as well as the biologist's knowledge of species' habitat characteristics and local distribution. The potential for occurrence of those species included on the list was later evaluated in the field based on the habitat requirements of each species relative to the conditions observed during the field survey. Plant species that have been documented to occur well outside of the elevation and geographic range of the project site were eliminated from further consideration. Each species was evaluated for its potential to occur in the project site according to the following criteria:

*Not Expected:* The species has been documented within a 10-mile radius of the project site, or the site is within the distribution range of the species, but there is no suitable habitat present within the project site (i.e., habitats are clearly unsuitable for the species requirements [e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime]). The species is not expected to be present at the project site.

*Low Potential:* The species is known to occur within a 10-mile radius of the project site or the site is within the range of the species, and limited suitable habitat is present (i.e., few of the habitat components meeting the species' requirements are present and/or the majority of habitat is unsuitable or of very low quality). Additionally, there is no habitat connectivity (if applicable) from the project site to areas with known occurrences of the species. The species has a low probability of being found.

*Moderate Potential:* The species is known to occur within a 10-mile radius of the project site or the site is within the range of the species, and suitable habitat is present (i.e., some of the habitat components meeting the species' requirements are present and/or the majority of the habitat is suitable or of marginal quality). Additionally, there is limited habitat connectivity (if applicable) from the project site to areas with known occurrences of the species. The species has a moderate probability of being found.

*High Potential:* The species is known to occur within a 10-mile radius of the project site or the site is within the range of the species, and highly suitable habitat is present (i.e., all habitat components meeting the species' requirements are present and/or the habitat is highly suitable or of high quality). Additionally, there are few or many recent occurrence records in the vicinity of the project site. There may also be habitat connectivity from the project site to areas with known occurrences of the species. The species has a high probability of being found.

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## 5 Environmental Setting

### 5.1 Project Site Description

The 17.5-acre project site is within the Auburn State Recreation Area and is located in the Sierra Nevada foothills approximately thirty miles northeast of Sacramento. Site elevation ranges from approximately 611 to 713 feet above mean sea level (MSL). The majority of the project site is situated on a natural terrace adjacent to the Middle Fork and contains two motorcycle tracks, picnic areas, and an access road to Mammoth Bar that is used as a whitewater rafting access point. The project site also includes a portion of Mammoth Bar, which is a natural point bar along the Middle Fork. The project site has been used by off road enthusiasts for nearly 25 years. The project site is surrounded by natural open space dominated by interior live oak-foothill pine-manzanita woodland (*Quercus wislizenii*, *Pinus sabiniana*, and *Arctostaphylos viscida* ssp. *viscida*).

The climate at the project site is Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Snowfall is rare. The summer is characterized by mild to hot temperatures. The 20-year average annual rainfall near the project site is 36.7 inches (Auburn weather station; NOAA 2018). Topography within the project site is generally level, but it slopes abruptly downward from north to south towards the Middle Fork and slopes gently from east to west. Elevations within the project site range from approximately 611 to 713 feet above mean sea level (Google Earth Pro 2018).

### 5.2 Plant Communities and Associated Wildlife Habitats

Vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. The plant communities in the project site were classified using A Manual of California Vegetation (Sawyer et al. 2009), where applicable.

The project site consists of riparian habitat and disturbed/developed habitat (Appendix A, Figure 3). Vegetation composition, level of site disturbance, and habitat types are prime factors in determining the suitability for use by certain wildlife species and the occurrence of certain plant species. Each habitat type and/or vegetation community is described as follows. A complete list of plant species observed within the study area is provided in Appendix D.

#### 5.2.1 Riparian Habitat (Mixed Willow Shrub)

Riparian habitat occupies approximately 4.1 acres within the project site and includes the vegetation on the gravel bars as well as along the margins and banks of the Middle Fork and the unvegetated areas (those areas stripped of vegetation during storm events) of the gravel bars. The project footprint contains approximately 1.5 acres of riparian habitat that will be directly impacted by the proposed project through vegetation clearing and earth moving activities. Riparian habitats provide an important transition zone between water (aquatic) and



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land (terrestrial) habitats. Because riparian habitats contain both aquatic and terrestrial plant and animal species, they have unusually high species diversity. Riparian areas provide essential breeding, nesting, feeding, and refuge habitats for many forms of waterfowl, other birds, mammals, amphibians, and reptiles (Appendix B Photos).

The dominant tree within this community type is Fremont's cottonwood (*Populus fremontii*). Dominant shrubs include arroyo willow (*Salix lasiolepis*), red willow (*S. laevigata*), sandbar willow (*S. exigua*), and California blackberry (*Rubus ursinus*). Herbaceous plants in the understory include curly dock (*Rumex crispus*), sheep sorrel (*R. acetosella*), rough cocklebur (*Xanthium strumarium*), wild mustard (*Hirschfeldia incana*), woolly mullein (*Verbascum Thapsus*), tall flatsedge (*Cyperus eragrostis*), and American bird's foot trefoil (*Acmispon americanus* var. *americanus*).

#### 5.2.2 Disturbed/Developed Habitat (Ruderal)

Disturbed habitat includes land regularly cleared of vegetation (e.g., agricultural land), lands containing a preponderance of non-native plant species, or areas regularly disturbed by human activities. This type of habitat can also include areas that are mowed regularly, which precludes the development of native vegetation communities. Additionally, this habitat can include developed lands, which are areas that lack vegetation. Generally, developed land is characterized by permanent structures, impervious surfaces, or unpaved high-use areas.

Within the project site, disturbed habitat includes the unpaved access road and unpaved tracking areas adjacent to the parking area, helipad, access road, the MX track, the Mini Track, maintenance shed, kiosk, ramadas. The project footprint also includes disturbed/developed habitat. These areas are developed or regularly cleared of vegetation and subject to regular human disturbance.

Trees observed on the January 2-3, 2018 project site visit within areas classified as disturbed/developed habitat include black locust (*Robinia pseudoacacia*), California foothill pine (*Pinus sabiniana*), and interior live oak (*Quercus wislizeni*). Herbaceous plants include broad leaf filaree (*Erodium botrys*), red stemmed filaree (*E. cicutarium*), foothill filaree (*E. brachycarpum*), California blackberry (*Rubus spp.*), rough cocklebur, wild mustard (*Brassica campestris*), woolly mullein, tall flatsedge, American bird's foot trefoil, curly dock, and naked buckwheat (*Erigonum nudum* var. *oblongifolium*).

The trees, shrubs, and structures within and in the vicinity of the project site provide suitable nesting habitat for birds and may provide suitable roosting habitat for cavity and leaf roosting bats.

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### 5.2.3 Wildlife Observed

Birds observed during the January 2-3, 2018 project site visit include black phoebe (*Sayornis nigricans*), northern flicker (*Colaptes auratus*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), ruby-crowned kinglet (*Regulus calendula*), red-tailed hawk (*Buteo jamaicensis*), and California towhee (*Melospiza crissalis*). One mammal species observed during the site visit includes black-tailed jackrabbit (*Lepus californicus*). Wildlife tracks observed include wild turkey (*Meleagris gallopavo*) and black-tailed deer (*Odocoileus hemionus columbianus*). Scat from coyote(s) (*Canis latrans*) was also observed.

### 5.3 Aquatic Features, Wildlife Movement Corridors, and Sensitive Habitats

Based on an assessment of the waters of the U.S., including wetlands, using the Wetland Delineation Manual (Environmental Laboratory 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a), and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b), the project site is adjacent to a jurisdictional water: the Middle Fork of the American River, which is a Traditional Navigable Water (TNW). The project site does not contain wetlands as defined by the USACE using the three parameters of hydrology, hydrophytic vegetation, and hydric soils (MIG 2018).

The Middle Fork provides suitable habitat for amphibians and reptiles, including several special-status species (see Section 5.4). None were observed during the field survey. Several native fish species are known to occur in the Middle Fork, including rainbow trout (*Oncorhynchus mykiss*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis*), and riffle sculpin (*Cottus gulosus*). Historically, both the Central Valley steelhead and Central Valley spring chinook (*Oncorhynchus tshawytscha*) were found in the Middle Fork. However, the Folsom Dam currently prevents passage upstream into the North and Middle Forks of the American River. Both species are listed as threatened under the ESA.

Jurisdictional waters were delineated within the project site by interpreting and mapping the OHWM, following established USACE criteria. A preliminary map of USACE jurisdictional other waters is provided in Appendix A, Figure 4. However, no work will be conducted below the OHWM of the Middle Fork according to the Auburn State Recreation Area Mammoth Bar Jurisdictional Waters and Wetland Delineation Report (MIG 2018). Based upon results of the jurisdictional delineation, Section 401/404 permits under the Clean Water Act are not expected to be required for the proposed project; however, this conclusion will need to be formally verified by the USACE and RWQCB.

All ecological systems associated with drainages (i.e., riparian vegetation) and drainage and pond features with bed and bank topography may be regulated by Sections 1600-1616 of the California Fish and Game Code. The project site contains riparian habitat and drainage features

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associated with the Middle Fork as defined by Sections 1600-1603 of California Fish and Game Code and may be subject to jurisdiction by CDFW.

Continuous riparian buffers also provide important wildlife migration corridors, which are critical “movement highways” for terrestrial species such as mammals and reptiles as well as for water dependent species such as amphibians and waterfowl. Wildlife corridors play an important role in countering habitat fragmentation. A wildlife corridor is a landscape element that serves as a linkage between historically connected habitats or landscapes that are otherwise separated and provides avenues along which wildlife can travel, migrate, and meet mates; plants can propagate; genetic interchange can occur; populations can move in response to environmental changes and natural disasters; and individuals can re-colonize habitats from which populations have been locally extirpated. Corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands and roadside vegetation), continuous lineal strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas of known or likely importance to local wildlife.

EFH is defined by NOAA as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” According to NOAA’s EFH online mapping tool, the project site is not within or adjacent to EFH for any fish species.

There is no critical habitat designation within or in the vicinity of the project site by USFWS or NOAA Fisheries. Other than riparian habitat, which is regulated by the California Fish and Game Code, no other sensitive natural community types, as defined by CDFW or CNPS, are present on or in the vicinity of the project site.

#### **5.4 Special-Status Species**

Based on a review of the CNDDDB and CNPS databases, the biologist’s knowledge of sensitive species that could occur in the site vicinity, and an assessment of the types of habitats within the project site, it was determined that 10 special-status species (1 fish species, 2 amphibian species, 1 reptile species, 3 bat species, and 3 bird species) have a high to moderate potential to occur within or near the project site. This determination was made due to the presence of essential habitat requirements for the species, the presence of known occurrences within five miles of the project site, and/or the project site is within the species known range of distribution.

A list of special-status plant and wildlife species with occurrences within 10 miles of the project site that were determined to have no potential or low potential to occur within the project site is provided in Appendix C (Tables 1 and 2). Special-status species whose habitat requirements are clearly not met within or adjacent to the project site were excluded from the list (e.g., vernal pool obligate). No special-status species were observed during the January 2-3, 2018 project site survey.

No special-status plant species are expected to occur within the project site. This determination was made due to the lack of essential habitat requirements for the species, the lack of known

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occurrences close to the project site, lack of connectivity with areas of suitable or occupied habitat, and/or the project site is not within the species' known range of distribution.

#### 5.4.1 Special-Status Fish with Potential to Occur within the Project Site

##### *Hardhead*

Hardhead (*Mylopharodon conocephalus*) is listed as a California Species of Special Concern. Hardhead range throughout the Central Valley, Sierra foothills, portions of the San Francisco Bay Area, and the Modoc plateau. Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs. In small streams, hardhead tend to spawn near their resident pools, while fish in larger rivers or lakes often move up to 20-50 miles to find suitable spawning grounds. Most hardhead reach sexual maturity at three years and spawn in the spring around April-May, though spawning may take place as late as August.

Hardhead have been reported from the North and South Fork of the American River watersheds, which includes the Middle Fork watershed. Therefore, hardhead is assumed to be present within the Middle Fork, which is adjacent to the project site.

#### 5.4.2 Special-Status Amphibians and Reptiles with Potential to Occur within the Project Site

##### *California Red-Legged Frog*

California red-legged frog (*Rana draytonii*; CRLF) is listed as a threatened species under FESA and is designated a California Species of Special Concern. Endemic to California and northern Baja California, CRLF is distributed throughout 26 counties in California. Historically, this species was found along the coast and Coast Ranges from Mendocino County in northern California south to northern Baja California, and inland east through the northern Sacramento Valley into the foothills of the Sierra Nevada mountains, south to Tulare county, and possibly Kern county. They probably did not occur in the Central Valley due to annual floods.

CRLF predominantly inhabit permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral drainages in valley bottoms and foothills up to approximately 1 mile in elevation (Jennings and Hayes 1994, Bulger et al. 2003, Stebbins 2003). CRLF breed between November and April in standing or slow-moving water at least 0.7 meters (2½ feet) in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Schoenoplectus* spp.) or overhanging willows (*Salix* spp.; Hayes and Jennings 1988). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days. Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity at 2 to 3 years of age (Jennings and Hayes 1994). CRLF breed in a variety of aquatic habitats. Larvae and metamorphs use streams, deep pools, backwaters of streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons.

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Breeding adults are commonly found in deep (more than 2 feet), still or slow-moving water with dense, shrubby riparian or emergent vegetation. Adult frogs have also been observed in shallow sections of streams that are not shrouded by riparian vegetation. Generally, streams with high flows and cold temperatures in spring are unsuitable for eggs and tadpoles. Stock ponds are frequently used by this species for breeding if they are managed to provide suitable hydro-period, pond structure, vegetative cover, and control of nonnative predators such as bullfrogs and exotic fish. Most adult CRLF migrate away from breeding ponds to upland and/or drier areas after the breeding season. The distance moved is site dependent, though one recent study (Marin County) shows that only a few frogs move farther than the nearest suitable non-breeding habitat. In this Marin County study, the farthest distance traveled was 2.25 miles, and most dispersing frogs moved through grazed pastures to reach the nearest riparian habitat (Fellers and Kleeman 2007). Bulger et al. (2003) did not observe habitat preferences among frogs moving between ponds. They did note that when breeding ponds dry, CRLF use moist microhabitats of dense shrubs and herbaceous vegetation within 350 feet of ponds.

The largest Sierra Nevada population of CRLF is located at Big Gun Preserve, near Foresthill in the Middle Fork watershed as well as other locations within the Middle Fork and North Fork watersheds. The Middle Fork adjacent to the project site does not support the typical slow-moving/stagnant water breeding habitat for CRLF, based on a field assessment of site conditions and the lack of other suitable wetlands in the area. However, the Middle Fork provides suitable dispersal habitat via seasonally slow-moving waters and seasonal vegetated refugia habitat for CRLF. Based on suitable habitat and known occurrences, there is a moderate potential for CRLF to occur within the project footprint.

*Foothill Yellow-Legged Frog*

Foothill yellow-legged frog (*Rana boylei*; FYLF) is proposed to be listed as threatened under CESA and is a CSSC. The largest remaining populations in California are in the northern coast ranges, particularly in the Smith River, tributaries of the Klamath River, the South Fork Trinity River, the South Fork Eel River, Redwood Creek, coastal tributaries in Mendocino County, and Russian River tributaries. This frog originally ranged from northern Oregon west of the Cascades south along the coast ranges to the San Gabriel Mountains, and south along the foothills of the western side of the Sierra Nevada Mountains to the edge of the Tehachapi Mountains. FYLF has disappeared from much of its range in California (possibly up to 45 percent) and is also gone from an estimated 66 percent of its range in the foothills of the Sierra Nevada Mountains, especially south of Interstate 80 where it is nearly extinct. Water released from reservoirs, which washes away eggs and tadpoles and forces adult frogs away from the streams leaving them more vulnerable to predators, is a serious problem for frogs in the Sierra Nevada foothills. Air-borne pesticides from the vast agricultural fields of the Central Valley are also likely to be a primary threat.

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Recreational activities along streams that alter streambeds, especially gold mining, are also having a negative impact on frog populations in the Sierra foothills. Introduced fish also stress frog populations by consuming eggs and tadpoles, and introduced bullfrogs compete for food and eat the frogs. Habitat loss, disease, introduced crayfish, stream alteration from dams, mining, logging, and grazing are also threats to this frog.

This species frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. FYLF is sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. FYLF needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.

There are known occurrences of FYLF from several locations on the Middle Fork upstream of the project site as well as locations on the North and South Forks. The most recent observation is from 2007 approximately 4 miles upstream at Poverty Bar. Based on a field assessment of site conditions, the Middle Fork adjacent to the project site provides suitable breeding, dispersal, and foraging habitat for this species. Additionally, the riparian habitat within the project site, including the project footprint, provides suitable FYLF dispersal and refugia habitat. Based on suitable habitat and known occurrences, there is a moderate potential for FYLF to occur within the project footprint.

#### *Western Pond Turtle*

Western pond turtle (*Emys marmorata*; WPT) is designated as a CSSC. WPT range throughout most of California except for the deserts and east of the Sierra Nevada. WPT is often seen basking above the water but will quickly slide into the water when it feels threatened. The species is active from around February to November and may be active during warm periods in winter. WPT hibernates underwater, often in the muddy bottom of a pool, and may estivate during summer droughts by burying itself in soft bottom mud. When creeks and ponds dry up in summer, some turtles that inhabit creeks will travel along the creek until they find an isolated deep pool. Others stay within moist mats of algae in shallow pools, while many turtles move to woodlands above the creek or pond and bury themselves in loose soil where they will overwinter.

WPT are normally found in and along riparian areas, although gravid females have been reported up to a mile away from water in search of appropriate nest sites. The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Typically, the female excavates a nest in hard-packed clay soil in open habitats (usually on south-facing slopes) within a few hundred yards of a watercourse.

WPT have been documented in the Upper North Fork American River and Lower Middle Fork watersheds (Tetra Tech 2007). The Middle Fork adjacent to the project site provides suitable breeding and foraging habitat for this species. Additionally, the riparian and upland habitat within

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the project site, including the project footprint, provides suitable dispersal, basking, and nesting habitat for WPT. Based on suitable habitat and known occurrences, there is a moderate potential for WPT to occur and nest within the project footprint.

#### 5.4.3 Special-Status Bird Species with Potential to Occur within the Project Site

##### *White-tailed Kite*

The white-tailed kite (*Elanus leucurus*) is a CFP and is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

White-tailed kites have been documented numerous times in the immediate and greater regional vicinity of the project site (eBird 2018). They are relatively adaptable to nesting habitat and may use trees within and directly adjacent to the project site, but they may be deterred by the relatively high level of human disturbance. This species has a moderate potential of nesting within the project site.

##### *Yellow Warbler*

Yellow warbler (*Setophaga petechia*) is designated as a CSSC. It is a summer resident from March through October and breeds from April through July. It mainly breeds in riparian vegetation in close proximity to water along streams and in wet meadows. This species is mainly found in willows and cottonwoods, foraging from low levels up to treetops to take insects, and winters in the tropics. Habitat loss and degradation are most likely the greatest threat to this species.

Yellow warblers have been documented in the Auburn State Recreation Area with many years of observations, including an observation within the project site in 2012 and along the Quarry trail near the project site in 2017 (eBird 2018). There is suitable riparian breeding habitat within the project site. Based on suitable habitat and known occurrences, there is a high potential for yellow warbler to occur and breed within the project site, including the project footprint.

##### *Yellow-Breasted Chat*

Yellow breasted chat (*Icteria virens*) is designated as a CSSC. It is a summer resident from March to September and breeds from April through August. It mainly breeds in early

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successional riparian habitat with a well-developed, dense shrub layer and open canopy. It winters in the tropics, where it is found in open scrub and woodland edges in lowland areas. Yellow-breasted chats forage by searching among foliage among dense low tangles or by perching to eat insects and berries. Habitat loss and degradation are most likely the greatest threat to this species.

This species has been documented in the Auburn State Recreation Area with many years of observations, including an observation within the project site in 2006 and at the Cool Cave Quarry area in 2015 (eBird 2018). There is suitable riparian breeding habitat within the project site. Based on suitable habitat and known occurrences, there is a high potential for yellow breasted chat to occur and breed within the project site, including the project footprint.

*Migratory Birds and Raptors*

Nesting birds likely inhabit the dense shrub and tree cover within and surrounding the project site, including the project footprint. Numerous passerines were noted during the field survey, and ample nesting materials and nesting sites occur adjacent to and within the project site, including the project footprint.

5.4.4 Special-Status Mammals with Potential to Occur within the Project Area

*Pallid Bat*

Pallid bat (*Antrozous pallidus*) is designated a CSSC. This species of bat ranges from western Canada to central Mexico. Pallid bats are typically found in arid or semi-arid habitats, often in mountainous or rocky areas near water. They are also found over open, sparsely vegetated grasslands. During the daytime, pallid bats typically roost in caves, cracks, and crevices, which may include tile roofs, exfoliating bark of trees, rocky outcrops, or inside buildings. A night roost is usually less protected than a day roost; for example, open porches or ramadas may be used as night roosts by this species. In the wintertime, this species may experience short periods of torpor, often in buildings, caves, or cracks in rocks.

Pallid bats are insectivores that feed on arthropods such as crickets and are capable of consuming up to half their weight in insects every night. Pallid bats are gleaners, capturing prey from the ground and transporting it to their night roost for consumption. Like the majority of bat species, pallid bats are capable of using echolocation while foraging and traveling from their roost sites to foraging grounds. However, they may also opt to not echolocate while foraging, and instead use their large ears to locate insects on the ground. This nocturnal species is sensitive to noise disturbance when roosting during the day.

Pallid bats have been documented in riparian areas in the Sierra Nevada foothills and within Placer County near the South Fork of the American River as recently as 2017 (CDFW 2018). This species may roost within large tree cavities (if present) or structures within the project site.



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Pallid bat may also forage within the project site. While the species was not observed during the site visit, the project site provides suitable roosting and foraging habitat. Therefore, pallid bat is considered to have a moderate potential to occur, including the within the project footprint.

*Townsend's Big-Eared Bat*

Townsend's big-eared bat (*Corynorhinus townsendii*) is designated as a CSSC. It is a medium-sized bat with extremely long, flexible ears, and small yet noticeable lumps on each side of the snout. They are found in a variety of habitats from forests to desert scrub and prefer to roost in open caves. However, this species will use a variety of other roost types, particularly abandoned buildings, mines, tunnels, and tree cavities. When roosting, Townsend's big-eared bats prefer large open areas and do not tuck themselves into cracks and crevices like many other bat species. This species is sensitive to disturbance, and it has been documented that they will abandon roost sites after human interference.

Townsend's big-eared bat hibernates throughout its range during winter months when temperatures are between 0°C and 11.5 degrees Celsius (32-53 degrees Fahrenheit). While hibernating, it hangs alone or in small groups in the open, with fur erect to provide maximum insulation and with ears coiled back. These bats emerge late in the evening to forage and are swift, highly maneuverable fliers. Prey items include small moths, flies, lacewings, dung beetles, and sawflies.

Townsend's big-eared bat has been documented in the Sierra Nevada foothills within Placer County (CDFW 2018). This species may roost within large tree cavities (if present) in both riparian and upland habitats. The project site provides foraging habitat and may provide suitable roosting habitat, although a formal roost assessment survey is needed to verify. Therefore, Townsend's big-eared bat is considered to have a moderate potential to occur within the project site, including within the project footprint.

*Western Red Bat*

Western red bat (*Lasiurus blossevillei*) is designated as a CSSC. The western red bat roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. This bat species prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. They are solitary by nature but will gather in larger nursery roosts during the summer.

Western red bat has been documented within riparian areas in the Sierra Nevada foothills (Harris NDG). This species may roost in the foliage of riparian vegetation within the project site and may also forage within the project site. Since the project site provides suitable roosting and foraging habitat, western red bat is considered to have a moderate potential to occur within the project site, including the project footprint.

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### *Other Bat Species*

Bats tend to forage and roost near water sources. Therefore, bat species have the potential to roost within trees and forage in the project site. A number of other bat species are known from riparian corridors of the Sierra Nevada foothills, including hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), Yuma myotis (*M. yumanensis*), long-eared myotis (*M. evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), big brown bat (*Eptesicus fuscus*), and western pipistrelle (*Pipistrellus hesperus*). Disturbance of maternity colonies or day roosts, or direct mortality of any species of bat could be considered significant under CEQA guidelines.

## **6 Biological Impact Assessment**

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and waters of the U.S. and the State—that may occur in or near the project site. Each impact discussion includes Avoidance and Minimization Measures (AMMs) that should be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. A complete list of AMMs is included in the Conclusions and Recommendations section. With the implementation of the AMMs, all impacts to biological resources are anticipated to be reduced to less than significant under CEQA. In addition, this section describes the regulatory permits that are anticipated to be required for construction of the proposed project.

### **6.1 Significance Criteria**

Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the proposed project would:

- 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 CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- 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

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- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP

Direct take of a federally- or state-listed species is considered a significant impact. Temporary and/or permanent habitat loss is not considered a significant impact to special-status species (other than for listed or candidate species under the FESA and CESA) unless a significant percentage of total suitable habitat throughout the species' range is degraded or somehow made unsuitable, or areas supporting a large proportion of the species' population are substantially and adversely impacted.

Potential impacts to nesting bird species will be considered significant due to their protection under the MBTA and California Fish and Game Code. Potential impacts to roosting bats would be considered significant due to their protection under the California Fish and Game Code. Such impacts will need to be avoided through AMMs incorporated into the project.

## **6.2 Sensitive Species – Less-than-Significant Impact with Mitigation**

### **6.2.1 Special-Status Animals**

Hardhead is assumed to be present within the Middle Fork adjacent to the project site. The project could result in temporary impacts to hardhead by increasing sediment and erosion within the riparian corridor. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include, but are not limited to, conducting an environmental awareness training for construction personnel and implementing Best Management Practices (BMPs). These AMMs and BMPs are detailed in Section 7 (Conclusions and Recommendations), sub section 7.1 (Sensitive Habitats and Jurisdictional Features).

The Middle Fork adjacent to the project area provides suitable breeding, foraging, and dispersal habitat for CRLF, FYLF, and WPT. Additionally, all three species have a moderate potential to occupy the upland riparian areas within the project site. WPT also has a moderate potential to nest in the upland areas within the project site. Direct impacts to CRLF, FYLF, or WPT could occur if individuals move into work areas and become trapped or crushed. In addition, the project could result in temporary impacts to these species by increasing sediment and erosion in the creek. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include, but are not limited to, conducting an environmental awareness training for construction personnel, implementing BMPs, installation of a wildlife exclusion fence, and a pre-construction survey for CRLF, FYLF, and WPT.

### **6.2.2 Roosting Bats**

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There is a moderate potential for pallid bat, Townsend's big-eared bat, western red bat, and other bat species to forage and roost within the project site, including the project footprint. Removal or disturbance of roost habitat may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed. Direct impact to roosting bats may occur as a result of the removal of trees and/or structures. Indirect impacts include noise and vibration associated with construction activities that may result in the flushing of roosting bats, thereby exposing them to an increased risk of predation and/or abandonment of a colony or maternity roost. However, with the implementation of AMMs in Section 7.2, the impacts from the project would be less than significant. These AMMs include a pre-construction bat survey and procedures in the event of species discovery.

6.2.3 Nesting Birds (including White-tailed Kite, Yellow-Breasted Chat, and Yellow Warbler)

Nesting birds, including raptors, protected under the MBTA and California Fish and Game Code are potentially present in the trees, shrubs, and structures in the project sit, including the project footprint. Additionally, white-tailed kite, yellow warbler, and yellow-breasted chat have a moderate to high potential to nest in or adjacent to the project site. If construction activities occur during the avian breeding season (February 1 to September 15), injury to individuals or nest abandonment could occur. In addition, noise and increased construction activity could temporarily disturb nesting or foraging activities, potentially resulting in the abandonment of nest sites. However, with the implementation of recommended AMMs in Section 7.2, the impacts from the project would be less than significant. These AMMs include a pre-construction nesting bird survey, if construction is scheduled during the breeding season, and consultation with CDFW and/or USFWS, as appropriate, if an active nest is discovered. An active nest can result in a delay in construction.

6.2.4 Bald Eagle, Golden Eagle, and Peregrine Falcon

Bald eagle, golden eagle, and peregrine falcon may forage within the project site vicinity. Construction activities may temporarily disturb the species; however, there are suitable habitat areas nearby that provide alternate foraging locations (e.g., natural open space upstream and downstream of the project site) that all three species may move to during construction activities. The project would result in a less-than-significant impact to bald eagle, golden eagle, and peregrine falcon that are foraging within the project site.

As stated previously, bald eagle, golden eagle, and peregrine falcon have a low potential to nest within the project site, including the project footprint, due to developed and disturbed conditions and a lack of suitable nesting habitat. In the unlikely case that nesting bald eagles, golden eagles, or peregrine falcons are discovered within the project site, AMMs found in Section 7.2 for nesting birds (pre-construction surveys and wildlife agency consultation in case of discovery) would apply to these three raptors as well. These AMMs would reduce impacts to nesting bald eagles, golden eagles, and peregrine falcons to less-than-significant levels.

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### **6.3 Sensitive Natural Vegetation Communities – Less-than-Significant Impact with Mitigation**

Sensitive vegetation communities include riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or designated by the USFWS and CDFW. The project site contains the Middle Fork and associated riparian corridor. The proposed project includes grading of the old MX track and removal of 1.5 acres riparian vegetation. The proposed project may also have indirect impacts to the Middle Fork. Examples of indirect impacts include decreased water/habitat quality due to runoff.

Impacts to state jurisdictional streambeds and associated riparian vegetation would require an LSAA from CDFW. In addition to compensatory mitigation for the direct removal of riparian habitat, permit applications would include AMMs to be implemented before, during, and after construction to help meet resource agency permit requirements, thereby reducing potential impacts to the Middle Fork and riparian habitat within the project site to less-than-significant levels.

Although the limits of the proposed project are outside of the OHWM (federal jurisdiction), the proposed project could have indirect impacts (e.g., inadvertent damage by construction equipment or decreased water/habitat quality due to runoff) to jurisdictional habitat areas downstream adjacent to the project site, such as other waters and riparian vegetation. However, with the implementation of AMMs, including BMPs and preparing a hazardous spill plan, these impacts would be reduced to less than significant.

### **6.4 Jurisdictional Waters – Less-than-Significant Impact with Mitigation**

The project site is adjacent to the Middle Fork, which is a water of the U.S. If the limits of construction extend below the OHWM of the Middle Fork, the project would require a CWA Section 404 Permit from USACE and a CWA Section 401 Water Quality Certification from the RWQCB. The location and extent of federal jurisdictional resources within the project site will need to be verified by the USACE. The proposed project may result in indirect impacts to the Middle Fork due to runoff and excessive sedimentation from construction activities, which could result in decreased water/habitat quality. With implementation of AMMs, including BMPs prior to, during, and after construction, potential indirect impacts to waters of the U.S. would be less than significant.

State Parks will submit applications and LSAA from CDFW and Waste Discharge Requirements from RWQCB (if applicable) to authorize impacts to the bed, bank, or channel of any feature that may be regulated as a water of the State. Both agencies will provide mandatory conservation measures to ensure the protection of water quality and riparian habitat and wildlife species, which may include compensatory mitigation for unavoidable direct impacts to waters of

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the State. Obtaining the resource permits and complying with all permit provisions and conditions of approval would reduce impacts to a less-than-significant level.

#### **6.5 Interfere with Native Wildlife Movement – Less-than-Significant Impact with Mitigation**

Since there is potential for direct and indirect impacts to the Middle Fork, potential waters of the State, and removal of riparian habitat as a result of construction activities, the project may result in minor and temporary impacts to wildlife movement within, upstream, and downstream of the project area during project activities. However, implementation of the CDFW, USACE (if required), and RWQCB (if required) permit conditions and the AMMs listed in Section 7 would reduce impacts to native wildlife movement to less than significant levels.

#### **6.6 Conflict with Local Policies – No Impact**

The project site is located on land owned by the United States Bureau of Reclamation and is therefore exempt from local municipal codes and general plan policies.

#### **6.7 Conflict with Conservation Plan – No Impact**

The proposed project is not within an area covered by an HCP or NCCP. As a result, the project will have no impact related to a conservation plan.

### **7 Conclusions and Recommendations**

This section provides recommended AMMs that should be incorporated prior to, during, and after construction of the proposed project in order to minimize impacts to sensitive habitats (including jurisdictional waters) and special-status species.

#### **7.1 Sensitive Habitats and Jurisdictional Features**

The proposed project includes the re-grading the vertical slope of the cut bank to a more gradual slope, the leveling of the remaining MX track, stockpiling the material for rebuilding of the MX track, and rebuilding the MX track to the uppermost portion of the existing parking lot adjacent to the entrance kiosk at a future date.

The following general AMMs are recommended as part of the proposed project and should be included on the project plans to minimize impacts to sensitive habitats and jurisdictional features:

1. Prior to construction activities, the boundaries of waters of the U.S. and waters of the State (including riparian vegetation outside of the project footprint) in the vicinity of the work area shall be plotted on all construction plans and maps, including a minimum buffer of 15 feet or more as determined by a qualified biologist. No construction activities shall occur within 15 feet of the OHWM of the Middle Fork.

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2. Silt fencing and construction fencing shall be installed around the federal and state jurisdictional habitats and avoidance buffer, and the final location of the installed fencing shall be approved by a qualified biologist prior to initiation of construction activities. The fencing shall be monitored by the CDPR employees regularly during construction activities to ensure that the fencing remains intact and functional; any repairs to the fence shall be conducted immediately. Encroachment into these areas shall be prohibited by construction personnel, and storage of materials or equipment shall be prohibited in these areas.
3. Prior to the onset of construction activities, CDPR employees shall be briefed by a qualified biologist on the location of sensitive habitat and other resources that shall be preserved and the importance of avoidance.
4. Since the proposed project disturbs more than one acre, a SWPPP shall be prepared in accordance with the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ issued by the California State Water Resources Control Board). The potential for adverse effects to water quality in aquatic habitat within the project site will be avoided by implementing BMPs established by a SWPPP prepared for the site and may include measures such as the following:
  - a) All construction equipment and vehicles will be limited to identified staging areas and access roads, including pavement, existing roads, and previously disturbed areas. When accessing work sites, travel and parking of vehicles and equipment will be limited to pavement, existing roads, and previously disturbed areas.
  - b) Ground disturbance and vegetation removal may not exceed the minimum amount necessary to complete work at the site.
  - c) Temporary work areas will be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation with a resource agency-approved native seed mix, and soil stabilization will be evaluated upon completion of work and performed as needed.
  - d) All construction equipment will use identified staging areas and access roads located in upland areas. When accessing work sites, travel and parking of vehicles and equipment will be limited to pavement, existing roads, and previously disturbed areas.
  - e) All construction materials and wastes will be stored, handled, and disposed of properly, so as to prevent their contact with stormwater.

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- f) Discharge of all potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment, and non-stormwater discharges to storm drains and water course, will be controlled and prevented.
- g) No vehicles may be refueled within 50 feet of wetlands, streams, or other waterways and must be confined to a designated area in which run-off is contained and treated. Vehicles operating adjacent to wetlands and waterways must be inspected and maintained daily to prevent leaks.
- h) Construction activities shall cease during inclement weather, and all necessary erosion control measures shall be implemented prior to the onset of precipitation. Construction activities halted due to precipitation may resume when precipitation ceases. No work shall occur on overly saturated soils
- i) Debris, soil, silt, bark, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other contaminants that could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the U.S. or waters of the State.
- j) Clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and discharge courses will be delineated with field markers and construction fencing.
- k) Spoils will be promptly removed, and stockpiling of fill materials when rain is forecast will be avoided. If rain threatens stockpiles, soils and other materials shall be covered with a tarp or other waterproof material.
- l) Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination and dispersal by wind.
- m) Sanitary facilities will be maintained on the project site at all times. Sanitary facilities include concrete wash-out facilities, porta-potties, and hydraulic fluid containers. Waste shall be removed to a proper disposal site.
- n) Measures shall be taken to collect or clean any accumulation or deposit of dirt, mud, sand, rocks, gravel, or debris on the surface of any street, alley, or public place or in public storm drain systems. The removal of aforesaid shall be done by street sweeping or hand sweeping. Water shall not be used to wash sediments into downstream water courses. The erosion control plan will be implemented during the wet season (September 15 through April 15). The following measure will be included in the plan:



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- During the rainy season, all paved areas shall be kept clear of earth material and debris. The project site shall be maintained so as to minimize sediment-laden runoff to the Middle Fork.
5. A hazardous spill plan will be developed prior to construction. The plan will describe what actions will be taken in the event of a spill. The plan will also incorporate preventative measures to be implemented, such as vehicle and equipment staging, cleaning, maintenance, and refueling; and contaminant (including fuel) management and storage. In the event of a contaminant spill, work at the site will immediately cease until CDPR employees have contained and mitigated the spill. CDPR will immediately prevent further contamination and notify appropriate authorities and mitigate damage as appropriate. Adequate spill containment materials, such as oil diapers and hydrocarbon cleanup kits, shall be available on site at all times. Containers for storage, transportation, and disposal of contaminated absorbent materials will be provided in the project site.
  6. After construction is completed, a final cleanup will include removal of all stakes, temporary fencing, flagging, and other refuse generated by construction.

## 7.2 Special-Status Species

Hardhead is assumed to be present in the Middle Fork. CRLF, FYLF, WPT, pallid bat, Townsend's big-eared bat, western red bat, bald eagle, golden eagle, yellow warbler, and yellow-breasted chat have the potential to occur within and adjacent to the project footprint. In addition, other birds protected by the MBTA and California Fish and Game Code could nest in vegetation adjacent to and within the project footprint or structures within the project site and footprint, and other bats protected by California Fish and Game Code could roost in trees within and nearby the project footprint. Therefore, measures to protect special-status species, bats, and nesting birds during construction will be necessary. The following AMMs are recommended to avoid harming special-status species, bats, and nesting birds during construction:

1. Wildlife Exclusion Fence. A wildlife exclusion/environmental fence with exit funnels at ground level every 25 feet will be erected around active construction areas to prevent the movement of animals into active construction areas. The fence should be a minimum of 3 feet in height, buried in the soil at least 4 inches, and the base backfilled to form a tight seal to discourage CRLF, FYLF, and WPT from crawling under and entering the project site. If the fence cannot be buried, the base will be weighed down and sealed with gravel bags. During construction, the fence shall be checked every day for damage or breaks before construction activities commence. Any damage to the fence will be repaired in a timely manner.
2. Silt Fencing. Silt fencing should be installed between the work areas and the river and intermittent drainages to minimize sedimentation into the Middle Fork, or a silt barrier can be added to the wildlife exclusion fence to minimize the amount of fencing installed within the project site. During construction, the fence shall be checked every day for

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damage or breaks before construction activities commence. Any damage to the fence will be repaired in a timely manner.

3. Daily Fence Inspections. A qualified biologist will inspect the area inside of the fence for CRLF, FYLF, and WPT every day before construction activities commence. If any special-status species are found, construction activities will not be allowed to start and the USFWS and CDFW will be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to outside of the project site.
4. Designation of Work Area. Prior to project activities, a qualified biologist will clearly delineate riparian vegetation, including trees to be avoided and protected from construction activities. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete the project. Additionally, no project activities will take place below the OHWM of the Middle Fork.
5. Employee Education Program. An employee education program will be conducted, consisting of a brief presentation to explain biological resource concerns to CDPR employees and any other personnel involved in construction of the project. The program will include the following: a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the project; a report of the occurrence of these species in the vicinity of the project site, as applicable; an explanation of the status of these species and their protection under federal and state regulations; a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; and instructions if a special-status species is found onsite. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. Upon completion of training, employees will sign a form stating that they attended the training and agree to all of the conservation and protection measures.
6. Pre-construction Survey for Special-Status Amphibian and Reptile Species. A qualified biologist will conduct a pre-construction survey within the project site, including the project footprint for the presence of CRLF, FYLF, and WPT. The survey will be conducted immediately prior to the initial onset of project activities. If any of these species are found, work will not commence until the appropriate state and/or federal resource agencies are contacted and avoidance measures are in place.
7. Pre-construction Survey for Nesting Birds. To avoid impacts to nesting birds and violation of state and federal laws pertaining to birds, all construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading) should occur outside the avian nesting season (that is, prior to February 1 or after September 15). If any construction activities (including noise and vibration from heavy equipment) described above occurs

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within the avian nesting season (from February 1 to September 15), all suitable habitats located within the project footprint including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented.

If pre-construction nesting bird surveys result in the location of active nests, no site disturbance and mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), shall take place within 250 feet of non-raptor nests and 1,000 feet of raptor nests, or as determined by a qualified biologist in consultation with CDFW and/or USFWS, as appropriate, until the chicks have fledged. Monitoring shall be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.

8. Preconstruction Bat Roost Surveys. At least 14 days before commencement of any site disturbance activities and equipment mobilization (including but not limited to mobilization and staging, clearing, grubbing, tree removal, vegetation removal, fence installation, demolition, and grading), a survey for tree cavities suitable for roosting bats and other roost habitats will be conducted within the project footprint, including a 50-foot buffer, as feasible, by a qualified biologist. If suitable tree cavities or other roost habitats are found, an emergence survey of the cavities will be conducted by a qualified biologist for colony bat roosts before the onset of construction-related activities. If an occupied maternity or colony roost is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided. The results of the surveys shall be documented. Echolocation surveys may be needed to verify the presence of bats, or an exclusion zone around the occupied tree may be recommended until bats leave the roost. Due to restrictions of the California Health Department, direct contact with any bat is not allowed. The qualified bat biologist shall be contacted immediately if a bat roost is discovered during project construction.
9. Construction Site Sanitation. Food items may attract wildlife onto the construction site, which will expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, and other discarded items) will be placed in closed containers and properly disposed of.
10. Species Discovery. If an animal is found at the work site and is believed to be a protected species, work must stop, and the project biologist must be contacted for

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guidance. Care must be taken not to harm or harass the species. No wildlife species will be handled and/or removed from the project site by anyone except a qualified biologist.

11. Wildlife Entrapment. CDPR employees shall avoid the use of monofilament netting, including its use in temporary and permanent erosion control materials. All holes greater than one-foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope will be positioned such that entrapped wildlife will be able to escape. The escape ramps should be at least one-foot wide and covered/fitted with a material that provides traction.
12. Daily Species Inspections for Open Trenches or Holes. A qualified biologist will inspect open trenches or holes for CRLF, FYLF, WPT, and other special-status species every day before construction activities commence. If any special-status species are found, construction activities will not be allowed to start and the USFWS and CDFW will be consulted to determine the appropriate course of action.

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## **Appendix A – Figures**



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## **Appendix B – Photos**

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**Photo 1.** Looking northwest at the entrance kiosk to Mammoth Bar OHV area. The existing parking area is the open area in the foreground of the photo. The proposed new location for the MX track will replace the existing parking, picnic, and trials area. The picnic area is visible to the right and the trails area is the rocky area behind the picnic area.

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**Photo 2.** Looking west from the existing MX track. The Middle Fork of the American River is visible in the background to the left. The cut bank caused by high river flows and flooding in early 2017 is visible to the left. A portion of the existing MX track was washed away.



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**Photo 3.** Looking downstream outside the project site boundary near the OHWM of the Middle Fork of the American River.

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**Photo 4.** Looking upstream from the TOB near the helipad. The cut bank is clearly visible to the left in the photo. The riparian habitat visible is typical for the project site and is composed of patches of willow thickets with scattered cottonwood trees.

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**Appendix C – Special-Status Plant and Animal Species Evaluated for Potential to Occur within the Project site**



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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Congdon's onion ( <i>Allium sanbornii</i> var. <i>congdonii</i> )	4.3	Congdon's onion grows on serpentine substrate in chaparral and foothill woodland. Strict serpentine endemic. Elevation 1,395 to 4,575 ft.	April – July	Known from just a couple of higher elevation locations within Placer County that are more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Sanborn's onion ( <i>Allium sanbornii</i> var. <i>sanbornii</i> )	4.2	Sanborn's onion grows mainly on serpentine substrate in chaparral, foothill woodland, and yellow pine forest. Elevation 1,510 to 4,955 ft.	May – September	Known from higher elevation locations within Placer County that are more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Furthermore, the site is located below the typical elevation range where this species occurs. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Nissenan manzanita ( <i>Arctostaphylos nissenana</i> )	1B.2	Nissenan manzanita grows in open, rocky shale ridges in chaparral and closed-pine forest. Known mainly from El Dorado County. Elevation 137 – 3,600 ft.	February – March	Known from just one higher elevation location within Placer County that is more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats and does not contain shale substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Depauperate milk-vetch ( <i>Astragalus pauperculus</i> )	4.3	Depauperate milk vetch grows within valley grassland and foothill woodland in vernal moist areas on volcanic clay substrate. Known mainly from Butte and Tehama Counties. Elevation 200 – 4,000 ft.	March – June	Known from just one location near Auburn but is more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats and there is no volcanic clay substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Big-scale balsamroot ( <i>Balsamorhiza macrolepis</i> )	1B.2	Big-scale balsamroot grows in valley grassland and foothill woodland in open grassy areas and rocky slopes. Elevation 1,555 to 5,100 ft.	March – June	Known mainly from Central Valley locations within Placer County. There are no documented occurrences for California balsamroot within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats not typically suitable for this species. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Thread-leaved beakseed ( <i>Bulbostylis capillaris</i> )	4.2	Thread-leaved beakseed grows on open damp to dry sandy-gravelly soil in upper and lower coniferous forest. Also found in meadows and seeps. Known mainly from Tuolumne, Butte, and Mariposa Counties. Elevation 120 to 6,800 ft.	June – August	Known from just a couple of higher elevation locations within Placer County that are more than 10 miles from the project site. The project site does not support montane coniferous forest or montane meadow habitat where this species typically grows. This species has not been documented in the vicinity of the project site, and the riparian habitat on gravel bars along the fast-moving Middle Fork does not represent typical habitat where this species occurs. <b>Not Expected</b>



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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Stebbins' morning-glory ( <i>Calystegia stebbinsii</i> )	FE, CE, 1B.1	Stebbins' morning glory grows in chaparral and foothill woodland. Mainly known from El Dorado and Nevada Counties. Elevation 1,090 to 3,575 ft.	April – July	Known from just a couple of higher elevation locations within Placer County that are more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Dissected-leaf toothwort ( <i>Cardamine pachystigma</i> var. <i>dissectifolia</i> )	1B.2	Dissected-leaf toothwort grows in chaparral and lower montane coniferous forest on serpentine substrate. Elevation 255 to 6,900 ft.	February – May	Known from just one higher elevation location within Placer County that is more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats and does not contain serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Red Hills soaproot ( <i>Chlorogalum grandiflorum</i> )	1B.2	Red Hills soaproot grows in chaparral, foothill woodland, and yellow pine forest on serpentine substrate. Broad serpentine endemic. Elevation 1,690 to 5,545 ft.	May – June	Known from higher elevation locations within Placer County that are more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Brandeggee's clarkia ( <i>Clarkia biloba</i> ssp. <i>brandegeae</i> )	4.2	Brandeggee's clarkia grows in foothill woodland, yellow pine forest, and chaparral. It is often found along roadcuts. Elevation 915 to 3,000 ft.	May – July	There are several documented occurrences for Brandeggee's clarkia near the project site. However, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. It could occur in the natural habitat adjacent to the project site. <b>Not Expected</b>
Northern Sierra daisy ( <i>Erigeron petrophilus</i> var. <i>sierrensis</i> )	4.3	Northern Sierra daisy grows in foothill woodland, lodgepole forest, red fir forest, and yellow pine forest on serpentine soils. Broad serpentine endemic. Elevation 262 to 3,297 ft.	June – October	Known from a single occurrence in Placer County more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Tripod buckwheat ( <i>Eriogonum tripodum</i> )	4.2	Tripod buckwheat grows in chaparral and cismontane woodland on serpentine soils. Broad serpentine endemic. Elevation 700 to 5,250 ft.	May – July	Known from a single occurrence in Placer County more than 10 miles from the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Stinkbells ( <i>Fritillaria agrestis</i> )	4.2	Stinkbells grow in chaparral, valley grassland, and foothill woodland within clay depressions and banks mostly on serpentine soils. Elevation 33 to 5,100 ft.	March – June	Known mainly from Central Valley locations within Placer County. There are no documented occurrences for stinkbells within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Butte County fritillary ( <i>Fritillaria eastwoodiae</i> )	3.2	Butte County fritillary grows in chaparral, cismontane woodland, and lower coniferous forest on dry slopes and benches. Elevation 1,500 to 4,920 ft.	March – June	Known from higher elevation locations within Placer County that are within 10 miles of the project site. However, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
American manna grass ( <i>Glyceria grandis</i> )	2B.3	American mannagrass grows in wet meadows and lake and stream margins. Elevation 50 to 6,500 ft.	July – August	Known mainly from locations in the Lake Tahoe area in Placer County in wet meadows along high mountain lake and stream margins that are not within 10 miles of the project site. This species has not been documented in the vicinity of the project site, and the riparian habitat on gravel bars along the fast-moving Middle Fork does not represent typical habitat where this species occurs. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Southern California black walnut ( <i>Juglans californica</i> )	4.2	Southern California black walnut grows on hillsides and canyons within riparian forest and woodland. Mainly found in Southern California. Elevation 160 to 3,000 ft.	March – June	There is one documented Central Valley location within Placer County. There are no documented occurrences for Southern California black walnut within 10 miles of the project site. However, the project site contains riparian woodland. This tree species would have been detected during the January 2018 site visit but was not observed. <b>Not Expected</b>
Northern California black walnut ( <i>Juglans hindsii</i> )	1B.1	Northern California black walnut grows in riparian forest and woodland. Widely naturalized. Only three native sites in California are known. Elevation 0 to 1,400 ft.	April – May	Known mainly from Central Valley locations within Placer County. There are no documented occurrences for Northern California black walnut within 10 miles of the project site. However, the project site contains riparian woodland. Even though there is suitable habitat for this species within the project site, it has not been documented within or in the vicinity of the project site. This tree species would have been detected during the January 2018 site visit but was not observed. <b>Not Expected.</b>
Dubious pea ( <i>Lathyrus sulphureus</i> var. <i>argillaceus</i> )	3	Dubious pea grows in foothill woodland and montane coniferous forest. Elevation 930 to 3,050 ft.	April – May	Known from a single occurrence near Auburn within 10 miles of the project site. However, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Cantelow's lewisia ( <i>Lewisia cantelovii</i> )	1B.2	Cantelow's lewisia grows in chaparral, cismontane woodland, lower montane coniferous forest on granite cliff faces, rocky outcrops, ravines, and serpentine seeps. Elevation 1,080 to 4,500 ft.	May – October	Known from a single 40-year-old record from a higher elevation location within Placer County. There are no documented occurrences for Cantelow's lewisia within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats with no suitable substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Humboldt lily ( <i>Lilium humboldtii</i> ssp. <i>humboldtii</i> )	4.2	Humboldt lily grows in yellow pine forest and chaparral, generally in open areas. Elevation 1,280 to 4,200 ft.	May – July	Known from higher elevations within Placer County. There are no documented occurrences for Humboldt's lily within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Sylvan microseris ( <i>Microseris sylvatica</i> )	4.2	Sylvan microseris grows in foothill woodland and valley grassland. Elevation 150 to 5,000 ft.	March – June	Known from 50-year-old records from Central Valley locations within Placer County. There are no documented occurrences for Sylvan microseris within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Sierra monardella ( <i>Monardella candicans</i> )	4.3	Sierra monardella grows in oak woodland, chaparral, lower yellow-pine forest on sandy or gravelly soils. Elevation 500 to 2,620 ft.	April – July	Known from historical records within Placer County. There are no documented occurrences for Sierra monardella within 10 miles of the project site. The project site does not support oak woodland, chaparral, or lower montane coniferous forest; the ruderal and riparian habitats onsite would not be suitable to support this species. <b>Not Expected.</b>
Hoary navarretia ( <i>Navarretia eriocephala</i> )	4.3	Hoary navarretia grows in heavy soil of seasonally wet flats, cismontane woodland, and valley and foothill grassland. Also known to grow in wetlands. Elevation 340 to 1,300 ft.	May – June	Known mainly from Central Valley locations within Placer County. There are no documented occurrences for hoary navarretia within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitat, and there are no wetlands or heavy soils in the project site. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Layne's ragwort ( <i>Packera layneae</i> )	1B.2	Layne's ragwort grows in open and disturbed areas on serpentine soils. Broad serpentine endemic. Elevation 1,085 to 3,560 ft.	April – August	Known from only one location within Placer County. There are no documented occurrences for Layne's ragwort within 10 miles of the project site. Additionally, the project site is composed of ruderal and riparian habitats, and there is no serpentine substrate. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
Great burnet ( <i>Sanguisorba officinalis</i> )	2B.2	Great burnet grows in bogs and streams in north coastal coniferous forest and mixed evergreen forest, often on serpentine substrate. Elevation 200 to 4,600 ft.	July – October	Known from higher elevation locations within Placer County. There are no documented occurrences for great burnet within 10 miles of the project site. Additionally, there is no serpentine substrate within the project site. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>
Oval-leaved viburnum ( <i>Viburnum ellipticum</i> )	2B.3	Common viburnum grows in chaparral and yellow-pine forest, generally on north-facing slopes. Elevation 1,400 to 4,595 ft.	May – June	There are several documented occurrences for common viburnum near the project site. However, the project site is composed of ruderal and riparian habitats. Therefore, there is no suitable habitat for this species within the project site. <b>Not Expected</b>

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**Table 1.** Special-Status Plant Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal, State, and CNPS Listing Status <sup>1</sup>	Habitat Requirements	Blooming Period	Potential to Occur
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**STATUS KEY:**

Federal

FE: Federally-listed Endangered

FT: Federally-listed Threatened

State

CE: California-listed Endangered

CT: California-listed Threatened

CR: California-listed Rare

California Native Plant Society (CNPS):

Rank 1A – Presumed extinct in California;

Rank 1B – Rare, threatened, or endangered in California and elsewhere

Rank 2A: Plants presumed extirpated in California, but more common elsewhere; Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere

Rank 3 – Plants for which more information is needed – A review list

Rank 4 – Plants of limited distribution – A watch list

Additional threat ranks endangerment codes are assigned to each taxon or group as follows:

- .1 – Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat)
- .2 – Fairly endangered in California (20-80% occurrences threatened)
- .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)



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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
<b>Invertebrates</b>			
Valley Elderberry Longhorn Beetle (VELB; <i>Desmocerus californicus dimorphus</i> )	FT	VELB is a medium sized beetle that is endemic to the Central Valley of California. The USFWS considers the range of VELB to include the watersheds of the American, San Joaquin, and Sacramento Rivers and their tributaries up to approximately 3,000 feet above MSL. VELB are completely dependent on elderberry ( <i>Sambucus</i> sp.) shrubs as their host plants during their entire life cycle. VELB are usually found in areas with high shrub densities.	There are two documented occurrences for VELB within 10 miles of the project site. A few elderberry shrubs were documented within the project site in 2000 (CDPR 2002). However, no elderberry shrubs or trees were observed within the project site during the field survey for this report; therefore, there is no suitable habitat for VELB within the project site. <b>Not Expected</b>
<b>Fish</b>			
Hardhead ( <i>Mylopharodon conocephalus</i> )	CSSC	Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs. In small streams hardhead tend to spawn near their resident pools, while fish in larger rivers or lakes often move up to 20-50 miles to find suitable spawning grounds.	Hardhead have been reported from the North and South Forks of the American River, but not the Middle Fork. Given the confluence of the Middle and North Forks is approximately 1.5 miles downstream of the project site, it is likely that Hardhead are present within the Middle Fork. The PISCES database (UC Davis 2018) shows this species' range extending into the project site. <b>High Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Steelhead-California Central Valley DPS ( <i>Oncorhynchus mykiss</i> )	FT	The Central Valley DPS includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Steelhead is an anadromous salmonid, typically migrating to marine waters after spending two years in freshwater. Preferred spawning is found in perennial streams with cooler-temperature water, high dissolved oxygen levels, and substantial flow. Abundant riffles (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful reproduction.	While semi-suitable habitat is present within the project site and there are documented occurrences of this species within 10 miles of the project site, migration access to the project site by this anadromous species is impeded by the Nimbus Dam in Folsom, California (UC Davis 2018). <b>Not Expected</b>
<b>Amphibians</b>			
California red-legged frog ( <i>Rana draytonii</i> )	FT, CSSC	CRLF occurs in different habitats depending on life stage, season, and weather conditions. CRLF typically use a variety of aquatic habitats (e.g., ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, perennial creeks, artificial ponds, marshes, dune ponds, and lagoons), as well as riparian and upland habitats. The common factor among habitats where CRLF occur is the association with a relatively permanent water source with deep pools, generally free of non-native predators.	The largest Sierra Nevada CRLF population is located at Big Gun Preserve, near Foresthill in the Middle Fork American River watershed as well as other locations within the Middle Fork and North Fork watersheds. The Middle Fork adjacent to the project site does not support breeding habitat for CRLF, based on a field assessment of site conditions and the lack of suitable wetlands in the area. However, the Middle Fork provides suitable dispersal and refugia habitat for CRLF. Additionally, the riparian habitat within the project site provides suitable dispersal and refugia habitat for CRLF. CNDDDB (2018) has two suppressed occurrences of CRLF within the 10-mile radius of the project site, cited as “within Forest Service

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
			land,” that are likely associated with El Dorado National Forest approximately 8 miles east of the project site. The project site likely has aquatic connectivity with occupied habitat that could provide a suitable migration corridor for this species. <b>Moderate Potential</b>
Foothill yellow-legged frog ( <i>Rana boylei</i> )	CPT, CSSC	FYLF is proposed to be listed as threatened under CESA and is a CSSC. The largest remaining populations in California are in the northern coast ranges, particularly in the Smith River, tributaries of the Klamath River, the South Fork Trinity River, the South Fork Eel River, Redwood Creek, coastal tributaries in Mendocino County, and Russian River tributaries. Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. It needs at least some cobble-sized substrate for egg-laying, and at least 15 weeks to attain metamorphosis.	FYLF has several documented occurrences, including locations on the Middle Fork upstream of the project site as well as locations on the North and South Forks. The nearest observation is from 2007, approximately 4 miles upstream at Poverty Bar. The Middle Fork adjacent to the project site provides breeding, dispersal, and foraging habitat for this species. Additionally, the riparian habitat within the project site provides suitable FYLF dispersal and refugia habitat. <b>Moderate Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
<b>Reptiles</b>			
Western pond turtle ( <i>Emys marmorata</i> )	CSSC	WPT requires permanent or nearly permanent bodies of water including ponds, marshes, rivers, streams, and irrigation ditches. It requires basking sites, such as submerged rocks, logs, open mud banks, or floating vegetation mats. This species also requires sandy banks or grassy open fields up to 0.5 kilometers from the water's edge for egg laying.	WPT has been documented in the Upper North Fork American River and Lower Middle Fork American River watersheds (Tetra Tech 2007). The Middle Fork adjacent to the project site provides suitable breeding and foraging habitat for this species. Additionally, the riparian and upland habitat within the project site provides suitable dispersal, basking, and nesting habitat for WPT. <b>Moderate Potential</b>
Blainville's Horned Lizard ( <i>Phrynosoma blainvillii</i> )	CSSC	Inhabits open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills. Historically found in California along the Pacific coast from the Baja California border west of the deserts and the Sierra Nevada, north to the Bay Area, and inland as far north as Shasta Reservoir, and south into Baja California. Ranges up onto the Kern Plateau east of the crest of the Sierra Nevada.	There are open areas with sandy soils within the project site, and the project site is within the historic range of this species. This species has been positively identified within the American River watershed very recently approximately 10 miles south of the project site (iNaturalist 2018). However, there are no CNDDDB documented occurrences within or in the vicinity of the project site. <b>Low Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
<b>Birds</b>			
Golden eagle ( <i>Aquila chrysaetos</i> )	CFP	The golden eagle is found in open mountains, foothills, plains, and open country. In the north and west, it is found over tundra, prairie, rangeland, or desert. very wide-ranging in winter. Nest site is most often on a cliff ledge, but also frequently nests in large trees and sometimes on abandoned structures. Nest sites may be used for many years. It is not considered very tolerant of human disturbance near nest sites.	There are several documented occurrences for golden eagle in the vicinity of the project site. However, there is only marginal nesting habitat within the project due to the presence of developed and disturbed habitat. <b>Low Potential</b>
White-tailed kite ( <i>Elanus leucurus</i> )	CFP	White-tailed kites often nest in trees along forest edges adjacent to grasslands and agricultural areas where they forage.	There are several documented occurrences for white-tailed kite in the vicinity of the project site. The occurrences were in habitat not occurring in the project site, including open, undisturbed chaparral and grassland habitat. However, this species may potentially nest in trees within or in the immediate vicinity of the project site. <b>Moderate Potential</b>
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	CFP, CE	Bald eagles typically nest in undisturbed forested areas adjacent to large bodies of water. They are tolerant of human activity when feeding and may congregate around fish processing plants, dumps, and below dams where fish concentrate. In winter, bald eagles can also be seen in dry, open uplands if there is access to open water for fishing. Bald eagles nest in trees, on cliff faces, or on the ground. If available, they prefer to nest in tall conifers that protrude above the forest canopy. They may also nest in deciduous trees, mangroves, and cactus. Bald eagles primarily feed	There are several documented occurrences for bald eagle in the vicinity of the project site (CNDDDB 2018, eBird 2018). While there is suitable foraging habitat within and adjacent to the project site, there is only marginal nesting habitat within the project due to the presence of developed and disturbed habitat. <b>Low Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
		on fish but will eat a wide variety of foods, including birds, reptiles, amphibians, and small mammals.	
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	CFP	The American peregrine falcon is found in California year-round; breeding occurs along the coast of southern and central California, in the inland coastal mountains, in the Klamath Mountains and Cascade Range, in the Sierra Nevada, and in the Channel Islands. They are found in open country, cliffs (mountains to coast), and sometimes cities. The nest site is usually on a cliff ledge, sometimes in hollow of broken-off tree snag or in old stick nest of another large bird species. They also use ledges of buildings, bridges, other structures.	There is a suppressed CNDDDB (2018) occurrence of this species as well as several public observations near the project site (eBird 2018). While there is suitable nesting habitat in the vicinity of the project site, the project site does not provide suitable nesting habitat for peregrine falcon. <b>Low Potential</b>
California spotted owl ( <i>Strix occidentalis occidentalis</i> )	CSSC	California spotted owl ranges from the southern Cascade Range of northern California, south along the west slope of the Sierra Nevada, and in mountains of central and southern California nearly to the Mexican border. It is a year-round resident within most of its range and breeds from mid-February to early October. In the Sierra Nevada, it predominantly uses mid-elevation mixed conifer forest. To a lesser extent, it inhabits high elevation red fir forests at high elevations and lower elevation forests oak woodlands and valley foothill riparian forests. Nest sites include a sheltered site inside a large hollow tree, on broken-topped trees or snags, in a cave or crevice in a cliff, old squirrel nests, and sometimes in old	There are no documented occurrences of California spotted owl within or in the vicinity of the project site. There are documented occurrences at higher elevations along the Middle Fork approximately 7 miles upstream of the project site. The riparian habitat within in and adjacent to the project site provides marginal nesting habitat. However, the presence of developed and disturbed habitat within the project site is likely to deter this species from nesting. <b>Low Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
		stick nest of raptors or common raven. Foraging habitats are similar to nesting habitats.	
Willow flycatcher ( <i>Empidonax traillii</i> )	CE	Willow flycatcher is found in shrubs, willow thickets, brushy fields, and small stands of upland trees. They breed in thickets of deciduous trees and shrubs, especially willows, or along woodland edges. This species often breeds near streams or marshes, especially in southern part of range. The nest site is in a deciduous shrub or tree, especially in willow, 4-15' above the ground. Willow flycatchers winter around clearings and second growth in the tropics, especially near water.	There is only one recent documented occurrence for willow flycatcher approximately 2.5 miles south of the project site near Knickerbocker Creek in El Dorado County. While there are small stands of willow thickets within the project site, the existing low willow foliage density is only marginally suitable for this species' nesting requirements. <b>Low Potential</b>
Yellow warbler ( <i>Setophaga petechia</i> )	CSSC	Yellow warbler is a summer resident along the Middle Fork from March through October and breeds from April through July. It mainly breeds in riparian vegetation in close proximity to water along streams and in wet meadows. It is mainly found in willows and cottonwoods, foraging from low levels up to treetops to take insects. It winters in the tropics.	Known from Auburn State Recreation with many years of observations, including an observation within the project site in 2012 and along the Quarry trail near the project site in 2017. There is suitable riparian breeding habitat within the project site. <b>High Potential</b>
Yellow-breasted chat ( <i>Icteria virens</i> )	CSSC	Yellow breasted chat is a summer resident along the Middle Fork from March to September and breeds from April through August. It mainly breeds in early successional riparian habitat with a well-developed, dense shrub layer and open canopy. It winters in the tropics, where it is found in open scrub and woodland edges in lowland areas. It forages by searching among foliage among dense low tangles or by perching to eat insects and berries.	Known from Auburn State Recreation with many years of observations, including an observation within the project site in 2006 and at the Cool Cave Quarry area in 2015. There is suitable riparian breeding habitat within the project site. <b>High Potential</b>

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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
<b>Mammals</b>			
Pallid bat ( <i>Antrozous pallidus</i> )	CSSC	Pallid bat is uncommon, especially in urban areas. They typically will use three different types of roosts in areas with rocky outcroppings, to open, sparsely vegetated grasslands: a day roost which can be a warm, horizontal opening such as in attics, shutters, or crevices; the night roost is in the open, but with foliage nearby; and the hibernation roost is often in buildings, caves, or cracks in rocks. Water must be available close by at all sites. It is most common in open, dry habitats with rocky areas for roosting.	Pallid bat is known to occur in riparian areas in the Sierra foothills and have been documented in Placer County near the South Fork of the American River as recently as 2017. This species may roost within large tree cavities (if present) or structures within the project site. This species may also forage within the project site. <b>Moderate Potential</b>
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	CPT CSSC	Townsend's big-eared bat roosts in the open within caves, mines, abandoned buildings, and large cavities within trees. It forages along the edges of vegetation. This species is extremely sensitive to human disturbance.	Townsend's big-eared bat has been documented in the Sierra foothills within Placer County. This species may roost within large tree cavities (if present) in both riparian and upland habitats. The project site provides foraging habitat and may provide suitable roosting habitat. <b>Moderate Potential</b>
Western red bat ( <i>Lasiurus blossevillii</i> )	CSSC	The western red bat roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. The bat prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. They are solitary by nature but will gather in larger nursery roosts during the summer.	Western red bat is known to occur within riparian areas in the Sierra foothills. This species may roost in the foliage of riparian vegetation within the project site. This species may also forage within the project site. <b>Moderate Potential</b>



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**Table 2.** Special-Status Wildlife Species Evaluated for Potential to Occur on the Project site.

Species Name	Federal and State Status <sup>1</sup>	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Ringtail ( <i>Bassariscus astutus</i> )	CFP	Suitable habitat for ringtails consists of a mixture of forest and shrubland in close association with rocky areas or riparian habitats. These areas can include riparian canyons, caves, and mine shafts. Ringtails can be found from southwestern Oregon, south through California, southern Nevada, Utah, Colorado, Texas, Arizona, New Mexico, Oklahoma, eastern Kansas, Baja California, and northern Mexico. They will den in tree hollows, rock crevices, other animals' abandoned burrows, mine shafts, and abandoned buildings.	There is one documented occurrence of a ringtail approximately 6.4 miles southeast of the project site (iNaturalist 2018). However, there is limited habitat connectivity between occupied habitat and the project site, including several highways and residential land use. Additionally, this species would likely avoid the areas with regular human disturbance on the project site. <b>Low Potential</b>

STATUS:

Federal

FE: Federally-listed Endangered

FT: Federally-listed Threatened

State

CE: California State-listed Endangered

CT: California State-listed Threatened

CPT: California State-proposed Threatened

CSSC: California Species of Special Concern

CFP: California Fully-Protected

SOURCES (sources within table are CDFW 2018 unless otherwise noted):

California Natural Diversity Database (CDFW 2018)

iNaturalist species observations (iNaturalist 2018)

eBird species observations (eBird 2018)

PISCES Fish Species Database (UC Davis 2018)



**Auburn State Recreation Area  
Mammoth Bar  
Jurisdictional Waters and Wetland Delineation**



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**June 26, 2018**

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## LIST OF ABBREVIATED TERMS

AWRS	Arid West Regional Supplement
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Parks and Recreation
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
LSAA	Lake and Streambed Alteration Agreement
NRCS	Natural Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
OBL	Obligate
OHWM	Ordinary High-Water Mark
NTCHS	National Technical Committee for Hydric Soils
PJD	Preliminary Jurisdictional Determination
RWQCB	Regional Water Quality Control Board
SCS	Soil Conservation Service
TNW	Traditional Navigable Water
UPL	Upland
U.S.	United States
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WDR	Wastewater Discharge Requirements
WETS	Wetlands Climate Tables

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## **1 Introduction**

MIG was retained by California Department of Parks and Recreation (CDPR), Off-Highway Motor Vehicle Recreation Division, to conduct a wetland delineation and obtain a preliminary jurisdictional determination (PJD) for the Mammoth Bar MX Track Repair Project (project) located at Mammoth Bar along the Middle Fork of the American River (Middle Fork) within Auburn State Recreation Area located in Placer County, California (Appendix A, Figures 1 and 2).

This report summarizes the field methods and results of MIG's delineation of potential waters of the United States (U.S.) within the project area that are subject to jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act (CWA). Findings in this report should be considered preliminary until the USACE has completed its verification and review process.

This report also provides an overview of those areas that fall under the jurisdiction of the Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and the California Department of Fish and Wildlife (CDFW) under Sections 1600-1607 of the California Fish and Game Code.

### **1.1 Project Description**

The Mammoth Bar motocross (MX) track was damaged from severe erosion caused by high river flows and flooding in early 2017 (Appendix C, Site Photos). The erosion of soil resulted in an unstable, nearly vertical cut bank with up to a 15-foot drop-off. Due to public safety concerns over the drop-off of the cut bank, Mammoth Bar has been closed since January 2017 and was partially re-opened in May 2018.

It is the goal of CDPR to open the undamaged areas of Mammoth Bar, including the Mini track, picnic area, and trails in the near future. However, before re-opening the area CDPR intends to stabilize the cut bank in order to ensure public safety and reduce potential sediment load into the Middle Fork. As part of the proposed project, CDPR proposes re-grading the vertical slope of the cut bank to a more gradual 2:1 slope. The resulting gradual slope would pose less of a safety concern and minimize sediment load from future high river flows. Additionally, CDPR proposes to level the remaining MX track and stockpile the material for rebuilding of the MX track at a future date. The MX track would be rebuilt at the uppermost portion of the existing parking lot adjacent to the entrance kiosk; this new location is set farther back from the Middle Fork and would be less prone to potential erosion caused by future high river flows and flooding (Appendix A, Figure 2). The proposed project footprint is 8.26 acres (project footprint; Appendix A, Figure 4).

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## **1.2 Applicant Contact Information**

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## **1.3 Project Location and Directions to Project Area**

The site is located within the Auburn U.S. Geological Survey (USGS) 7.5-minute quadrangle, Section 5 of Township 13 North, Range 9 East, M.D.B.&M. Mammoth Bar can be accessed from Old Foresthill Road in Auburn, CA. The easiest access is off Interstate 80. Take the Highway 49 (Golden Chain Highway) exit off I-80 towards Placerville for approximately 3 miles to Old Foresthill Road. Continue straight on Old Foresthill Road, and the Auburn State Recreation Area entrance is located 1.5 miles on the right.

# **2 Regulatory Setting**

The following discussion identifies federal and state regulations that serve to protect water resources relevant to the proposed project.

## **2.1 Waters of the U.S.**

The CWA is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the USACE, to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA, and the California State Water Resources Control Board enforces Section 401.

### **2.1.1 Clean Water Act Section 404**

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into “waters of the U.S.” Waters of the U.S include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high-water marks.

Waters of the U.S. refer to unvegetated waterways and other water bodies with a defined bed and bank, such as drainages, creeks, rivers, and lakes. This approximately translates to the bank to bank portion of water bodies, up to the ordinary high-water mark (OHWM). The limits of

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USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM, which is defined at 33 CFR 328.3(e) as:

“...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

The term “wetlands” (a subset of waters of the U.S.) is defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.”

The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it follows Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE's administration of the Section 404 program and may override a USACE decision with respect to permitting.

The USACE has specific guidelines for determining the extent of its jurisdiction. The methods of delineating USACE jurisdiction in the San Francisco Bay Area are defined in the 1987 Wetlands Delineation Manual (Environmental Laboratory 1987) and the Arid West Regional Supplement (AWRS; USACE 2008b). The methods of delineating USACE jurisdiction are defined in the manuals and require examination of three parameters (soil, hydrology, and vegetation).

Substantial impacts to waters of the U.S. may require an Individual Permit under Section 404 of the CWA. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, if other conditions of the permit are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

#### Isolated Areas Excluded from Section 404 Jurisdiction

In addition to areas that may be exempt from Section 404 jurisdiction, some isolated wetlands and waters may also be considered outside of USACE jurisdiction as a result of the Supreme Court's decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to and are not adjacent to a navigable water of the U.S. and do not otherwise exhibit an interstate commerce connection.



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*Rapanos v. United States and Carabell v. United States*

On June 5, 2007, the USACE and the EPA issued joint guidance on implementing the June 19, 2006 U.S. Supreme Court opinions resulting from *Rapanos v. United States* and *Carabell v. United States* (*Rapanos*) cases. The agencies received 66,047 public comments on the Rapanos Guidance (65,765 form letters, 282 non-form letters), from states, environmental and conservation organizations, regulated entities, industry associations, and the general public. EPA and the USACE jointly reviewed the comments and released a revised version of the guidance on December 2, 2008 (USACE 2008a). The revised guidance states that the agencies will assert jurisdiction over the following when there is a significant nexus or direct connection to a traditional navigable water (TNW):

- Non-navigable tributaries that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).
- Non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow).
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.
- Uplands transporting over land flow generated from precipitation (i.e., rain events and snowmelt).

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters.
- Significant nexus includes consideration of hydrologic and ecologic factors.

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### 2.1.2 Clean Water Act Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The “401 Certification” is provided by the State Water Resources Control Board through the local RWQCB.

The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities, and wastewater recycling. The RWQCB recommends that the application for a Certification under Section 401 of the Clean Water Act be made at the same time as other applications are provided to other agencies, such as the USACE, U.S. Fish and Wildlife Service (USFWS), or the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is to be minimized, and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of functions and values and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed or impacted. A higher mitigation ratio may be required, depending on site conditions and project impacts.

### 2.1.3 Clean Water Act Section 402

The CWA has nationally regulated the discharge of pollutants to the waters of the U.S. from any point source since 1972. In 1987, amendments to the CWA added Section 402(p), which established a framework for regulating nonpoint source stormwater discharges under the National Pollutant Discharge Elimination System (NPDES). The NPDES is a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the U.S. In California, this permit program is administered by the RWQCBs. The NPDES General Construction Permit requirements apply to clearing, grading, and disturbances to the ground such as excavation. Construction activities on one or more acres are subject to a series of permitting requirements contained in the NPDES General Construction Permit. This permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to be implemented during project construction. The project sponsor is also required to submit a Notice of Intent (NOI) with the State Water Resources Control Board Division of Water Quality. The NOI includes general information on the types of construction activities that would occur on the site.

### 2.1.4 Executive Order 11990 for Protection of Wetlands

Executive Order 11990 for the Protection of Wetlands (May 24, 1977) establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On

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federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific “Wetlands Only Practicable Alternative Finding” in the final environmental document. An additional requirement is to provide early public involvement in projects affecting wetlands.

## **2.2 Waters of the State**

### **2.2.1 California Fish and Game Code**

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions in the application and, if necessary, prepares a LSAA that includes measures to protect affected fish and wildlife resources.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. CDFW typically considers a river, stream, or lake to include its riparian vegetation, but it may also extend to its floodplain. The term “stream,” which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life.” This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian is defined as “on, or pertaining to, the banks of a stream”; therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFW 1994).

### **2.2.2 Porter-Cologne Water Quality Control Act**

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as “waters of the State,” include isolated waters that are not regulated by the USACE. Sections 13050-13051 of the California Water Code defines “waters of the State” as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB

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has not established a formal wetland definition nor has it developed a wetland delineation protocol but generally adheres to the same delineation protocol set forth by the USACE. Any person discharging, or proposing to discharge, waste (e.g., dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

### **3 Methods**

The analysis of potential jurisdictional waters of the U.S. in the project area involved a review of available background information pertaining to biological and aquatic resources within and near the project area and completion of a wetland delineation in the field. The methods of the background review and wetland delineation are summarized below.

#### **3.1 Literature Review**

MIG reviewed the following sources for information relevant to this delineation:

- Aerial photographs of the project area (Google Earth Pro 2018).
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2018).
- USFWS National Wetlands Inventory (NWI; USFWS 2018).
- Regional Climate Data – National Oceanic and Atmospheric Administration (NOAA 2018).
- The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012).

#### **3.2 Field Survey and Delineation**

MIG certified wetland delineator David Gallagher conducted a wetland delineation of the project area on January 3 and 4, 2018, in accordance with the Arid West Regional Supplement (AWRS; USACE 2008b) to the 1987 Wetlands Delineation Manual (Environmental Laboratory 1987). A total of five data points, labelled 1 to 5 were collected to determine the presence of wetlands (Appendix A, Figures 4a and 4b). The data sheets for the USACE routine wetland delineation for the five data points are included in Appendix B.

The data sheets present information suitable for determination of waters and wetlands subject to federal jurisdiction (USACE Wetland Determination Form – Arid West Region). At each data point, the dominant plant species were recorded within a 5-foot by 5-foot plot. The indicator status of each species was confirmed with the National Wetland Plant List (Lichvar et al. 2016). Assessment of the hydrologic criterion on-site was based on primary and secondary indicators. Hydric soils were surveyed in accordance with the AWRS. Soil pits at data points were excavated to a depth of approximately 5 to 12 inches, and soil color was matched against a

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Munsell Soil Color Chart. Soil samples were moistened with water from a spray bottle prior to measuring the color.

Geographic data were collected using a tablet with an Arrow 100 sub-meter GPS receiver, a geo-spatial mobile-device application for recording data points and photographs, and a mobile-device application using an electronic version of the USACE Arid West data sheet.

### 3.3 USACE Delineation Methodology

Surveys of the project area were conducted using the AWRS wetland delineation methodology for wetlands (USACE 2008b) and for determining the location of the OHWM for non-wetland “other waters” (USACE 2008c). This methodology involves observing and recording specific data on wetland vegetation, soils, and hydrology.

#### *Mapping Wetlands*

According to the USACE's AWRS wetland delineation methodology, a wetland must exhibit the following: (1) a prevalence or dominance of hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. These characteristics are defined and described in further detail below.

**Hydrophytic Vegetation.** Plants that can grow in wet soils, which usually contain less oxygen, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 1. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils.

The USACE maintains and regularly updates the National Wetland Plant List that was originally issued by the USFWS (Lichvar et al. 2016). This list categorizes species according to their affinity for occurrence in wetlands (Table 1). The dominance test is the basic hydrophytic vegetation indicator and is met at a data point when more than 50 percent of the dominant vegetation comprises hydrophytes. However, some wetland plant communities may fail the dominance test. In those cases where indicators of hydric soil and wetland hydrology are present, the vegetation is re-evaluated with the prevalence index, which takes into consideration all plant species in the community, not just a few dominants. In some instances, plant morphological adaptations can be helpful to distinguish certain wetland plant communities in the Arid West, when indicators of hydric soil and wetland hydrology are present. Finally, certain problematic wetland situations may lack any of the above indicators and therefore require specific approaches to identifying problematic hydrophytic vegetation as outlined in the AWRS (USACE 2008b).

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**TABLE 1. CATEGORIES OF WETLAND PLANT INDICATORS (LICHVAR ET AL. 2016)**

Indicator Categories	Codes	Comments
Obligate	OBL	Almost always is a hydrophyte, rarely in uplands
Facultative Wetland	FACW	Usually a hydrophyte but occasionally found in uplands
Facultative	FAC	Commonly occurs as either a hydrophyte or non-hydrophyte
Facultative Upland	FACU	Occasionally is a hydrophyte, but usually occurs in uplands
Upland	UPL	Rarely is a hydrophyte, almost always in uplands

**Hydric Soils.** The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as one formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (U.S. Department of Agriculture [USDA], Soil Conservation Service [SCS] 1994). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. The AWRS (USACE 2008b) contains a list of 23 hydric soil indicators that are known to occur in the Arid West region. In general, evidence of a hydric soil includes characteristics such as organic soils (Histosols), reducing soil conditions, gleyed soils, soils with bright mottles and/or low matrix chroma, soils listed as hydric by the USDA on the National Hydric Soils List (NRCS 2018), and iron and manganese concretions. Reducing soil conditions can also include circumstances where there is evidence of frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from seven days to a month, and very long is greater than one month (Environmental Laboratory 1987).

**Wetland Hydrology.** As defined in the AWRS (USACE 2008b), wetland hydrology is an area that is inundated either permanently or periodically at mean water depths less than 6.6 feet, or where the soil is saturated at the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime. Wetland hydrology indicators include, but are not limited to, visual observation of

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inundation, visual observation of saturation, water marks, sediment deposits, surface soil cracks, drainage patterns, drift lines, and oxidized rhizospheres along living roots.

### *Mapping Other Waters*

For non-wetland, “other water” features, the extent of the USACE jurisdiction is defined by the OHWM. Delineation of other waters is based on observing indicators for the OHWM (33 CFR 328.3[e]), following established USACE criteria and considering hydrological connectivity or isolation. Common physical characteristics that indicate the presence of an OHWM include, but are not limited to, bed and bank development; a clear natural line impressed on the bank; evidence of scour; recent bank erosion; destruction of native terrestrial vegetation; sediment deposition; and the presence of litter and debris (USACE 2008c). The bank-to-bank extent (or bank full width) of the channel that contains the water-flow during a normal rainfall year generally serves as a good approximation of the lateral limit of USACE jurisdiction. The upstream limit of “waters” is defined as the point where the OHWM is no longer perceptible.

Within the project area, the OHWM was delineated based on historic and current stream geomorphology and vegetation indicators. Hydrogeomorphic considerations included the identification of historic flow patterns, the presence of a well-defined bed and bank channel, the presence of an active floodplain, and the presence of a low terrace. Other physical indicators included the presence of long gravel bars, benches, organic debris larger than twigs, exposed root hairs along banks and benches, change in distribution of the size of sediment, surface topography, and changes in the character of soil. Vegetation indicators included areas that are sparse or devoid of vegetation, presence of wetland indicator plants, and evidence of recent germination of seedlings.

### **3.4 Mapping CDFW Jurisdictional Lakes and Streambeds**

CDFW jurisdictional streambeds include unvegetated waterways and other water bodies with a defined bed and bank, such as streams, lakes, drainages, and rivers. Evaluation of CDFW jurisdiction followed guidance in the California Fish and Game Code and standard field practices by CDFW personnel. CDFW jurisdiction was delineated by measuring the outer boundaries of state jurisdiction (lakes or streambeds), which consists of both the “top of bank” (TOB) measurement in combination with the extent of the dripline of associated riparian vegetation (riparian habitat). Delineation of CDFW lakes and streambeds was based on indicators of ephemeral, intermittent, or perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. In the project area, the TOB was identified as a distinct break in the bank slope and riparian habitat by the extent of riparian vegetation.

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## 4 Environmental Setting

### 4.1 General Description

The project area is within the Auburn State Recreation Area and is located in the Sierra Nevada foothills approximately thirty miles northeast of Sacramento. The majority of the project area is situated on a natural terrace adjacent to the Middle Fork and contains two motorcycle tracks, picnic areas, and an access road to Mammoth Bar that is used as a whitewater rafting access point. The project area also includes a portion of Mammoth Bar, which is a natural point bar along the Middle Fork. The project area has been used by off road enthusiasts for nearly 25 years. The project area is approximately 17.5 acres and is surrounded by natural open space.

### 4.2 Climate and Topography

The climate at the project area is Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Snowfall is rare. The summer is characterized by mild to hot temperatures. The 20-year-average annual rainfall near the project area is 36.7 inches (Auburn weather station; NOAA 2018). The project area is situated on a natural terrace above the Middle Fork of the American River. Topography within the project area is generally level but it slopes abruptly downward from north to south towards the Middle Fork and slopes gently from east to west. Open space surrounds the project area, and elevations range from approximately 611 to 713 feet above mean sea level within the project area (Google Earth Pro 2018).

Precipitation was normal for the eight-month period leading up to the delineation based on a Wetlands Climate Tables analysis (Auburn weather station; NRCS 2018). Total precipitation recorded for the eight months prior to the delineation (May 2017 to December 2017) at the Foresthill Ranger Station weather station was 8.63 inches, which is 36% lower than the 30-year average (1988-2017) but still within the normal range of precipitation (NRCS 2018).

### 4.3 Soils

There are three soil series within the project area (USDA 2018; Appendix A, Figure 3) as described below and are summarized in Table 2.

*Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes (119); Auburn-Sobrante-Rock outcrop complex, 50 to 70 percent slopes (121)*

The Auburn-Sobrante-Rock outcrop series consists of well-drained, high-runoff soils underlain by slightly weathered metabasic rock. These soils are undulating to steep and are on the lower and middle parts of foothills, and rocky canyon sides of metamorphic rock foothills. Slopes are 2 to 70 percent and permeability is moderate in these soils. These soil series are found in the northern portion of the project area on a natural terrace above the Middle Fork. These soil series are not listed as hydric in Placer County on the National Hydric Soils List (USDA 2015).



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### *Riverwash (178)*

Riverwash is generally composed of sand, gravel, and boulders derived from sandy and gravelly alluvium parent material. Riverwash is usually found in long, narrow areas, but is occasionally spread out in fan-shaped areas. These areas occupy river bottoms or flood channels and occur where streams are intermittent or regularly flooded. Riverwash is listed as hydric in Placer County on the National Hydric Soils List (USDA 2015). Riverwash is found in the low-lying southern portion of the project area adjacent to the Middle Fork.

**TABLE 2. SOIL SERIES WITHIN THE PROJECT AREA**

<b>Soil Series</b>	<b>Hydric</b>	<b>Acres</b>
<i>Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes (119)</i>	No	5.54
<i>Auburn-Sobrante-Rock outcrop complex, 50 to 70 percent slopes (121)</i>	No	3.98
<i>Riverwash (178)</i>	Yes	7.11

## **4.4 Hydrology**

The Middle Fork is one of the three main branches of the American River in Northern California. The river flows 62 miles from its headwaters in the Sierra Nevada, in a southwest direction, to join the North Fork American River near Auburn, approximately 2 miles downstream of the project area. The project area is situated adjacent to a natural point bar. A bar in a river is an elevated region of sediment (such as sand or gravel) that has been deposited by water flow. The Middle Fork is used heavily for water supply and the generation of hydroelectricity. The Placer County Water Agency operates several dams and power plants on the Middle Fork, which are known collectively as the Middle Fork Project.

In the winter of 2016-2017, high water flow and flooding resulted in severe bank erosion and expansion of the natural point bar, which damaged portions of the MX motorcycle track (Appendix C, Photos 1 and 2).

Within the project area, there are several erosional features and engineered swales that collect and direct upland sheet flow into the Middle Fork (Appendix A, Figure 4; Appendix C, Photo 4).

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## 4.5 Vegetation and Habitat

The project area is located within the Northern Sierra Nevada Foothills District of the Sierra Nevada Region, both of which are contained within the larger California Floristic Province (Baldwin et al. 2012). Vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. The plant communities in the project area were classified using A Manual of California Vegetation (Sawyer et. al. 2009). The project area contains disturbed/developed and riparian habitats that are described in detail below (Appendix A, Figure 5). Photographs of the project area are included in Appendix C.

### 4.5.1 Disturbed/Developed Land (Ruderal)

Disturbed habitat includes land regularly cleared of vegetation (e.g., agricultural land), lands containing a preponderance of non-native plant species, or areas regularly disturbed by human activities. This type of habitat can also include areas that are mowed regularly, which precludes the development of native vegetation communities. Additionally, this habitat can include developed lands, which are areas that lack vegetation. Generally, developed land is characterized by permanent structures, impervious surfaces, or unpaved high-use areas.

Within the project area, disturbed habitat includes areas adjacent to the parking area, helipad, access road, the MX track, the Mini Track, maintenance shed, kiosk, ramadas, and the unpaved access road and parking area. These areas are developed or regularly cleared of vegetation and subject to regular human disturbance. Trees observed include black locust (*Robinia pseudoacacia*), California foothill pine (*Pinus sabiniana*), and interior live oak (*Quercus wislizeni*). Herbaceous plants include broad leaf filaree (*Erodium botrys*), red stemmed filaree (*Erodium cicutarium*), foothill filaree (*E. brachycarpum*), California blackberry (*Rubus ursinus*), rough cocklebur (*Xanthium strumarium*), wild mustard (*Hirschfeldia incana*), wooly mullein (*Verbascum thapsus*), tall flatsedge (*Cyperus eragrostis*), American bird's foot trefoil (*Acmispon americanus* var. *americanus*), curly dock (*Rumex crispus*), and naked buckwheat (*Erigonum nudum* var. *oblongifolium*).

### 4.5.2 Riparian (Mixed Willow Shrub)

Within the project area, riparian habitat includes the vegetation on the gravel bars as well as along the margins and banks of the Middle Fork. It also includes the unvegetated sections of gravel bars that are within the flood plain of the Middle Fork. The dominant tree is Fremont's cottonwood (*Populus fremontii*). Dominant shrubs include arroyo willow (*Salix lasiolepis*), red willow (*S. laevigata*), and sandbar willow (*S. exigua*). Herbaceous plants include curly dock, sheep sorrel (*Rumex acetosella*), California blackberry, rough cocklebur, wild mustard, wooly mullein, tall flatsedge (*Cyperus eragrostis*), and American bird's foot trefoil.

A complete list of plant species observed within the project area is provided in Appendix D.

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## 5 Results

The results of the jurisdictional site evaluation are described in this section. Wetland determination field data were recorded on standard USACE Arid West Regional Supplement data forms provided in Appendix B. The preliminary jurisdictional determination maps in Figures 4 and 5 in Appendix A depict the extent of potentially jurisdictional areas within the project area. Representative photographs taken during the site survey to document existing site conditions are provided in Appendix C. A list of plant species observed during the site visit in January 2018 is included in Appendix D. Descriptions of potential federal jurisdictional features found in the project area are provided below.

### 5.1 U.S. Fish and Wildlife Service National Wetland Inventory

As part of the evaluation for the presence of Waters of the U.S. under USACE jurisdiction, USFWS NWI map data were reviewed within the project area (USFWS 2017). NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These wetland data are available for general reference purposes and do not necessarily correspond to jurisdictional waters/wetlands as defined in the USACE AWRS. Figure 3 in Appendix A shows portions of the project area mapped as surface waters. The NWI documents the Middle Fork flowing through the project area. The NWI identifies both a non-tidal, perennial, low-flow channel (R3UBH) and associated seasonally flooded high-flow channel (R3USC). Riverine systems include all wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or that form a connecting link between the two bodies of standing water. Within the project area, no wetlands are mapped in the NWI.

### 5.2 CWA Section 404/401 Lakes, Ponds, and Streams/Non-Tidal Waters/Other Waters of the U.S.

The project area does not contain wetlands as defined by the USACE using the three parameters of hydrology, hydrophytic vegetation, and hydric soils (Appendix A, Figure 4). None of the five data points (1-5) met all three parameters for a wetland. One data point (1) met both the hydrophytic vegetation and hydrology parameters. Two data points (2 and 3) met the hydrology parameter. Within the project area, the data points were representative of the conditions observed and were used to determine the absence of potential jurisdictional wetlands. The results are summarized in Table 3 and 4.

The Middle Fork was delineated within the project area by interpreting and mapping the OHWM (Appendix A, Figure 4). The results are summarized in Table 4.

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*Middle Fork of the American River*

Within the project area, the Middle Fork follows the typical patterns of a single channel stream with adjacent floodplains. The project area also includes a natural low terrace that is subject to infrequent flood waters, which is typically referred to as the 100-year floodplain. Based on the analysis of aerial imagery of the project area over a 30-year period, the stream geomorphology of the Middle Fork is characterized by a stable low-flow perennial channel. Additionally, the banks along the main channel of the river generally exhibit a stable vegetation profile (Google Earth Pro 2018).

Severe erosion and the expansion of the existing natural point bar was caused by high river flows and flooding in early 2017. Point bars are a natural feature of meandering rivers such as the Middle Fork and are subject to moderate to frequent overbank flow, resulting in changes in the point bar morphology over time. The frequency and magnitude of the overbank flow are influenced by large-scale weather patterns, such as winter North Pacific frontal storms (Lichvar and Wakeley 2004). These large-scale weather patterns can vary from year to year and therefore affect the frequency of high water flow and flooding events.

The bank-to-bank extent (bankfull width) of the low-flow main channel that contains the water-flow during a normal rainfall year generally serves as a good approximation of the lateral limit of USACE jurisdiction. Since point bars are part of the active floodplain and generally subject to just overbank flow, the OHWM was mapped according to the bank-to-bank extent of the low-flow main channel. Additionally, the following geomorphic and vegetation indicators were used to delineate the OHWM:

- The point bar exhibited benches, which are formed by the removal of previously aggraded sediment.
- Drift in the form of woody debris was observed along the main channel and within the point bar. The debris were orientated in the direction of flow.
- Exposed root hairs below an intact soil layer were observed along the cut bank adjacent to the MX track.
- A change in particle size distribution was observed from coarser to finer sediment along the main channel.
- Soil development was observed along the main channel and drainages, formed by runoff observed above the main channel.
- Germination of seedlings was observed along the main channel.
- Fully vegetated areas with woody species were observed above the main channel.
- Areas devoid of vegetation were observed along the main channel.

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**TABLE 3. SUMMARY OF WETLAND INDICATORS PRESENT AT SAMPLE POINTS WITHIN THE PROJECT AREA**

Sample Point	Hydrophytic Vegetation	Hydric Soils	Hydrology	Comments
1	Dominance Test	No	Sediment Deposits (Riverine), Drift Deposits, and Drainage Patterns	The vegetation present was not unique to the sample point and the species were found throughout the project area, including areas farther upland. The hydrology indicators are due to location in active flood plain.
2	No	No	Sediment Deposits (Non-riverine), and Drainage Patterns	Sediment deposits are likely due to extensive flooding from early 2017. Drainage patterns due to concave, lowland position that likely collects stormwater runoff. The area is not inundated long enough for hydrophytic vegetation to grow or hydric soils to develop.
3	No	No	Sediment Deposits (Riverine), Drift Deposits, and Drainage Patterns	Hydrology indicators are likely a result of intermittent stormwater runoff through the swale. The sampled area is not inundated long enough for hydrophytic vegetation to grow or hydric soils to develop.

**TABLE 4. SUMMARY OF CWA JURISDICTIONAL RIVERINE SYSTEMS WITHIN THE PROJECT AREA**

Feature	Description	NWI Classification
Middle Fork of the American River	Non-tidal perennial river	R3UBH

### 5.3 CDFW Jurisdictional Areas

The project area contains the Middle Fork with defined bed and bank topography and associated riparian habitat, as defined by CDFW (Appendix A, Figure 5). Riparian habitat was mapped by the dripline of stream-dependent riparian vegetation, and streambed features were mapped by the top of bank (which can extend beyond the OHWM used to measure the extent of waters of the U.S.). Within the project area, the TOB was identified and mapped as a distinct break in the bank slope above the point bar/active floodplain and as a distinct break in the bank slope above the main channel of the Middle Fork. Riparian habitat was mapped by identifying the extent of riparian vegetation.

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## 6 Conclusions

A preliminary map of potential USACE, RWQCB, and CDFW jurisdictional waters within the project area is provided in Appendix A, Figure 4 (USACE and RWQCB) and Figure 5 (CDFW). Evidence supporting the jurisdictional determination is provided in the data sheets in Appendix B: Wetland Delineation Field Data Sheets and Photographs. Photographs of the project area are provided in Appendix C: Site Photos. A complete list of plant species observed in the project area and their associated wetland indicator status is provided in Appendix D: Plant Species Observed Within the Project Area.

### 6.1 Waters of the U.S.

Based on an assessment of the waters of the U.S., including wetlands, using the Wetland Delineation Manual (Environmental Laboratory 1987) and the Arid West Regional Supplement (USACE 2008b), the project area contains potential jurisdictional waters. However, the project footprint is above the OHWM, and no work will be conducted at or below the OHWM. A preliminary map of USACE jurisdictional waters is provided in Appendix A, Figure 4, and their total acreages are summarized in Table 5.

**TABLE 5. SUMMARY OF POTENTIAL SECTION 404 WATERS WITHIN THE PROJECT AREA AND PROJECT FOOTPRINT**

Water/Wetland Type	Project Area <sup>1</sup>		Project Footprint	
	Linear Length (Feet)	Acres	Linear Length (Feet)	Acres
Riverine (non-tidal perennial river; Middle Fork of the American River)	1,875	0.992	0	0
<b>Total</b>	<b>1,875</b>	<b>0.992</b>	<b>0</b>	<b>0</b>

<sup>1</sup> Includes acreage within project footprint

These results are considered to be preliminary until verified by the USACE and/or until any permits are issued by federal agencies authorizing activities within this area. The conclusion of this delineation is based on conditions observed at the time of the field surveys on January 3 and 4, 2018.

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## 6.2 Waters of the State Regulated by RWQCB

Within the project area there are waters of the State as defined by Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act. However, the project footprint is above the OHWM, and no work will be conducted at or below the OHWM. A preliminary map of RWQCB jurisdictional waters is provided in Appendix A, Figure 4, and their total acreages are summarized in Table 6.

**TABLE 6. SUMMARY OF POTENTIAL 401 JURISDICTIONAL WATERS WITHIN THE PROJECT AREA AND PROJECT FOOTPRINT REGULATED BY THE REGIONAL WATER QUALITY CONTROL BOARD**

Water/Wetland Type	Project Area <sup>1</sup>		Project Footprint	
	Linear Length (Feet)	Acres	Linear Length (Feet)	Acres
Riverine (non-tidal perennial river; Middle Fork of the American River)	1,875	0.992	0	0
<b>Total</b>	<b>1,875</b>	<b>0.992</b>	<b>0</b>	<b>0</b>

<sup>1</sup> Includes acreage within project footprint

## 6.3 Lake and Streambed/Riparian Regulated by CDFW

All ecological systems associated with drainages (i.e., riparian vegetation) and drainage and pond features with bed and bank topography may be regulated by Sections 1600-1607 of the California Fish and Game Code. A preliminary map of CDFW jurisdictional waters is provided in Appendix A, Figure 5, and the total acreages for the potential CDFW jurisdictional features are summarized in Table 7.

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**TABLE 7. SUMMARY OF POTENTIAL CDFW JURISDICTIONAL FEATURES WITHIN THE PROJECT AREA AND PROJECT FOOTPRINT**

<b>CDFW Jurisdictional Habitat Type</b>	<b>Project Area<sup>1</sup></b>	<b>Project Footprint</b>
	<b>Acres</b>	<b>Acres</b>
CDFW Riparian	4.018	1.523
CDFW Streambed (mapped below the top of bank)	4.682	1.122
<b>Total</b>	<b>8.700</b>	<b>2.645</b>

<sup>1</sup> Includes acreage within project footprint.



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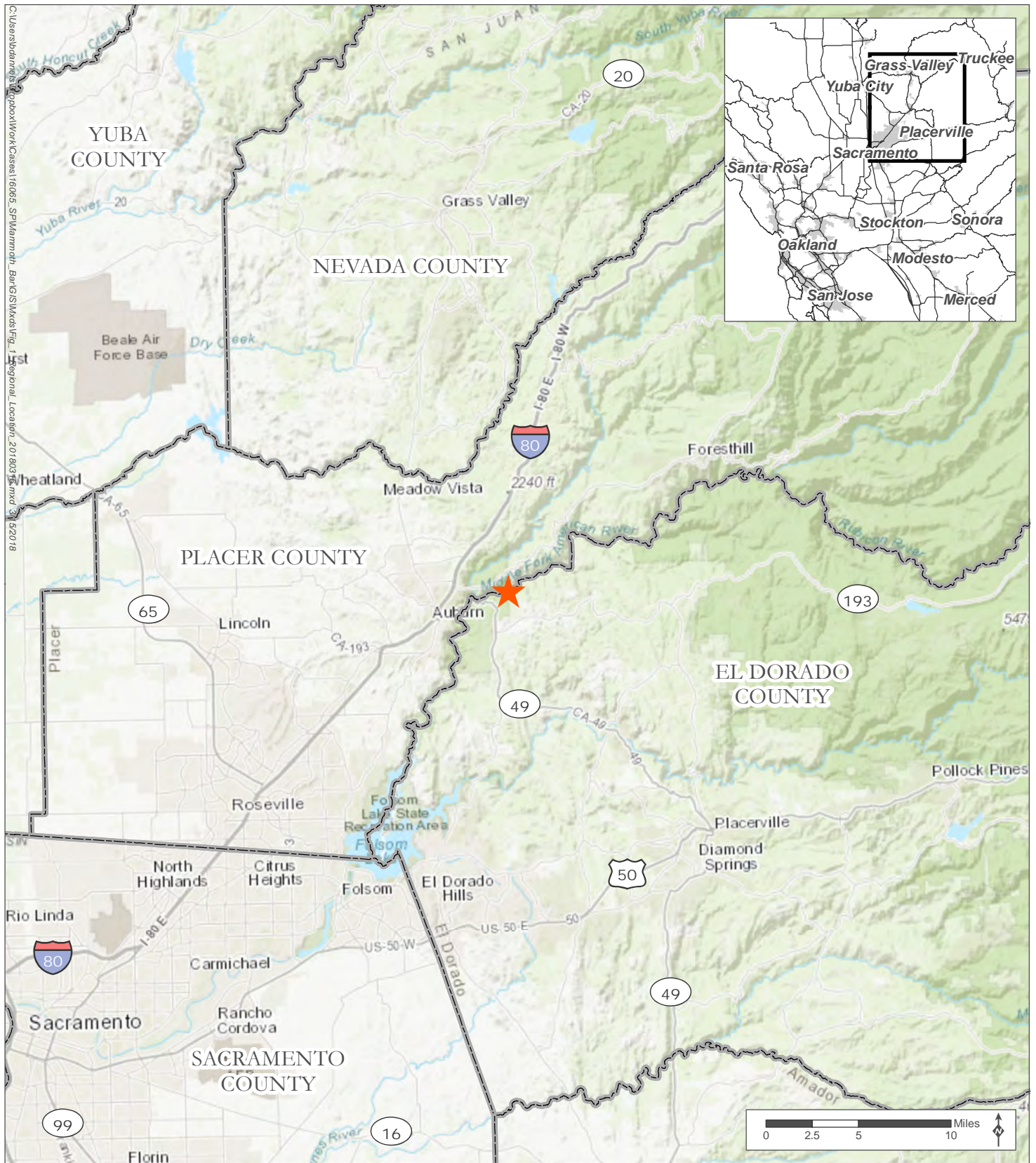
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## **Appendix A Report Figures**



-  Project location
-  County boundary

**Figure 1 Regional Location**

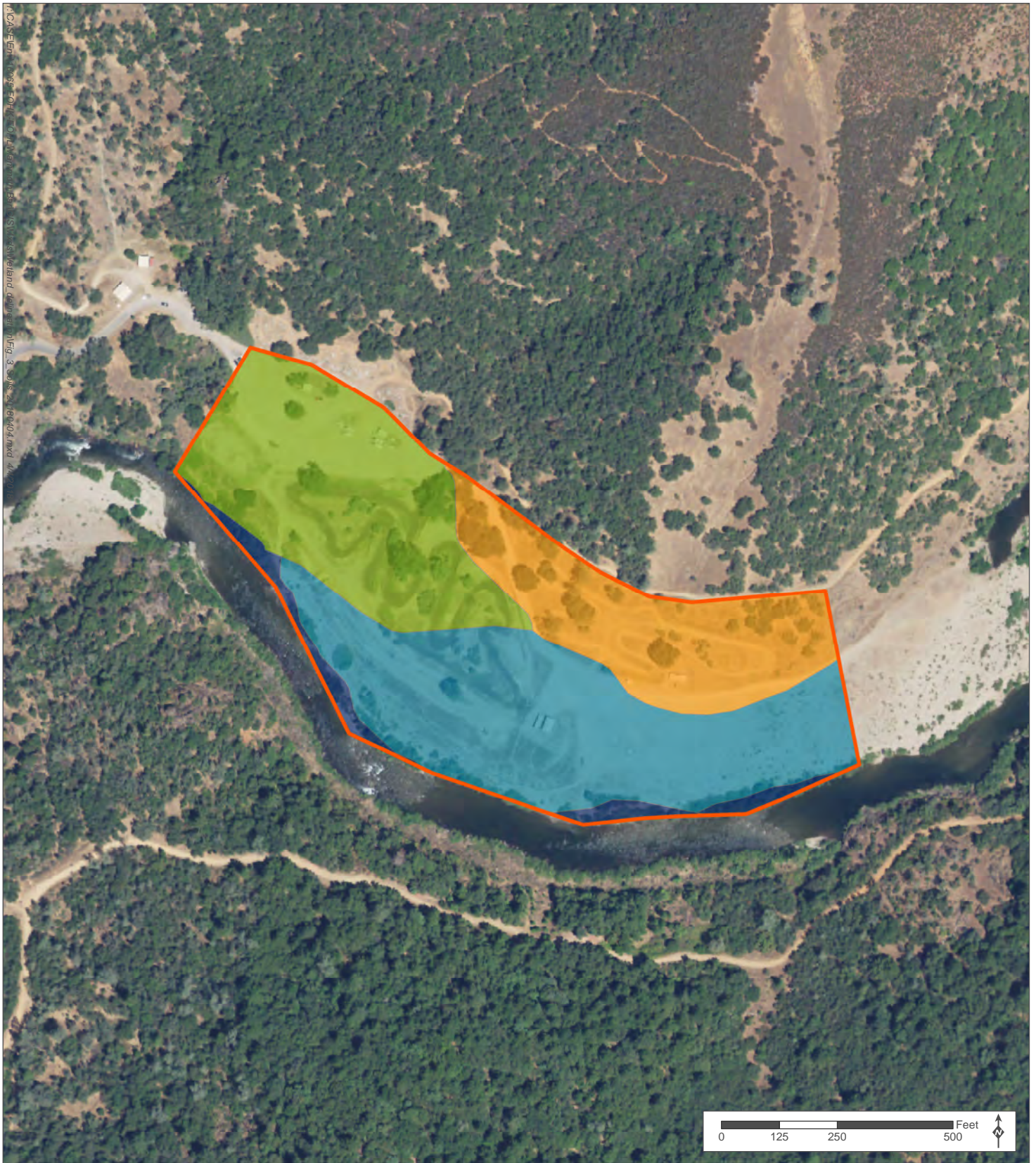




- Project area
- County boundary

**Figure 2 Project Vicinity**








 Project area

**Soil type**

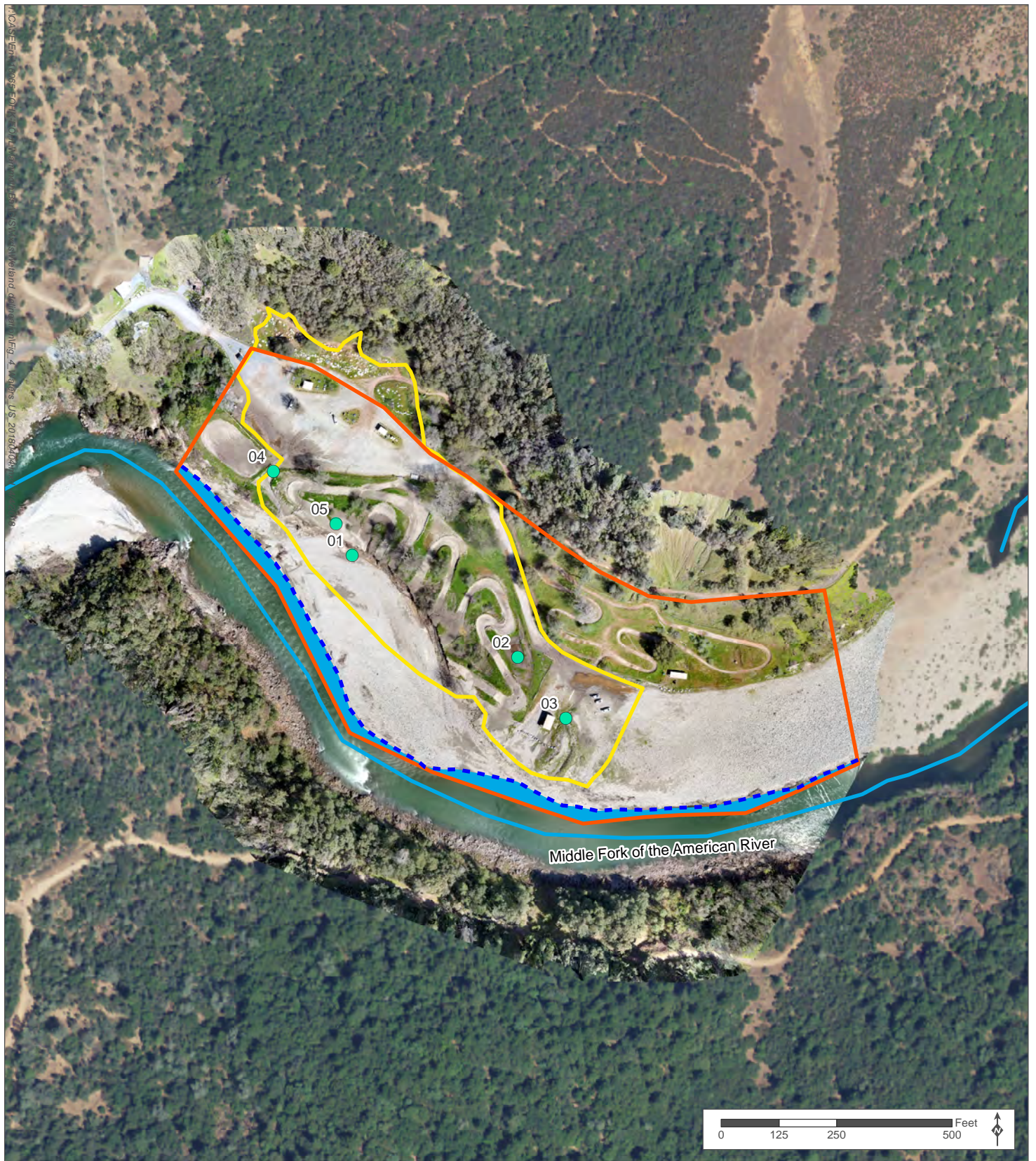
 Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes (5.54 acres)

 Auburn-Sobrante-Rock outcrop complex, 50 to 70 percent slopes (3.98 acres)

 Riverwash (7.11 acres)

 Water (0.83 acres)





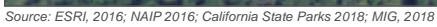
Source: ESRI, 2016; NAIP 2016; California State Parks 2018; MIG, 2018

- Project area
- Project footprint
- Wetland test point
- OHWM line
- Waters of the U.S. (0.992 acres)

**Figure 4** Waters of the U.S. Map

Auburn State Recreation Area Mammoth Bar Jurisdictional Waters and Wetland Delineation





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*Auburn State Recreation Area Mammoth Bar Jurisdictional Waters and Wetland Delineation*



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## **Appendix B Wetland Delineation Field Data Sheets and Photos**

## WETLAND DETERMINATION DATA FORM - Arid West Region

**Project/Site:** Mammoth Bar/Auburn State Recreation Area     
**City/County:** Auburn, Placer County     
**Sampling Date:** 03-Jan-18

**Applicant/Owner:** Off-Highway Motor Vehicle Recreation Division     
**State:** California     
**Sampling Point:** 01

**Investigator(s):** DWG     
**Section, Township, Range:** S      T      R

**Landform (hillslope, terrace, etc.):** Channel (active)     
**Local relief (concave, convex, none):** concave     
**Slope:** 8.7 % / 5.0 °

**Subregion (LRR):** LRR C     
**Lat.:** 38 55 10.32     
**Long.:** -121 0 11.57     
**Datum:** WGS84

**Soil Map Unit Name:** Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes     
**NWI classification:**

**Are climatic/hydrologic conditions on the site typical for this time of year?** Yes ☒ No ☐ (If no, explain in Remarks.)

**Are Vegetation** ☐ , **Soil** ☐ , or **Hydrology** ☐ significantly disturbed?     
**Are "Normal Circumstances" present?** Yes ☒ No ☐

**Are Vegetation** ☐ , **Soil** ☐ , or **Hydrology** ☐ naturally problematic?     
(If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks:</b>	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	3 (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	4 (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	75.0% (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				<b>Prevalence Index worksheet:</b>	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:	Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL spec ies	0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW spec ies	5 x 2 = 10
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC spec ies	10 x 3 = 30
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU spec ies	0 x 4 = 0
	0	= Total Cover		UPL spec ies	10 x 5 = 50
	0			Col umn Total s:	25 (A) 90 (B)
<b>Herb Stratum (Plot size: 5 x 5)</b>				Prevalence Index = B/A = 3.600	
1. Acmispon americanus	10	<input checked="" type="checkbox"/> 40.0%	UPL	<b>Hydrophytic Vegetation Indicators:</b>	
2. Cyperus eragrostis	5	<input checked="" type="checkbox"/> 20.0%	FACW	<input checked="" type="checkbox"/> Dominance Test is > 50%	
3. Plantago lanceolata	5	<input checked="" type="checkbox"/> 20.0%	FAC	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
4. Xanthium strumarium	5	<input checked="" type="checkbox"/> 20.0%	FAC	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	25	= Total Cover			
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
<b>% Bare Ground in Herb Stratum:</b> 75 <b>% Cover of Biotic Crust:</b> 0					

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: 01

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR	2/2	100				Sandy Clay Loam	on river bar, rocky and sandy deposits.
2-5	10YR	2/2	100				Loamy Sand	

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (LRR C)  
☐ 1 cm Muck (A9) (LRR D)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>3</sup>**

- ☐ 1 cm Muck (A9) (LRR C)  
☐ 2 cm Muck (A10) (LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

**Hydrology****Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (Nonriverine)  
☐ Sediment Deposits (B2) (Nonriverine)  
☐ Drift deposits (B3) (Nonriverine)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)  
☒ Sediment Deposits (B2) (Riverine)  
☒ Drift Deposits (B3) (Riverine)  
☒ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): 0Water Table Present? Yes ☐ No ☒ Depth (inches): 0Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): 0**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks:

Secondary indicators due to location in flood plain.

Appendix B

Plot ID:

01

Photo Path: C:\Users\dgallagher.MIG\Desktop\MB\_Test\_Point\_Photos\



Photo File: **TP\_01.jpg**

Orientation:

-facing

Lat/Long or UTM: Long/Easting: **-121 0 11.57**

Lat/Northing: **38 55 10.32**

Description:

No Photo

Photo File: **None.bmp**

Orientation:

-facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

## WETLAND DETERMINATION DATA FORM - Arid West Region

**Project/Site:** Mammoth Bar/Auburn State Recreation Area     
**City/County:** Auburn, Placer County     
**Sampling Date:** 03-Jan-18

**Applicant/Owner:** Off-Highway Motor Vehicle Recreation Division     
**State:** California     
**Sampling Point:** 02

**Investigator(s):** DWG     
**Section, Township, Range:** S      T      R

**Landform (hillslope, terrace, etc.):** Lowland     
**Local relief (concave, convex, none):** concave     
**Slope:** 3.5 % / 2.0 °

**Subregion (LRR):** LRR C     
**Lat.:** 38 55 8.8     
**Long.:** -121 0 7.07     
**Datum:** WGS84

**Soil Map Unit Name:** Riverwash     
**NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year?    Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?    Are "Normal Circumstances" present?    Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?    (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	1 (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	4 (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	25.0% (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:	Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL spec ies	0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW spec ies	0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC spec ies	5 x 3 = 15
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU spec ies	5 x 4 = 20
	0	= Total Cover		UPL spec ies	10 x 5 = 50
Herb Stratum (Plot size: 5 x 5)				Column Total s:	20 (A) 85 (B)
1. Plantago lanceolata	5	<input checked="" type="checkbox"/> 25.0%	FAC	Prevalence Index = B/A = 4.250	
2. Erodium cicutarium	5	<input checked="" type="checkbox"/> 25.0%	UPL		
3. Erodium botrys	5	<input checked="" type="checkbox"/> 25.0%	FACU		
4. Hirshfeldia incana	5	<input checked="" type="checkbox"/> 25.0%	UPL		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	20	= Total Cover			
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
	0	= Total Cover		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
% Bare Ground in Herb Stratum: 80				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
% Cover of Biotic Crust 0				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks:				Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>	

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: 02

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/2	100				Sandy Clay	rocky, moist soil

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (LRR C)  
☐ 1 cm Muck (A9) (LRR D)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>3</sup>**

- ☐ 1 cm Muck (A9) (LRR C)  
☐ 2 cm Muck (A10) (LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

**Hydrology****Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (Nonriverine)  
☒ Sediment Deposits (B2) (Nonriverine)  
☐ Drift deposits (B3) (Nonriverine)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)  
☐ Sediment Deposits (B2) (Riverine)  
☐ Drift Deposits (B3) (Riverine)  
☒ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): 0Water Table Present? Yes ☐ No ☒ Depth (inches): 0Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): 0**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks:

Sediment deposits likely due to flooding event from winter/spring 2017. Drainage patterns due to concave, lowland position. Area likely collects stormwater runoff.

Appendix B

Plot ID:

02

Photo Path: C:\Users\dgallagher.MIG\Desktop\MB\_Test\_Point\_Photos\



Photo File: TP\_02.jpg

Orientation:

-facing

Lat/Long or UTM: Long/Easting: -121 0 7.07

Lat/Northing: 38 55 8.8

Description:

No Photo

Photo File: None.bmp

Orientation:

-facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

## WETLAND DETERMINATION DATA FORM - Arid West Region

**Project/Site:** Mammoth Bar/Auburn State Recreation Area     
**City/County:** Auburn, Placer County     
**Sampling Date:** 03-Jan-18

**Applicant/Owner:** Off-Highway Motor Vehicle Recreation Division     
**State:** California     
**Sampling Point:** 03

**Investigator(s):** DWG     
**Section, Township, Range:** S      T      R

**Landform (hillslope, terrace, etc.):** Channel (active)     
**Local relief (concave, convex, none):** concave     
**Slope:** 15.8 % / 9.0 °

**Subregion (LRR):** LRR C     
**Lat.:** 38 55 6.74     
**Long.:** -121 0 5.79     
**Datum:** WGS84

**Soil Map Unit Name:** Riverwash     
**NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year?    Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?    Are "Normal Circumstances" present?    Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?    (If needed, explain any answers in Remarks.)

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	1 (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	3 (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	33.3% (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:	Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species	0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species	0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species	5 x 3 = 15
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species	5 x 4 = 20
	0	= Total Cover		UPL species	10 x 5 = 50
Herb Stratum (Plot size: _____)				Column Total s:	20 (A) 85 (B)
1. Plantago lanceolata	5	<input checked="" type="checkbox"/> 25.0%	FAC	Prevalence Index = B/A = 4.250	
2. Erodium botrys	5	<input checked="" type="checkbox"/> 25.0%	FACU		
3. Hirshfeldia incana	10	<input checked="" type="checkbox"/> 50.0%	UPL		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	20	= Total Cover			
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
	0	= Total Cover		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
% Bare Ground in Herb Stratum: 80				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
% Cover of Biotic Crust 0					

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**Soil**

Sampling Point: 03

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR	4/2	100				Loamy Sand	below 5 inches dry mulch layer then rocky

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (LRR C)  
☐ 1 cm Muck (A9) (LRR D)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>3</sup>**

- ☐ 1 cm Muck (A9) (LRR C)  
☐ 2 cm Muck (A10) (LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☐ No ☒**Remarks:**

Disturbed soil layers. Engineered drainage ditch.

**Hydrology****Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (Nonriverine)  
☐ Sediment Deposits (B2) (Nonriverine)  
☐ Drift deposits (B3) (Nonriverine)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)  
☒ Sediment Deposits (B2) (Riverine)  
☒ Drift Deposits (B3) (Riverine)  
☒ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): 0Water Table Present? Yes ☐ No ☒ Depth (inches): 0Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): 0Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: \_\_\_\_\_

**Remarks:**

Secondary indicators due to stormwater runoff through channel.

Appendix B

Plot ID:

03

Photo Path: C:\Users\dgallagher.MIG\Desktop\MB\_Test\_Point\_Photos\



Photo File: **TP\_03.jpg**

Orientation:

-facing

Lat/Long or UTM: Long/Easting: **-121 0 5.79**

Lat/Northing: **38 55 6.74**

Description:

No Photo

Photo File: **None.bmp**

Orientation:

-facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

## WETLAND DETERMINATION DATA FORM - Arid West Region

**Project/Site:** Mammoth Bar/Auburn State Recreation Area     
**City/County:** Auburn, Placer County     
**Sampling Date:** 03-Jan-18

**Applicant/Owner:** Off-Highway Motor Vehicle Recreation Division     
**State:** California     
**Sampling Point:** 04

**Investigator(s):** DWG     
**Section, Township, Range:** S      T      R

**Landform (hillslope, terrace, etc.):** Bench     
**Local relief (concave, convex, none):** concave     
**Slope:**      % /      °

**Subregion (LRR):** LRR C     
**Lat.:** 38 55 12.22     
**Long.:** -121 0 13.62     
**Datum:** WGS84

**Soil Map Unit Name:** Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes     
**NWI classification:**

**Are climatic/hydrologic conditions on the site typical for this time of year?** Yes ☒ No ☐ (If no, explain in Remarks.)

**Are Vegetation** ☐ , **Soil** ☐ , or **Hydrology** ☐ significantly disturbed?     
**Are "Normal Circumstances" present?** Yes ☒ No ☐

**Are Vegetation** ☐ , **Soil** ☐ , or **Hydrology** ☐ naturally problematic?     
**(If needed, explain any answers in Remarks.)**

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks:</b>	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	0 (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	3 (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	0.0% (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				<b>Prevalence Index worksheet:</b>	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:	Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species	0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species	0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species	0 x 3 = 0
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species	25 x 4 = 100
	0	<b>= Total Cover</b>		UPL species	55 x 5 = 275
<b>Herb Stratum (Plot size: 5 x 5)</b>				Column Totals:	80 (A) 375 (B)
1. Trifolium hirtum	30	<input checked="" type="checkbox"/> 37.5%	UPL	Prevalence Index = B/A = 4.688	
2. Erodium cicutarium	25	<input checked="" type="checkbox"/> 31.3%	UPL		
3. Erodium botrys	25	<input type="checkbox"/> 31.3%	FACU		
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	80	<b>= Total Cover</b>			
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Indicators:</b>	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Dominance Test is > 50%	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
	0	<b>= Total Cover</b>		<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
<b>% Bare Ground in Herb Stratum:</b> 20 <b>% Cover of Biotic Crust:</b> 0				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: 04

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/3	100				Sand	Too rocky to dig deeper

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (LRR C)  
☐ 1 cm Muck (A9) (LRR D)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>3</sup>**

- ☐ 1 cm Muck (A9) (LRR C)  
☐ 2 cm Muck (A10) (LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

**Hydrology****Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (Nonriverine)  
☐ Sediment Deposits (B2) (Nonriverine)  
☐ Drift deposits (B3) (Nonriverine)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)  
☐ Sediment Deposits (B2) (Riverine)  
☐ Drift Deposits (B3) (Riverine)  
☒ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): 0Water Table Present? Yes ☐ No ☒ Depth (inches): 0Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): 0**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks:

Erosional gully

Appendix B

Plot ID:

04

Photo Path: C:\Users\dgallagher.MIG\Desktop\MB\_Test\_Point\_Photos\



Photo File: **TP\_04.jpg**

Orientation:

-facing

Lat/Long or UTM: Long/Easting: **-121 0 13.62**

Lat/Northing: **38 55 12.22**

Description:

No Photo

Photo File: **None.bmp**

Orientation:

-facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

## WETLAND DETERMINATION DATA FORM - Arid West Region

**Project/Site:** Mammoth Bar/Auburn State Recreation Area     
**City/County:** Auburn, Placer County     
**Sampling Date:** 04-Jan-18

**Applicant/Owner:** Off-Highway Motor Vehicle Recreation Division     
**State:** California     
**Sampling Point:** 05

**Investigator(s):** DWG     
**Section, Township, Range:** S      T      R

**Landform (hillslope, terrace, etc.):** Bench     
**Local relief (concave, convex, none):** concave     
**Slope:** 3.5 % / 2.0 °

**Subregion (LRR):** LRR C     
**Lat.:** 38 55 11.06     
**Long.:** -121 0 11.97     
**Datum:** WGS84

**Soil Map Unit Name:** Auburn-Sobrante-Rock outcrop complex, 2 to 30 percent slopes     
**NWI classification:**

**Are climatic/hydrologic conditions on the site typical for this time of year?** Yes ☒ No ☐ (If no, explain in Remarks.)

**Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?**     
**Are "Normal Circumstances" present?** Yes ☒ No ☐

**Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?**     
**(If needed, explain any answers in Remarks.)**

## Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks:</b>	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	0 (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	0.0% (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				<b>Prevalence Index worksheet:</b>	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:	
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL spec ies	0 x 1 = 0
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW spec ies	0 x 2 = 0
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC spec ies	5 x 3 = 15
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU spec ies	0 x 4 = 0
	0	<input type="checkbox"/> 0.0%	_____	UPL spec ies	30 x 5 = 150
	0	<b>= Total Cover</b>		Column Total s:	35 (A) 165 (B)
<b>Herb Stratum (Plot size: 5 x 5)</b>				Prevalence Index = B/A = 4.714	
1. Hirshfeldia incana	25	<input checked="" type="checkbox"/> 71.4%	UPL	<b>Hydrophytic Vegetation Indicators:</b>	
2. Plantago lanceolata	5	<input type="checkbox"/> 14.3%	FAC	<input type="checkbox"/> Dominance Test is > 50%	
3. Erodium cicutarium	5	<input type="checkbox"/> 14.3%	UPL	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/> 0.0%	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
11. _____	0	<input type="checkbox"/> 0.0%	_____		
	35	<b>= Total Cover</b>			
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
1. _____	0	<input type="checkbox"/> 0.0%	_____		
2. _____	0	<input type="checkbox"/> 0.0%	_____		
	0	<b>= Total Cover</b>			
<b>% Bare Ground in Herb Stratum:</b> 65 <b>% Cover of Biotic Crust:</b> 0					

Remarks:

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Soil**

Sampling Point: 05

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR	3/3	100				Sand	

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup>Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (LRR C)  
☐ 1 cm Muck (A9) (LRR D)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Muck Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>3</sup>**

- ☐ 1 cm Muck (A9) (LRR C)  
☐ 2 cm Muck (A10) (LRR B)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

**Hydrology****Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (Nonriverine)  
☐ Sediment Deposits (B2) (Nonriverine)  
☐ Drift deposits (B3) (Nonriverine)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)  
☐ Sediment Deposits (B2) (Riverine)  
☐ Drift Deposits (B3) (Riverine)  
☐ Drainage Patterns (B10)  
☐ Dry Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): 0Water Table Present? Yes ☐ No ☒ Depth (inches): 0Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): 0**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks:

Appendix B

Plot ID:

05

Photo Path: C:\Users\dgallagher.MIG\Desktop\MB\_Test\_Point\_Photos\



Photo File: **TP\_05.jpg**

Orientation:

-facing

Lat/Long or UTM: Long/Easting: **-121 0 11.97**

Lat/Northing: **38 55 11.06**

Description:

No Photo

Photo File: **None.bmp**

Orientation:

-facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:



Mammoth Bar  
Waters and Wetland Delineation  
June 2018

## **Appendix C Site Photos**

Mammoth Bar  
Waters and Wetland Delineation  
June 2018



**Photo 1.** Looking downstream from the top of bank at the point bar. The cut bank is visible on the right of the photo along with riparian vegetation. The Middle Fork is to the left of the point bar and is not visible in the photo.

Mammoth Bar  
Waters and Wetland Delineation  
June 2018



**Photo 2.** Looking downstream from the point bar. The cut bank is clearly visible on the right. The point bar is mostly devoid of vegetation and is composed of cobble cover and fine sediment, both of which were used as geomorphic indicators in delineating the OHWM.



Mammoth Bar  
Waters and Wetland Delineation  
June 2018



**Photo 3.** Looking downstream from the top of bank. The Middle Fork is visible in the background. Riparian vegetation (sandbar and arroyo willows) is clearly visible adjacent to the Middle Fork and was used a vegetation indicator in delineating the OHWM.

Mammoth Bar  
Waters and Wetland Delineation  
June 2018

## **Appendix D Plant Species Observed Within the Project Area**

Mammoth Bar  
Waters and Wetland Delineation  
June 2018

Scientific Name	Common Name	Wetland Indicator Status	Native
<i>Acmispon americanus</i> var. <i>americanus</i>	AMERICAN BIRD'S FOOT TREFOIL	UPL	Yes
<i>Cyperus eragrostis</i>	TALL FLATSEGE	FACW	Yes
<i>Erigonum nudum</i> var. <i>oblongifolium</i>	NAKED BUCKWHEAT	Not Rated	Yes
<i>Erodium botrys</i>	BROAD LEAF FILAREE	FACU	No
<i>Erodium brachycarpum</i>	FOOTHILL FILAREE	Not Rated	No
<i>Erodium cicutarium</i>	RED STEM FILAREE	UPL	No
<i>Hirshfeldia incana</i>	SHORTPOD MUSTARD	UPL	No
<i>Plantago lanceolata</i>	ENGLISH PLANTAIN	FAC	No
<i>Pinus sabiniana</i>	CALIFORNIA FOOTHILL PINE	Not Rated	Yes
<i>Populus fremontii</i>	FREMONT'S COTTONWOOD	Not Rated	Yes
<i>Quercus wislizeni</i>	INTERIOR LIVE OAK	Not Rated	Yes
<i>Robinia pseudoacacia</i>	BLACK LOCUST	FACU	No
<i>Rubus ursinus</i>	CALIFORNIA BLACKBERRY	FAC	Yes
<i>Rumex acetosella</i>	SHEEP SORREL	FACU	No
<i>Rumex crispus</i>	CURLY DOCK	FAC	No
<i>Salix exigua</i>	SANDBAR WILLOW	FACW	Yes
<i>Salix laevigata</i>	RED WILLOW	FACW	Yes
<i>Salix lasiolepis</i>	ARROYO WILLOW	FACW	Yes
<i>Verbascum thapsus</i>	WOLLY MULLEIN	FACU	No
<i>Xanthium strumarium</i>	ROUGH COCKLEBURR	FAC	Yes

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**Mammoth Bar - OHMVR**  
**Sacramento Valley Air Basin, Annual**

## 1.0 Project Characteristics

---

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	17.50	Acre	17.50	762,300.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	65
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MW hr)</b>	590.31	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Single phase construction

Off-road Equipment - Equipment list from Nathan Harper (email 01/24/2018)

Trips and VMT - Worker information from Nathan Harper (emailed 01/24/2018)

Grading - Materials imported/exported from Nathan Harper email

Architectural Coating - No architectural coating

Construction Off-road Equipment Mitigation -

Vehicle Trips - The proposed project would not result in any changes to operational vehicle trips

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	61.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblGrading	AcresOfGrading	152.50	17.50
tblGrading	MaterialExported	0.00	4,074.00
tblGrading	MaterialImported	0.00	4,074.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	HaulingTripNumber	1,019.00	1,018.00
tblTripsAndVMT	VendorTripNumber	125.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	20.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	320.00	0.00



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tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	64.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

## 2.0 Emissions Summary

---

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1591	1.8759	1.0993	2.0100e-003	0.1984	0.0805	0.2789	0.1033	0.0740	0.1774	0.0000	183.5818	183.5818	0.0552	0.0000	184.9617
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1591	1.8759	1.0993	2.0100e-003	0.1984	0.0805	0.2789	0.1033	0.0740	0.1774	0.0000	183.5818	183.5818	0.0552	0.0000	184.9617

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1591	1.8759	1.0993	2.0100e-003	0.0919	0.0805	0.1723	0.0472	0.0740	0.1212	0.0000	183.5816	183.5816	0.0552	0.0000	184.9615
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1591	1.8759	1.0993	2.0100e-003	0.0919	0.0805	0.1723	0.0472	0.0740	0.1212	0.0000	183.5816	183.5816	0.0552	0.0000	184.9615

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	53.71	0.00	38.22	54.34	0.00	31.66	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-4-2018	9-3-2018	2.0263	2.0263
		Highest	2.0263	2.0263

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.1800e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.3045	0.0000	0.3045	0.0180	0.0000	0.7544
Water						0.0000	0.0000		0.0000	0.0000	0.0000	19.5407	19.5407	9.6000e-004	2.0000e-004	19.6239
Total	7.1800e-003	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3045	19.5410	19.8455	0.0190	2.0000e-004	20.3785

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**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.1800e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.3045	0.0000	0.3045	0.0180	0.0000	0.7544
Water						0.0000	0.0000		0.0000	0.0000	0.0000	19.5407	19.5407	9.6000e-004	2.0000e-004	19.6239
Total	7.1800e-003	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3045	19.5410	19.8455	0.0190	2.0000e-004	20.3785

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail****Construction Phase**

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/4/2018	6/3/2018	5	0	
2	Grading	Grading	6/4/2018	8/27/2018	5	61	
3	Site Preparation	Site Preparation	6/30/2018	6/29/2018	5	0	
4	Building Construction	Building Construction	8/25/2018	8/24/2018	5	0	
5	Paving	Paving	10/19/2019	10/18/2019	5	0	
6	Architectural Coating	Architectural Coating	11/16/2019	11/15/2019	5	0	

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 17.5****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Dumpers/Tenders	2	10.00	16	0.38
Demolition	Excavators	1	10.00	158	0.38
Demolition	Graders	1	10.00	187	0.41
Demolition	Rubber Tired Dozers	2	10.00	247	0.40
Demolition	Rubber Tired Loaders	1	10.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	10.00	0.00	1,018.00	20.00	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### Water Exposed Area

### 3.2 Demolition - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.2 Demolition - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]



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**3.2 Demolition - 2018****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**3.3 Grading - 2018****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1938	0.0000	0.1938	0.1021	0.0000	0.1021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1553	1.8154	1.0702	1.8900e-003		0.0803	0.0803		0.0739	0.0739	0.0000	172.7779	172.7779	0.0538	0.0000	174.1226
<b>Total</b>	<b>0.1553</b>	<b>1.8154</b>	<b>1.0702</b>	<b>1.8900e-003</b>	<b>0.1938</b>	<b>0.0803</b>	<b>0.2741</b>	<b>0.1021</b>	<b>0.0739</b>	<b>0.1760</b>	<b>0.0000</b>	<b>172.7779</b>	<b>172.7779</b>	<b>0.0538</b>	<b>0.0000</b>	<b>174.1226</b>

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**3.3 Grading - 2018****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0585	9.7600e-003	7.0000e-005	1.8000e-004	9.0000e-005	2.7000e-004	5.0000e-005	9.0000e-005	1.4000e-004	0.0000	6.6181	6.6181	1.2600e-003	0.0000	6.6497
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3500e-003	1.9600e-003	0.0193	5.0000e-005	4.4600e-003	3.0000e-005	4.4900e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	4.1857	4.1857	1.5000e-004	0.0000	4.1894
<b>Total</b>	<b>3.8400e-003</b>	<b>0.0605</b>	<b>0.0290</b>	<b>1.2000e-004</b>	<b>4.6400e-003</b>	<b>1.2000e-004</b>	<b>4.7600e-003</b>	<b>1.2400e-003</b>	<b>1.2000e-004</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>10.8038</b>	<b>10.8038</b>	<b>1.4100e-003</b>	<b>0.0000</b>	<b>10.8391</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0872	0.0000	0.0872	0.0459	0.0000	0.0459	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1553	1.8154	1.0702	1.8900e-003		0.0803	0.0803		0.0739	0.0739	0.0000	172.7777	172.7777	0.0538	0.0000	174.1224
<b>Total</b>	<b>0.1553</b>	<b>1.8154</b>	<b>1.0702</b>	<b>1.8900e-003</b>	<b>0.0872</b>	<b>0.0803</b>	<b>0.1675</b>	<b>0.0459</b>	<b>0.0739</b>	<b>0.1198</b>	<b>0.0000</b>	<b>172.7777</b>	<b>172.7777</b>	<b>0.0538</b>	<b>0.0000</b>	<b>174.1224</b>

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### 3.3 Grading - 2018

### **Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0585	9.7600e-003	7.0000e-005	1.8000e-004	9.0000e-005	2.7000e-004	5.0000e-005	9.0000e-005	1.4000e-004	0.0000	6.6181	6.6181	1.2600e-003	0.0000	6.6497
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3500e-003	1.9600e-003	0.0193	5.0000e-005	4.4600e-003	3.0000e-005	4.4900e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	4.1857	4.1857	1.5000e-004	0.0000	4.1894
Total	3.8400e-003	0.0605	0.0290	1.2000e-004	4.6400e-003	1.2000e-004	4.7600e-003	1.2400e-003	1.2000e-004	1.3600e-003	0.0000	10.8038	10.8038	1.4100e-003	0.0000	10.8391

### 3.4 Site Preparation - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.4 Site Preparation - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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### 3.4 Site Preparation - 2018

### **Mitigated Construction Off-Site**

[illegible]

### 3.5 Building Construction - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.5 Building Construction - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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### 3.5 Building Construction - 2018

### **Mitigated Construction Off-Site**

[illegible]

### 3.6 Paving - 2019

### Unmitigated Construction On-Site

[illegible]

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### 3.6 Paving - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]



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### 3.6 Paving - 2019

### **Mitigated Construction Off-Site**

[illegible]

### 3.7 Architectural Coating - 2019

### Unmitigated Construction On-Site

[illegible]

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### 3.7 Architectural Coating - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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**3.7 Architectural Coating - 2019****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.517399	0.041376	0.195828	0.133193	0.031071	0.006803	0.019925	0.042238	0.001728	0.002100	0.006246	0.000812	0.001281

## 5.0 Energy Detail

Historical Energy Use: N

[illegible]

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**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.1800e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Unmitigated	7.1800e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
<b>Total</b>	<b>7.1900e-003</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.3000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
<b>Total</b>	<b>7.1900e-003</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.3000e-004</b>

**7.0 Water Detail**



## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.5407	9.6000e-004	2.0000e-004	19.6239
Unmitigated	19.5407	9.6000e-004	2.0000e-004	19.6239

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 20.8509	19.5407	9.6000e-004	2.0000e-004	19.6239
<b>Total</b>		<b>19.5407</b>	<b>9.6000e-004</b>	<b>2.0000e-004</b>	<b>19.6239</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 20.8509	19.5407	9.6000e-004	2.0000e-004	19.6239
<b>Total</b>		<b>19.5407</b>	<b>9.6000e-004</b>	<b>2.0000e-004</b>	<b>19.6239</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3045	0.0180	0.0000	0.7544
Unmitigated	0.3045	0.0180	0.0000	0.7544

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.5	0.3045	0.0180	0.0000	0.7544
<b>Total</b>		<b>0.3045</b>	<b>0.0180</b>	<b>0.0000</b>	<b>0.7544</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.5	0.3045	0.0180	0.0000	0.7544
<b>Total</b>		<b>0.3045</b>	<b>0.0180</b>	<b>0.0000</b>	<b>0.7544</b>

**9.0 Operational Offroad**

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

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### Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**Mammoth Bar - OHMVR**  
**Sacramento Valley Air Basin, Summer**

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	17.50	Acre	17.50	762,300.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	65
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MW hr)</b>	590.31	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Single phase construction

Off-road Equipment - Equipment list from Nathan Harper (email 01/24/2018)

Trips and VMT - Worker information from Nathan Harper (emailed 01/24/2018)

Grading - Materials imported/exported from Nathan Harper email

Architectural Coating - No architectural coating

Construction Off-road Equipment Mitigation -

Vehicle Trips - The proposed project would not result in any changes to operational vehicle trips

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	61.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblGrading	AcresOfGrading	152.50	17.50
tblGrading	MaterialExported	0.00	4,074.00
tblGrading	MaterialImported	0.00	4,074.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	HaulingTripNumber	1,019.00	1,018.00
tblTripsAndVMT	VendorTripNumber	125.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	20.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	320.00	0.00

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	64.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

## 2.0 Emissions Summary

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.2215	61.5270	36.1288	0.0661	6.5122	6.5844	9.1497	3.3893	6.0914	5.8159	0.0000	6,663.164 1	6,663.164 1	1.9932	0.0000	6,712.993 0
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.9534	0.0000	0.0000	0.8874	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	5.2215	61.5270	36.1288	0.0661	6.5122	6.5844	9.1497	3.3893	6.0914	5.8159	0.0000	6,663.164 1	6,663.164 1	1.9932	0.0000	6,712.993 0

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.2215	61.5270	36.1288	0.0661	3.0175	6.5844	5.6550	1.5483	6.0914	3.9749	0.0000	6,663.164 1	6,663.164 1	1.9932	0.0000	6,712.993 0
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.9534	0.0000	0.0000	0.8874	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	5.2215	61.5270	36.1288	0.0661	3.0175	6.5844	5.6550	1.5483	6.0914	3.9749	0.0000	6,663.164 1	6,663.164 1	1.9932	0.0000	6,712.993 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	53.66	0.00	38.19	54.32	0.00	31.65	0.00	0.00	0.00	0.00	0.00	0.00



## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0395</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.0900e-003</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0395</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.0900e-003</b>

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/4/2018	6/3/2018	5	0	
2	Grading	Grading	6/4/2018	8/27/2018	5	61	
3	Site Preparation	Site Preparation	6/30/2018	6/29/2018	5	0	
4	Building Construction	Building Construction	8/25/2018	8/24/2018	5	0	
5	Paving	Paving	10/19/2019	10/18/2019	5	0	
6	Architectural Coating	Architectural Coating	11/16/2019	11/15/2019	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 17.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Dumpers/Tenders	2	10.00	16	0.38
Demolition	Excavators	1	10.00	158	0.38
Demolition	Graders	1	10.00	187	0.41
Demolition	Rubber Tired Dozers	2	10.00	247	0.40
Demolition	Rubber Tired Loaders	1	10.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	10.00	0.00	1,018.00	20.00	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### Water Exposed Area

### 3.2 Demolition - 2018

### Unmitigated Construction On-Site

[illegible]

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.2 Demolition - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**3.2 Demolition - 2018****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**3.3 Grading - 2018****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3540	0.0000	6.3540	3.3473	0.0000	3.3473			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230		6,244.428 4	6,244.428 4	1.9440		6,293.027 8
<b>Total</b>	<b>5.0901</b>	<b>59.5218</b>	<b>35.0894</b>	<b>0.0620</b>	<b>6.3540</b>	<b>2.6337</b>	<b>8.9877</b>	<b>3.3473</b>	<b>2.4230</b>	<b>5.7703</b>		<b>6,244.428 4</b>	<b>6,244.428 4</b>	<b>1.9440</b>		<b>6,293.027 8</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**3.3 Grading - 2018****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0465	1.9471	0.2795	2.3900e-003	6.1800e-003	2.7000e-003	8.8800e-003	1.7200e-003	2.5800e-003	4.3100e-003		251.2578	251.2578	0.0432		252.3378
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0849	0.0581	0.7599	1.6800e-003	0.1520	1.0500e-003	0.1531	0.0403	9.7000e-004	0.0413		167.4780	167.4780	5.9800e-003		167.6274
<b>Total</b>	<b>0.1314</b>	<b>2.0053</b>	<b>1.0394</b>	<b>4.0700e-003</b>	<b>0.1582</b>	<b>3.7500e-003</b>	<b>0.1620</b>	<b>0.0420</b>	<b>3.5500e-003</b>	<b>0.0456</b>		<b>418.7357</b>	<b>418.7357</b>	<b>0.0492</b>		<b>419.9652</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8593	0.0000	2.8593	1.5063	0.0000	1.5063			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230	0.0000	6,244.4284	6,244.4284	1.9440		6,293.0278
<b>Total</b>	<b>5.0901</b>	<b>59.5218</b>	<b>35.0894</b>	<b>0.0620</b>	<b>2.8593</b>	<b>2.6337</b>	<b>5.4930</b>	<b>1.5063</b>	<b>2.4230</b>	<b>3.9293</b>	<b>0.0000</b>	<b>6,244.4284</b>	<b>6,244.4284</b>	<b>1.9440</b>		<b>6,293.0278</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.3 Grading - 2018

### **Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0465	1.9471	0.2795	2.3900e-003	6.1800e-003	2.7000e-003	8.8800e-003	1.7200e-003	2.5800e-003	4.3100e-003		251.2578	251.2578	0.0432		252.3378
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0849	0.0581	0.7599	1.6800e-003	0.1520	1.0500e-003	0.1531	0.0403	9.7000e-004	0.0413		167.4780	167.4780	5.9800e-003		167.6274
<b>Total</b>	<b>0.1314</b>	<b>2.0053</b>	<b>1.0394</b>	<b>4.0700e-003</b>	<b>0.1582</b>	<b>3.7500e-003</b>	<b>0.1620</b>	<b>0.0420</b>	<b>3.5500e-003</b>	<b>0.0456</b>		<b>418.7357</b>	<b>418.7357</b>	<b>0.0492</b>		<b>419.9652</b>

### 3.4 Site Preparation - 2018

### Unmitigated Construction On-Site

[illegible]



## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.4 Site Preparation - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.4 Site Preparation - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.5 Building Construction - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.5 Building Construction - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.5 Building Construction - 2018

### **Mitigated Construction Off-Site**

[illegible]

### 3.6 Paving - 2019

### Unmitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.6 Paving - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.6 Paving - 2019

### **Mitigated Construction Off-Site**

[illegible]

### 3.7 Architectural Coating - 2019

### Unmitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

### 3.7 Architectural Coating - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**3.7 Architectural Coating - 2019****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**



## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.517399	0.041376	0.195828	0.133193	0.031071	0.006803	0.019925	0.042238	0.001728	0.002100	0.006246	0.000812	0.001281

## 5.0 Energy Detail

Historical Energy Use: N

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

## 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Unmitigated	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
<b>Total</b>	<b>0.0394</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>		<b>4.0900e-003</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
<b>Total</b>	<b>0.0394</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>		<b>4.0900e-003</b>

**7.0 Water Detail**

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Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Summer

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## 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

---

### Fire Pumps and Emergency Generators

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

### Boilers

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

### User Defined Equipment

Equipment Type	Number
----------------	--------

## 11.0 Vegetation

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**Mammoth Bar - OHMVR**  
**Sacramento Valley Air Basin, Winter**

## 1.0 Project Characteristics

---

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	17.50	Acre	17.50	762,300.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	65
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MW hr)</b>	590.31	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Single phase construction

Off-road Equipment - Equipment list from Nathan Harper (email 01/24/2018)

Trips and VMT - Worker information from Nathan Harper (emailed 01/24/2018)

Grading - Materials imported/exported from Nathan Harper email

Architectural Coating - No architectural coating

Construction Off-road Equipment Mitigation -

Vehicle Trips - The proposed project would not result in any changes to operational vehicle trips

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	61.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblGrading	AcresOfGrading	152.50	17.50
tblGrading	MaterialExported	0.00	4,074.00
tblGrading	MaterialImported	0.00	4,074.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	HaulingTripNumber	1,019.00	1,018.00
tblTripsAndVMT	VendorTripNumber	125.00	0.00
tblTripsAndVMT	WorkerTripLength	10.80	20.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	320.00	0.00

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	64.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

## 2.0 Emissions Summary

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.2274	61.4678	36.1083	0.0656	6.5122	6.5844	9.1504	3.3893	6.0914	5.8166	0.0000	6,613.870 0	6,613.870 0	1.9986	0.0000	6,663.835 1
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.9534	0.0000	0.0000	0.8874	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	5.2274	61.4678	36.1083	0.0656	6.5122	6.5844	9.1504	3.3893	6.0914	5.8166	0.0000	6,613.870 0	6,613.870 0	1.9986	0.0000	6,663.835 1

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.2274	61.4678	36.1083	0.0656	3.0175	6.5844	5.6557	1.5483	6.0914	3.9756	0.0000	6,613.870 0	6,613.870 0	1.9986	0.0000	6,663.835 1
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.9534	0.0000	0.0000	0.8874	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	5.2274	61.4678	36.1083	0.0656	3.0175	6.5844	5.6557	1.5483	6.0914	3.9756	0.0000	6,613.870 0	6,613.870 0	1.9986	0.0000	6,663.835 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	53.66	0.00	38.19	54.32	0.00	31.65	0.00	0.00	0.00	0.00	0.00	0.00

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0395</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.0900e-003</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0395</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>4.0900e-003</b>

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/4/2018	6/3/2018	5	0	
2	Grading	Grading	6/4/2018	8/27/2018	5	61	
3	Site Preparation	Site Preparation	6/30/2018	6/29/2018	5	0	
4	Building Construction	Building Construction	8/25/2018	8/24/2018	5	0	
5	Paving	Paving	10/19/2019	10/18/2019	5	0	
6	Architectural Coating	Architectural Coating	11/16/2019	11/15/2019	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 17.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Dumpers/Tenders	2	10.00	16	0.38
Demolition	Excavators	1	10.00	158	0.38
Demolition	Graders	1	10.00	187	0.41
Demolition	Rubber Tired Dozers	2	10.00	247	0.40
Demolition	Rubber Tired Loaders	1	10.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

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## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	10.00	0.00	1,018.00	20.00	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### Water Exposed Area

### 3.2 Demolition - 2018

### Unmitigated Construction On-Site

[illegible]

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Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.2 Demolition - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**3.2 Demolition - 2018****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**3.3 Grading - 2018****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3540	0.0000	6.3540	3.3473	0.0000	3.3473			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230		6,244.428 4	6,244.428 4	1.9440		6,293.027 8
<b>Total</b>	<b>5.0901</b>	<b>59.5218</b>	<b>35.0894</b>	<b>0.0620</b>	<b>6.3540</b>	<b>2.6337</b>	<b>8.9877</b>	<b>3.3473</b>	<b>2.4230</b>	<b>5.7703</b>		<b>6,244.428 4</b>	<b>6,244.428 4</b>	<b>1.9440</b>		<b>6,293.027 8</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**3.3 Grading - 2018****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0525	1.8738	0.3899	2.1200e-003	6.1800e-003	3.3900e-003	9.5700e-003	1.7200e-003	3.2400e-003	4.9700e-003		222.5183	222.5183	0.0495		223.7549
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0722	0.6290	1.4800e-003	0.1520	1.0500e-003	0.1531	0.0403	9.7000e-004	0.0413		146.9233	146.9233	5.1700e-003		147.0524
<b>Total</b>	<b>0.1373</b>	<b>1.9460</b>	<b>1.0189</b>	<b>3.6000e-003</b>	<b>0.1582</b>	<b>4.4400e-003</b>	<b>0.1627</b>	<b>0.0420</b>	<b>4.2100e-003</b>	<b>0.0463</b>		<b>369.4416</b>	<b>369.4416</b>	<b>0.0546</b>		<b>370.8073</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8593	0.0000	2.8593	1.5063	0.0000	1.5063			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230	0.0000	6,244.4284	6,244.4284	1.9440		6,293.0278
<b>Total</b>	<b>5.0901</b>	<b>59.5218</b>	<b>35.0894</b>	<b>0.0620</b>	<b>2.8593</b>	<b>2.6337</b>	<b>5.4930</b>	<b>1.5063</b>	<b>2.4230</b>	<b>3.9293</b>	<b>0.0000</b>	<b>6,244.4284</b>	<b>6,244.4284</b>	<b>1.9440</b>		<b>6,293.0278</b>



## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.3 Grading - 2018

### **Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0525	1.8738	0.3899	2.1200e-003	6.1800e-003	3.3900e-003	9.5700e-003	1.7200e-003	3.2400e-003	4.9700e-003		222.5183	222.5183	0.0495		223.7549
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0722	0.6290	1.4800e-003	0.1520	1.0500e-003	0.1531	0.0403	9.7000e-004	0.0413		146.9233	146.9233	5.1700e-003		147.0524
<b>Total</b>	<b>0.1373</b>	<b>1.9460</b>	<b>1.0189</b>	<b>3.6000e-003</b>	<b>0.1582</b>	<b>4.4400e-003</b>	<b>0.1627</b>	<b>0.0420</b>	<b>4.2100e-003</b>	<b>0.0463</b>		<b>369.4416</b>	<b>369.4416</b>	<b>0.0546</b>		<b>370.8073</b>

### 3.4 Site Preparation - 2018

### Unmitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.4 Site Preparation - 2018

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

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### 3.4 Site Preparation - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.5 Building Construction - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.5 Building Construction - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.5 Building Construction - 2018

### **Mitigated Construction Off-Site**

[illegible]

### 3.6 Paving - 2019

### Unmitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.6 Paving - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.6 Paving - 2019

### **Mitigated Construction Off-Site**

[illegible]

### 3.7 Architectural Coating - 2019

### Unmitigated Construction On-Site

[illegible]

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

### 3.7 Architectural Coating - 2019

### Unmitigated Construction Off-Site

[illegible]

### **Mitigated Construction On-Site**

[illegible]



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**3.7 Architectural Coating - 2019****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.517399	0.041376	0.195828	0.133193	0.031071	0.006803	0.019925	0.042238	0.001728	0.002100	0.006246	0.000812	0.001281

## 5.0 Energy Detail

Historical Energy Use: N

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

## 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
Unmitigated	0.0395	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
<b>Total</b>	<b>0.0394</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>		<b>4.0900e-003</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.8300e-003	3.8300e-003	1.0000e-005		4.0900e-003
<b>Total</b>	<b>0.0394</b>	<b>2.0000e-005</b>	<b>1.8100e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>3.8300e-003</b>	<b>3.8300e-003</b>	<b>1.0000e-005</b>		<b>4.0900e-003</b>

**7.0 Water Detail**

## Mammoth Bar - OHMVR - Sacramento Valley Air Basin, Winter

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**7.1 Mitigation Measures Water**

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**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**9.0 Operational Offroad**

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

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**Fire Pumps and Emergency Generators**

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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