Program Environmental Impact Report

MID Recreational Facilities Improvements at Lake McClure and McSwain Reservoirs

Merced Irrigation District

Mariposa County, California
February 6, 2025

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Table of Contents

Figures

Tables

Appendices

CHAPTER 1 INTRODUCTION

This draft Program Environmental Impact Report (PEIR) has been prepared in accordance with the California Environmental Quality Act (CEQA), which is found in the California Public Resources Code (PRC), Division 13; and with the CEQA Guidelines, which are found in the California Code of Regulations, Title 14, beginning with Section 15000. This draft PEIR was prepared by Merced Irrigation District (Merced ID), the lead agency for the Merced ID Recreation Facilities Improvement Project (Proposed Project). Per CEQA, the lead agency for a project is the public agency with primary responsibility for carrying out or approving the project, as well as implementing CEQA requirements.

The Proposed Project comprises improvements at a total of five existing recreational areas at Lake McClure and McSwain Reservoir, and one new recreation area (Mack Island) at Lake McClure, all within the Federal Energy Regulatory Commission (FERC) boundaries of the Merced River Hydroelectric Project (Merced River Project); further, continued operations and maintenance at one recreation area (Merced Falls Recreation Area) within the FERC boundaries of the Merced Falls Hydroelectric Project (Merced Falls Project) is proposed as part of the Proposed Project.

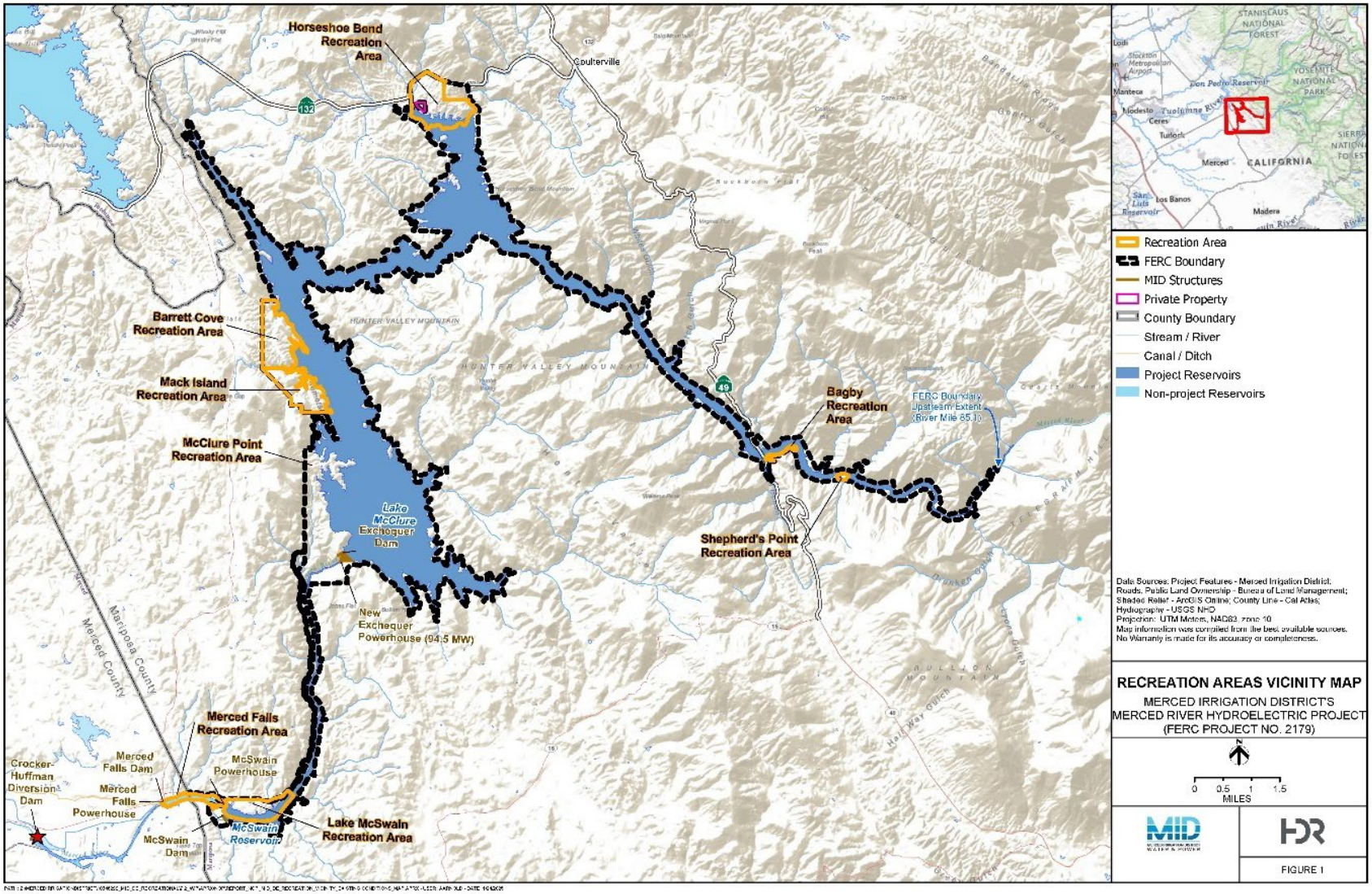
The Proposed Project activities at all existing Merced River Project recreation areas would include improvements, continuation of current operation and maintenance activities, and modernizations and expansion of existing public facilities, while the new recreation area at Mack Island would require construction of a new primitive campsite on Mack Island, installation of a pedestrian-only access bridge from the "mainland", and connection to the recently implemented Phase 1 of the Exchequer Mountain Bike Park (Exchequer Mtn Bike Park; CEQAnet State Clearinghouse [SCH] #2016091039).[1] At the Merced Falls Recreation Area, continued operations and maintenance is proposed; there is no proposed construction or changes in operations. Summaries of facilities at the two FERC Project areas are provided below and additional details and proposed construction activities specific to the Merced River Project recreation areas are included in Chapter 2 *Project Description*. Figure 1-1 shows the regional layout of the two FERC Projects.

The five existing recreation areas at Lake McClure and McSwain Reservoir that are included in the Merced River Project include: (1) McClure Point, which includes a campground, picnic area, off-lake water play area, marina, and two boat ramps; (2) Barrett Cove, which includes a campground, swim beach, marina with two boat ramps, and overflow parking; (3) Horseshoe Bend, which includes a campground, off-lake water play area, and boat ramp; (4) Bagby, which includes a campground, boat ramp, and Shepherd's Point primitive area; and (5) the McSwain Recreational Area, which is located at McSwain Reservoir and hosts a campground, picnic area, group picnic area, informal day use area, swim beach, marina, and boat ramp.

The existing recreation area at the Merced Falls Project includes two fishing areas, River's Edge and Merced Falls Fishing Access areas, as well as informal non-motorized boat put-in/take-out locations, informal parking areas and the Angler hiking trail that follows the water impoundment from Hornitos Bridge to the Merced Falls Fishing Access Recreation Area.

[1] The Exchequer Mountain Bike Park Project proponents completed a separate CEQA regulatory process prior to construction at those facilities; the Proposed Project does not include discussion of future improvements or operations at the Exchequer Mountain Bike Park.

Figure 1-1. Layout of the Two FERC Projects



This PEIR will be incorporated by reference into Merced ID's Merced River and Merced Falls Hydropower Relicensing CEQA Initial Study, which will assess the potential impacts of Merced ID accepting new FERC licenses with mandatory conditions for hydropower generation at Merced River and Merced Falls Hydropower Projects (FERC Project No. 2179-043 and FERC Project No. 2467-020, respectively). Both this PEIR and the Hydropower IS/MND are filed in CEQAnet under SCH# 2024051222 (https://ceqanet.opr.ca.gov/2024051222). For the hydropower projects' CEQA IS, Merced ID is also relying on FERC's 2015 Final Environmental Impact Statement (FEIS), with mandatory conditions, in combination with a CEQA Supplemental Analysis (delivered in the previously mentioned IS format), to satisfy CEQA requirements for assessing the relicensing of the two hydropower projects (MID_NOI_20240528 (ca.gov) and FERC 2015 Merced ID FEIS).

Proposed FERC licenses, with mandatory conditions incorporated, include many of the recreation area improvements comprised in the Proposed Project, but also include other hydropower facilities operations and hydrologic river management actions, such as providing for minimum flows and potential monitoring for fisheries. This draft PEIR focuses on the potential for effects on the environment corresponding to recreation improvements proposed herein; the Merced River and Merced Falls Hydropower Relicensing Project with corresponding mandatory conditions is considered in this draft PEIR as a cumulative project, because the effects of Merced ID's acceptance of new FERC licenses are concurrently under CEQA review, and therefore, is reasonably foreseeable as a project. The intent of assessing the Proposed Project recreation area improvements separately, as a broader Merced ID Recreation Area Improvement Plan, is to include analyses of potential impacts corresponding to other modernization and expansion projects for the recreation areas that would benefit future recreational visitors at Lake McClure and McSwain Reservoir but are not elements of the proposed FERC hydropower relicenses with mandatory conditions.

1.1 District Background

Merced ID was formed on December 8, 1919, and has a service area spanning over 164,000 acres. The total water distribution system of Merced ID spans approximately 862 miles and includes natural waterways, unlined and lined canals, sloughs, and pipelines. Merced ID owns, operates, and maintains the New Exchequer and McSwain dams, reservoirs, and hydroelectric facilities, and the Merced Falls diversion dam. Merced ID is overseen by a publicly elected Board of Directors.

The New Exchequer Dam project was completed in 1967; it replaced the smaller Exchequer Dam concrete gravity-arch structure that was constructed for irrigation and hydropower in 1926 and was one of the largest rock fill dams in the world at that time with a crest elevation of 879 feet and 82 miles of shoreline. The old Exchequer Dam was incorporated as an upstream toe to help support the rock-fill embankment.

Lake McClure, (formed by New Exchequer Dam) has a storage capacity of approximately 1,025,000 acre-feet and is Merced ID's primary water storage facility. McSwain Reservoir (formed by McSwain Dam, also constructed in the 1960s) has a storage capacity of 9,730 acre-feet. The New Exchequer Dam serves multiple purposes: Lake McClure provides irrigation and domestic water supply, flood control, hydroelectric power generation, recreation, and support for environmental stewardship.

The two dams and reservoirs are integral parts of the 1964 Merced River Development Project and are licensed by FERC. Merced ID is authorized to function as an electric utility under the California

Water Code. In 1996, Merced ID exercised its authority to begin selling power to retail electric customers.

FERC is an independent agency that, among other responsibilities, regulates the interstate transmission of electricity, natural gas, and oil, and licenses hydroelectric projects. Hydroelectric (or hydropower) projects generate electricity from waves or directly from water flow in ocean currents, tides, or inland waterways. The Merced River Hydroelectric Project consists of two developments, New Exchequer and McSwain dams and reservoirs, which are licensed by the FERC as Project No. 2179-043. The Merced Falls Hydroelectric Project is licensed by FERC as Project No. 2467-020. Information on the FERC relicensing efforts for the Merced River and Merced Falls projects is discussed in Section 1.4.1, *2012 FERC Applications for New Licenses and 2015 NEPA Compliance*.

1.2 Purpose of this Program Environmental Impact Report

As the public agency proposing to approve and implement the Proposed Project, Merced ID is the lead agency under CEQA. The State Water Resources Control Board (Water Board) and California Department of Fish and Wildlife (CDFW) are Responsible and/or Trustee Agencies under CEQA based on their discretionary approval over aspects of the Proposed Project and their utilization of this PEIR for their CEQA compliance. Specifically:

- The Water Board may rely on this CEQA analysis, as incorporated by reference into the hydropower relicensing CEQA documentation, to make its decision regarding whether to issue a Clean Water Act (CWA) Section 401 water quality certification (WQC) for the FERC Merced River and Merced Falls Hydroelectric Projects' relicensings.
- CDFW may rely on this CEQA analysis to make its decision regarding whether to issue a Fish and Game Code Section 1602 Lake and Streambed Alteration Agreement for the Proposed Project. Further, if an incidental take permit (Fish and Game Code Section 2081) is required for potential take of California Endangered Species Act (CESA) listed species, this CEQA process would also support that decision process.

Also, in accordance with CEQA Guidelines Section 15002, Merced ID is publishing this Draft PEIR to:

- Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects using alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

This draft PEIR does not trigger implementation of Environmental Commitments or Mandatory Conditions included in the FERC hydropower licensing applications (https://mercedid.org/ferc-relicensing/)and in the FEIS 2015 FERC Hydropower FEIS (FERC 2015 Merced ID FEIS) *Staff Alternative with Mandatory Conditions*. Implementation of license requirements and corresponding conditions would be required to start after a new license is accepted by Merced ID for each of the

hydropower projects. However, as this PEIR will be incorporated by reference into the Merced ID Hydropower Project IS, the intent is to minimize any potential for conflicts with those commitments included as part of the Proposed Project for the hydropower relicensing IS, as relates to recreation area upgrades and improvements, and with any other reasonably foreseeable requirements that FERC could include in new hydropower licenses for the Merced River and Merced Falls hydropower projects. As such, descriptions of Mitigation Measures that would be required if recreation projects are initiated prior to relicensing of the projects are consistent with those terms proposed by Merced ID in their FLAs, as well as FERC's 2015 FEIS preferred alternative of *Staff Alternative with Mandatory Conditions*, as related to recreation facilities.

1.3 Project Goal and Objectives

Lake McClure and the McSwain Reservoir have afforded many opportunities for public recreational use. Currently, with everything from fishing to boating, swimming to camping, and biking to hiking, Lake McClure and Lake McSwain offer some of the best recreational opportunities in California.

The objectives of the Proposed Project include:

1. Replacing and expanding capacities of aging underground and surface water, sewer, and electrical utilities infrastructure, including, as necessary, reaches of pipe that are original equipment that date back to the 1970s;
2. Continuing the Merced ID recreation legacy by providing upgrades to existing facilities to meet new and evolving recreation customer demands and upgrading facilities to meet new accommodation standards;
3. Expanding capacities at day use and camping areas, houseboat moorings, and cabin rentals in response to recognized growth trends in recreation facilities' seasonal use, while minimizing potential recreation use impacts to natural, historic, and prehistoric resources; and
4. Modernizing existing recreation areas with new and enhanced features, such as restrooms, adding electric car charging stations, upgrading boat ramps to allow more use during dryer water years, and adding in more fish cleaning and recycling stations.

For the Merced Falls Recreation Area, the objective is to continue the Merced ID recreation area by continued operations and maintenance at the recreation area (details provided in Section 2.3.8).

1.4 FERC Process and Regulatory Compliance

1.4.1 2012 FERC Application for New License and 2015 National Environmental Policy Act (NEPA) Compliance

The Merced River Hydroelectric Project is on the main stem of the Merced River in Mariposa County, about 23 miles northeast of Merced, California. It occupies 11,143 acres of land, with 3,154.9 acres being federal land administered by the U.S. Department of Interior, Bureau of Land Management (BLM) as part of the Sierra Resource Management Area; most of the remaining lands are owned by Merced ID. Two powerhouses and dams, along with appurtenant facilities and recreation areas are included in the Merced River Hydroelectric Project (New Exchequer and

McSwain dams) that have an authorized installed capacity of 101.25 megawatts of power generation. This project generates an average of 387 gigawatt-hours (GWh) of energy annually.

Since the 1970's, Merced ID has owned, operated and maintained five recreation areas adjacent to lakes McClure and McSwain. While the Lake McSwain Recreation Area is located adjacent to Lake McSwain, McClure Point, Barrett Cove, Horseshoe Bend and Bagby recreation areas are all located adjacent to Lake McClure (Figure 2-1). Public recreation facilities' use at the lakes grew in popularity and in 1970, major improvements were completed at the recreation areas. Since that time, most upgrades and improvements have been part of ongoing maintenance and operations activities. Currently, a total of seven boat launch facilities are available in the Parks system, more than 600 campsites are available year-round, floating marinas and boat docks are located on Lake McSwain and on Lake McClure, and activities enjoyed in the recreation areas include fishing, motorized, non-motorized and whitewater boating and kayaking, swimming, picnicking and group gatherings, youth education, camping, hiking and bicycling.

The Merced Falls Project is also on the Merced River at the border of Merced and Mariposa counties, about 7 miles from Snelling, California. The project occupies approximately 65 acres of land, with 1.0 acre of federal land administered by the BLM. Most of the remaining lands are owned by Merced ID. One powerhouse and one 43-foot-tall diversion dam, along with appurtenant facilities and recreation areas with a 65 surface-acre impoundment and approximate storage capacity of 678 acre-feet of water are included in the Merced Falls Hydroelectric Project. The facilities generate an average of 14.4 GWh of energy annually. The Merced Falls Project is operated in a run-of-river mode dependent on water outflow from Merced ID's upstream Merced River Project. Inflow to the project passes through the impoundment, which is kept at a constant water elevation and then flows either through the powerhouse or the dam's radial gates.

The initial FERC licenses for the Merced River and Merced Falls Projects were issued by the Federal Power Commission, FERC's predecessor, effective on March 1, 1964, for a term ending on February 28, 2014. At that time, the Merced Falls Hydroelectric Project was owned and managed by PG&E. On February 8, 2012, PG&E filed an application to relicense the Merced Fall Project with FERC. The licensing process was not completed, and on July 6, 2015, FERC approved transfer of the Merced Falls Project license and associated project lands to Merced ID; formal transfer of ownership and management of the Merced Falls Project, along with lands owned by PG&E, were transferred to Merced ID on March 17, 2017. On February 26, 2012, Merced ID applied to FERC for a new license for the Merced River Project. Both projects continue to operate under annual licenses until the relicensing process is complete. To continue operation and maintenance of the projects, Merced ID must either obtain new federal licenses from FERC that will apply to the projects over multiple decades (proposed 50 years), or continue to apply and be granted single year temporary licenses until a permanent license is accepted by Merced ID.

In the New License Applications (NLA) for each of the projects, Merced ID proposed 50-year licenses to continue to operate the existing Merced River and Merced Falls Hydroelectric projects with no new capacity additions and no new construction, other than construction related to upgrades at recreation facilities. The *Application for a New License for Major Project – Existing Dam for Merced ID's 103.5 megawatt Merced River Hydroelectric Project, FERC Project No. 2179* is being processed in tandem with the *Application for New License for the Merced Falls Hydroelectric Project* for multiple reasons, including the reliance of operations at Merced Falls Project on flows released by the upstream Merced River Hydroelectric Project, and the interrelationship of environmental effects downstream of the two projects. Therefore, FERC prepared a single National Environmental

Policy Act (NEPA) document that included both projects and, on March 30, 2015, FERC issued a Draft multi-project Environmental Impact Statement (EIS). In December 2015, FERC prepared a *Final Environmental Impact Statement for the Merced River Hydroelectric Project – FERC Project No. 2179-043 and the Merced Falls Hydroelectric Project – FERC Project No. 2467-020* (FERC 2015 Merced ID FEIS) in accordance with the NEPA. A Final License Application (FLA) was filed with FERC in 2015 (https://mercedid.org/ferc-relicensing/).

As presented in the 2015 Recreation Plan for the Merced River Project, implementation of the proposed Merced River projects would occur in several phases over a 20-year schedule (see Recreation Plan in Appendix D). The schedule to implement Merced River projects would be triggered by Merced ID's acceptance of a new license for the FERC Merced River Project. Although not included in Merced ID's 2015 Recreation Plan, continued maintenance and operation of the Merced Falls Recreation Area would be triggered by Merced ID's acceptance of a new FERC Merced Falls Project license. Until new licenses are granted for both projects, Merced ID is required to abide by the previous license conditions. As the Recreation Plan is also condition 19 of the BLM final 4(e) conditions to the FEIS, the 2015 Recreation Plan would need to be implemented as part of the new license.

During the FERC NEPA process, Merced ID and FERC initiated early public involvement to encourage citizens, governmental entities, tribes, and other interested parties to identify and resolve issues prior to an application formally being filed with the FERC. As part of the pre-filing process, FERC hosted a scoping meeting in Merced, California, on January 28, 2009, and conducted a site visit on January 29, 2009. A FERC NEPA draft EIS was issued on April 17, 2009. During public draft review, Merced ID also conducted two public meetings to receive oral comments on the Draft EIS in Merced, California on April 30, 2015. Public outreach activities conducted during the 2015 FEIS (FERC 2015 Merced ID FEIS) process are incorporated by reference in this draft PEIR, where relevant.

As mentioned in Section 1.1, the Proposed Project includes many activities that were previously evaluated in FERC's Merced River and Merced Falls hydropower relicensing NEPA in the 2015 FEIS. However, Merced ID includes additional Proposed Project activities that were not commitments made in the new FERC Final License Applications (FLA), and are improvements or expansions proposed by Merced ID. A full description of the Proposed Project is included Section 2.2.

1.4.2 CEQA Compliance

Tribal Consultation

PRC 21080.3.1 and AB 52, Native Americans: CEQA (AB 52) require formal consultation with California Native American tribes during the CEQA process for projects that have a Notice of Preparation (NOP) filed on or after July 1, 2015, because "California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources" (PRC 21080.3.1[a]). "California Native American tribe" refers to a Native American tribe located in California that is on the contact list maintained by the California NAHC (PRC 21073). The purpose of tribal consultation is to determine, as part of the CEQA review process, whether tribal cultural resources (TCRs) are present within a project area, and if so, whether the project would significantly impact those resources. If TCRs may be significantly

impacted, then consultation would also help determine the most appropriate way to avoid or mitigate those impacts.

To fulfill obligations pursuant to PRC 21080.3.1(b) and (c), on April 26, 2021, Merced ID requested assistance from the NAHC to identify California Native American tribes that are traditionally and culturally affiliated with the Proposed Project area. On April 27, 2021, the NAHC provided a list of California Native American tribes in support of these efforts. Merced ID sent notification letters via certified mail on May 10, 2021, to each of the contacts identified by NAHC, providing a brief description of the Proposed Project and an opportunity to request consultation.

Merced ID contacted the Native American Heritage Commission on February 16, 2022, to request a list of California Native American tribes and organizations that may have an interest in the proposed project pursuant to PRC 21080.3.1(c), as well as to request a search of the Sacred Lands File. Tribes identified in this search were contacted on August 1, 2024, and were followed up with by phone and/or email over approximately the next four weeks. The California Historical Resources Information System (CHRIS) housed at the Central California Information Center (CCIC) was also consulted to check for potential sites. Section 3.10 presents full details on all sources referenced to examine potential sites and Tribal interests.

2024 Proposed Project Notice of Preparation (NOP) and Public Scoping

An NOP for the Proposed Project draft PEIR, consistent with CEQA guidelines (PRC § 21083), was released on July 9, 2024. This triggered a 30-day public review period open from July 9 to 5:00 pm on August 7, 2024.

Merced ID accepted written comments and suggestions concerning the Proposed Project via the following communication methods:

- E-mail to RecreationCEQAInfo@mercedid.org
- Click on the "*Comment on Recreation Facilities Improvement PEIR NOP*" button on the Merced ID Recreation website at https://www.lakemcclure.com/recreationceqainfo/
- Postal mail (Direct to: Brooke Gutierrez, Merced ID Parks and Recreation, 9090 Lake McClure Road, Snelling, CA 95369).

Pursuant to California Public Resources Code Section 21083.9 and California Code of Regulations, Title 14, Chapter 3 ("CEQA Guidelines") Section 15082(c)(1), Merced ID presented an overview of the Proposed Project at the July Merced ID Board Meeting on July 23, 2024, at 10:00 am that was open for public attendance. For the Board meeting, comment cards were also made available for the public to submit written comments.

A total of four comment letters were received from the following entities during the public review process:

1. A letter dated July 28, 2024, from Merced River Conservation Committee, Upper Merced River Watershed Council, and Mariposa Trails;
2. A letter dated August 2, 2024, from CDFW, Central Region;
3. A letter dated August 7, 2024, from the State Water Board; and
4. A letter dated July 19, 2024, from the Native American Heritage Commission.

The first three comment letters recommended that Merced ID include the Merced Falls Recreation Area (see Section 2.2) in the Proposed Project; the Merced Falls Recreation Area has been included in this draft PEIR in response to these comments. Other comments generally focused on adding clarity to specific project details to better align with the 2015 FERC FEIS, and recommendations for specific biological species and resource areas to focus analyses. The fourth letter provided details in how to move forward in consultations.

2025 Circulation of this Draft Environmental Impact Report

Merced ID issued a Notice of Availability (NOA) to provide agencies and the public with formal notification that the draft PEIR is available for review and comment.

Merced ID has provided notice by: 1) uploading an NOA, a Notice of Completion (NOC) and the CEQA draft PEIR to the Governor's Office of Planning and Research, State Clearinghouse Unit, via CEQA Submit for publication to CEQAnet; (2) posting the NOA at County Clerk offices for Merced and Mariposa counties, (3) posting the draft PEIR, NOA, and NOC on the Merced ID website, (4) mailing the NOA to responsible/trustee agencies and other interested parties, and (5) publishing the NOA in county newspapers of general circulation in the area affected by the Proposed Project.

The draft PEIR and all appendices are available for review at the following locations:

- Merced ID offices - printed
- Mariposa County Library – printed or electronic format (per library preferences)

Merced ID is circulating this draft PEIR for a 30-day public review and comment period (February 7, 2025, to March 9, 2025). The purpose of public circulation and the public Merced ID Board Meeting is to provide agencies and interested individuals with opportunities to comment on draft PEIR contents.

Written comments or questions concerning this draft PEIR will be accepted via mail or email during this review period and should be directed to the name and addresses listed below. Comments should be e-mailed or postmarked at the earliest possible date, but no later than 30 calendar days from release of the draft PEIR (February 6, 2025), to:

Brooke Gutierrez, Director of Parks & Recreation
Merced ID Parks and Recreation
9090 Lake McClure Road
Snelling, CA 95369
RecreationCEQAInfo@mercedid.org

Interested individuals can also click on the comment button at:

https://www.lakemcclure.com/recreationceqainfo/

Written comments received on the draft PEIR will be included and addressed in the final PEIR.

1.4.3 Other Anticipated Permits and Approvals

Depending on the individual project, and what resources are potentially affected (e.g., in-water vs. out-of-water projects), the following Federal, State, and local permits and approvals may be required to advance individual projects within the Proposed Project. These are listed in Table 1-1.

Table 1-1. Anticipated Permits and Approvals (Federal, State and Local)

Agency and Jurisdiction	Permit, Approval, or Clearance	Relevance
Federal: United States Army Corps of Engineers (USACE): CWA	Section 404 Permit	Permanent or temporary placement and/or removal of material in waters of the US or state, including wetlands
Federal: US Fish and Wildlife Service: Endangered Species Act	Section 7 Consultation, Letter of Concurrence	Presence of federally listed plant and wildlife species and critical habitat within the impact area if unable to avoid
Federal: National Marine Fisheries Service: Endangered Species Act, Magnuson Stevens Essential Fish Habitat	Section 7 Consultation, No Effect Determination	Presence of federally listed aquatic species and critical habitat within the impact area if unable to avoid
Federal: State Historic Preservation Officer: Section 106 of the National Historic Preservation Act (NHPA)	Concurrence on adequacy of identification effort, National Register of Historic Places eligibility determinations, and Finding of Effect; Tribal consultation	Aligned with federal permits and consultations
Federal: BLM	Approvals for projects on BLM-owned lands	Project pre-approval required for all proposed work on BLM-owned land
State: Native American Tribes	Tribal consultation per Assembly Bill 52	Consultation required by CEQA and (AB 52)
State: State Water Resources Control Board (**Responsible Agency)**	Water Quality Certification	For all applications for a FERC license, appropriations of water, and/or diversion of water for domestic, irrigation, power, municipal, industrial, or other beneficial use
State: CDFW **(Trustee/ Responsible Agency)**	• Section 2081 Incidental Take Permit • Lake and Streambed Alteration Agreement	• Presence of state-listed endangered species within the project area • Projects within waters would trigger the need for a Lake and Streambed Alteration Agreement
Local: Mariposa and Merced Counties (potentially **Responsible Agencies**)	Approval for installation and operations and maintenance of the any appurtenant facilities located within County rights of way	Encroachment permits would be required for any project work within County ROW
Local: Private Landowner	Permanent or temporary easements	

1.5 Areas of Potential Controversy

CEQA Guidelines Section 15123 states that an EIR (project- or program-level) must identify areas of known controversy that may have been raised by other agencies, the public, or other stakeholders. There were no areas of controversy related to the Proposed Project or identified in the PEIR scoping process. Comments from Resource Agencies and other interested parties focused on (1) inclusion of the Merced Falls fishing recreation areas in the Proposed Project and (2) clarifications to the

description of the Sherlock Creek Recreation Area. Both subjects have been addressed in this Draft PEIR.

1.6 Summary of Impacts

Implementation of the Proposed Project could have significant impacts on multiple resources. Many of these impacts would be reduced to **Less than Significant** under the conditions proposed under the new license; however, certain biological Resources impacts could occur under the Proposed Project before a new license is accepted. As such, Table 1-2 provides an additional column to discuss Biological Resources impacts, both before and after acceptance of a new license. Titles of mitigation measures relating to Biological Resources have been omitted from the table for the sake of brevity. Please see Table 3.3-4 for a complete list of Biological Resources mitigation measures.

With mitigation measures that would be adopted under the Proposed Project (see Table 1-3) all Proposed Project impacts would be reduced to a **Less than Significant** level.

Table 1-2. Potential Impacts of the Proposed Project

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance	
Air Quality				
Impact AIR-1: Conflict with or Obstruct implementation of an applicable air quality plan	Less than Significant	N/A	Less than Significant	
Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard	Less than Significant	N/A	Less than Significant	
Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations	Less than Significant	N/A	Less than Significant	
Impact AIR-4: Result in other emissions, such as those leading to odors, adversely affecting a substantial number of people	Less than Significant	N/A	Less than Significant	
Biological Resources				
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or	Significant Impact	MM-BIO-1 through MM-BIO-33	Before Acceptance of New License: Less than Significant	After Acceptance of New License: Less than Significant

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance	
special status species in local or regional plans, policies, or regulations or by the CDFW or USFWS				
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CFW or USFWS	Significant Impact	MM-BIO-1 through MM-BIO-33	Before Acceptance of New License: Less than Significant	After Acceptance of New License: Less than Significant
Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands	Significant Impact	MM-BIO-1 through MM-BIO-33	Before Acceptance of New License: Less than Significant	After Acceptance of New License: Less than Significant
Impact BIO-4: 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 wildlife nursery sites	Less than Significant	N/A	Before Acceptance of New License: Less than Significant	After Acceptance of New License: Less than Significant
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	Significant Impact	MM-BIO-1 through MM-BIO-33	Before Acceptance of New License: After Acceptance of New License: Less than Significant	After Acceptance of New License: After Acceptance of New License: Less than Significant
Impact BIO-6: Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	No Impact	N/A	Before Acceptance of New License: No Impact	After Acceptance of New License: No Impact
Cultural Resources				
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	No Impact	N/A	No Impact	

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	Significant Impact	MM-CUL-1: Archaeologically Sensitive Areas – Pre-Construction Measures MM-CUL-2: Archaeological Resources and Tribal Cultural Resources – Discovery During Construction	Less than Significant with Mitigation Incorporated
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.	Significant Impact	MM-CUL-3: Human Remains – Discovery During Construction	Less than Significant with Mitigation Incorporated
Geology and Soils			
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault	No Impact	N/A	No Impact
Impact GEO-2: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking	No Impact	N/A	No Impact
Impact GEO-3: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction	No Impact	N/A	No Impact
Impact GEO-4: Directly or indirectly cause	No Impact	N/A	No Impact

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides			
Impact GEO-5: Result in substantial soil erosion or the loss of topsoil	Significant Impact	MM-HYD-1: Construction Stormwater Management and Treatment Plan	Less than Significant After Mitigation
Impact GEO-6: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse	No Impact	N/A	No Impact
Impact GEO-7: Be located on expansive soil, as defined in table 18-1B of the Uniform Building code (1994), creating substantial direct or indirect risk to life or property	No Impact	N/A	No Impact
Impact GEO-8: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater	No Impact	N/A	No Impact
Impact GEO-9: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Significant Impact	MM-GEO-1: Inadvertent Discovery Protocol	Less than Significant after Mitigation
Greenhouse Gas Emissions			
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Less than Significant	N/A	Less than Significant
Impact GHG-2: Conflict with an applicable plan, policy, or regulation	Less than Significant	N/A	Less than Significant

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
adopted for the purpose of reducing the emissions of GHG			
Hazards and Hazardous Materials			
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than Significant	N/A	Less than Significant
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Less than Significant	N/A	Less than Significant
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No Impact	N/A	No Impact
Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5 and, as a result would it create a significant hazard to the public or the environment	No Impact	N/A	No Impact
Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area	No Impact	N/A	No Impact

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	No Impact	N/A	No Impact
Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires	Less than Significant	N/A	Less than Significant
Hydrology and Water Quality			
Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	Less than Significant	N/A	
Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	No Impact	N/A	No Impact
Impact HYD-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Result in substantial erosion or siltation on- or off-site	Significant Impact	MM HYD-1: Construction Stormwater Management and Treatment Plan	Less than Significant with Mitigation Incorporated
Impact HYD-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the	Less than Significant	N/A	Less than Significant

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
addition of impervious surfaces, in a manner which would: Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site			
Impact HYD-5: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Create or contribute runoff water what would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff	Less than Significant	N/A	Less than Significant
Impact HYD-6: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Impede or redirect flood flows	Less than Significant	N/A	Less than Significant
Impact HYD-7: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation	No Impact	N/A	No Impact
Impact HYD-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	No Impact	N/A	No Impact
Recreation			

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
Impact REC-1: increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	No Impact	N/A	No Impact
Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment	Significant Impact	MM-REC-1: Site Development and Construction Plans.	Less than Significant with Mitigation Incorporated
Tribal Cultural Resources			
Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)	No Impact	N/A	No Impact
Impact TCR-2: Would the project cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Significant Impact	CUL-2: Archaeological Resources and Tribal Cultural Resources – Discovery During Construction MM-CUL-3: Human Remains – Discovery During Construction	Less than Significant with Mitigation Incorporated

Impact	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance
Wildfire			
Impact FIRE-1: Substantially impair an adopted emergency response plan or emergency evacuation plan	No Impact	N/A	No Impact
Impact FIRE-2: Exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	No Impact	N/A	No Impact
Impact FIRE-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment	No Impact	N/A	No Impact
Impact FIRE-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	No Impact	N/A	No Impact

Table 1-3. Mitigation Measures Summary

Mitigation Measure Description	Post License Acceptance
MM-BIO-1: Permits.	Merced ID will consult with the applicable Federal, State, and local agencies to obtain necessary permits and will comply with these permits during all construction activities.
MM-BIO-2: Project Footprint.	Work area footprints will be confined as much as reasonably practicable. All parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities will be confined, to the greatest extent possible, to previously disturbed areas. Additionally, the site footprint/area will be clearly defined and marked to avoid working in areas outside of the approved area. Fences and flagging will be installed by the contractor in a manner that does not impact habitats and other sensitive areas to be avoided and that is clearly visible to personnel on foot and operating heavy equipment.
MM-BIO-3: Garbage and Microtrash.	Work areas will be kept clear of garbage, including microtrash (small pieces of trash or smaller, broken-down pieces of trash). Trash and food will be stored in closed containers and removed daily to reduce attractiveness to opportunistic predators such as coyotes, domestic and feral dogs and cats, opossums, skunks, and raccoons. Littering of trash and food waste will be prohibited. Upon completion of a decommissioning activity, the work site will be inspected to ensure it is free of garbage and microtrash. If garbage or microtrash is detected at the site, it will be removed.
MM-BIO-4: Vehicular Controls.	All proposed project-related vehicle traffic will be confined to established roads, staging areas, and parking areas. Vehicle speeds will not exceed 15 miles per hour, on access roads with no posted speed limit, to avoid collision with special-status species or habitats. Additionally, maintenance or refueling of vehicles or equipment must occur in designated areas and/or a secondary containment, located away from wetted areas.
MM-BIO-5: Clean Fill.	To reduce the introduction of non-native invasive species and weeds, imported fill will be minimized to the extent possible. If required, any imported fill will come from clean sites (soils will be chemically tested as needed) and be weed-free.

Mitigation Measure Description	Post License Acceptance
MM-BIO-6: Worker Environmental Awareness Program (WEAP).	A WEAP will be established and implemented prior to the start of work activities in the field and cover biological and cultural resources. The program will be presented by a qualified biologist and a qualified archaeologist to all construction crew members. If new employees join the crew, they will receive formal, approved training prior to working on site. Upon completion of the orientation, employees will sign a form stating they attended the program and understand all protection measures. A fact sheet containing the presented information will also be prepared and distributed. For biological resources, the WEAP will cover special-status wildlife species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, penalties for violating Federal laws, reporting requirements, environmental commitments, and protective measures to implement in the event that the species is found during activities.
MM-BIO-7: Flagging Sensitive Resources.	Prior to any work occurring, any known sensitive resources, which include, but are not limited to, cultural resources, special-status species, sensitive habitats, targeted nonnative invasive plants and other predetermined areas with significant sensitive resources within or near the proposed work area will be flagged/fenced to ensure that no activities are conducted in those areas.
MM-BIO-8: Minimization of Vegetation Removal.	Disturbance or removal of vegetation will be kept to the minimum necessary to complete project related activities, including riparian vegetation removal and trimming. No native riparian trees with a trunk diameter at breast height in excess of 4 inches will be removed without prior consultation and approval from CDFW. To prevent unintended or unnecessary removal or trimming of riparian vegetation, orange barrier fencing, or flagging, will be erected to clearly define the habitat to be avoided during work activities.
MM-BIO-9: Special-status Semi-Aquatic Species Protections.	Prior to the commencement of any project-related activities or utilization of any project facilities (e.g., staging or parking areas, laydown areas) that may directly affect special-status semi-aquatic species or their associated habitat, a qualified biologist will perform clearance surveys to locate any semi-aquatic species that may be present. Further, if there is an occurrence, species will be allowed to leave the area of its own volition.

Mitigation Measure Description	Post License Acceptance
MM-BIO-10: No Net Loss of Sensitive Communities.	Mitigation for permanent adverse effects on sensitive communities (seasonal wetlands/riparian habitat) will be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at an agency approved mitigation bank. Mitigation as required in regulatory permits issued through CDFW, the USFWS, and/or USACE, as well as the revegetation described in the Project Description, may be applied to satisfy this measure.
MM-BIO-11: Biological Monitor.	If determined necessary by a qualified biologist, a biological monitor will be on site during all ground-disturbing and vegetation removal activities associated with construction in areas of vernal pools, delineated aquatic resources, sensitive communities (as mapped in Appendix E) or known special-status species occurrences identified during pre-construction surveys (MM-BIO-12).
MM-BIO-12: Pre-construction Surveys.	Prior to the start of activities not already covered under existing license measures or plans that may impact biological resources, pre-construction surveys for sensitive habitats and sensitive species will be conducted. Surveys will be conducted by qualified biologists and during the appropriate timeframe for detection of target species, within the given period for the activity (e.g., nesting bird surveys will not be performed for activities that will take place completely outside of the nesting bird season).
MM-BIO-13: Equipment Cleaning.	Off-road equipment brought into construction areas from outside the FERC Project Boundary or from sites known to contain invasive weeds occurrence will be free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of invasive weeds. All construction equipment, earth moving equipment, and vegetation management equipment, excepting chainsaws, will be thoroughly inspected and cleaned before entering the proposed project, to reasonably prevent introduction of invasive weeds.
MM-BIO-14: Avoidance of Aquatic Habitat	Impacts to delineated aquatic resources will be limited to the amount necessary to successfully complete all work activities. To prevent unintended or unnecessary impacts, orange barrier fencing or flagging will be erected to clearly define the aquatic habitat to be avoided. Further, no heavy equipment will operate, or any excavation take place, in the portion of the stream where flowing water is present.
MM-BIO-15: Vernal Pool Fairy Shrimp Protection.	A 250-foot buffer will be flagged around vernal pool habitat when ground-disturbing activities occur adjacent to habitat. A qualified biologist may approve variances to this buffer distance if deemed appropriate. Provision will also protect other species that inhabit vernal pools.

Mitigation Measure Description	Post License Acceptance
MM-BIO-16: Elderberry Shrubs Fencing/Flagging.	All elderberry shrubs will be flagged or fenced with a buffer of 20 feet from their dripline prior to implementation of vegetation management or ground-disturbing activities. A qualified biologist may approve variances to this buffer distance if deemed appropriate. If necessary, the area will be revegetated with native plants once the activity is completed and fencing/flagging removed.
MM-BIO-17: Elderberry Shrubs Training.	A qualified biologist will provide training to project crew prior to work within 165 feet of elderberry shrubs, as well as monitor the work at appropriate intervals. This will be integrated into the WEAP (MM-BIO-7).
MM-BIO-18: Potential Valley Elderberry Longhorn Beetle Habitat.	Elderberry shrubs with stems of over an inch at ground height will be considered as potential habitat and subject to protection. An activity restriction period of March 1 to November 1 of each year within 165 feet of elderberry shrubs that meet this criterion. No elderberry shrubs may be removed during the restriction period.
MM-BIO-19: Smaller Elderberry Shrubs Restrictions.	Elderberry shrubs with stems of less than an inch can be trimmed between November and February. More broadly, any activities that would occur within 165 feet of these smaller shrubs will be conducted, to the extent feasible, between August and February.
MM-BIO-20: Use of Rodenticides or Fumigants.	If California tiger salamander are present, rodenticides and/or burrow fumigants cannot be used within 300 feet of the occurrence without consultation for take under the federal ESA with the USFWS.
MM-BIO-21: California Tiger Salamander Protocol Surveys.	Non-routine ground-disturbing activities are not allowed within 300 feet of California tiger salamander suitable breeding or upland habitat without a pre-activity/pre-construction survey. If surveys locate the species or if any new occurrence of California tiger salamander are located where Project activities may affect them, the CDFW and USFWS must be consulted.
MM-BIO-22: Project Work Area Fencing.	Within 100 feet of California tiger salamander known breeding or upland habitat, per pre-construction surveys, fencing will be erected to prevent California tiger salamander and other special-status species from entering the work area. No synthetic netting may be used in the work area. A qualified biologist may approve variances to this buffer distance if deemed appropriate. Prior to the start of work each morning within the disturbed work limits, a qualified person (trained by a qualified biologist) will check for California tiger salamander under equipment and materials to be used that day. The qualified person will also check all excavated steep-walled holes or trenches for CTS. If CTS are located, they will be allowed to move from the area on their own, unless work must continue in the area, in which case, the CDFW and USFWS will be contacted.

Mitigation Measure Description	Post License Acceptance
MM-BIO-23: Work Area Inspections.	If there are open culverts or pipes, they will be inspected prior to filling or burying, and all equipment and vehicles will be inspected to make sure no federal ESA-listed amphibians are present prior to use each day. To the extent feasible, excavations will not be left open at the end of the day and will be covered after confirming absence of trapped individuals. For any activities requiring an excavation, if excavations are to be left open and unattended for more than 12 hours, they will either be covered, surrounded with exclusion fencing, or an escape ramp will be constructed to the bottom of the pit with less than a 2:1 slope, to provide an escape route to prevent small wildlife species (e.g., amphibian, lizards, rodents) in the area from getting trapped in the excavation. Prior to commencement of work activity each day, staff will check excavations to ensure no animals are trapped. Before backfilling or permanently closing any excavation, it will be checked to ensure no wildlife are present within the excavated area. If wildlife has become trapped, it will be removed prior to closure or backfilling.
MM-BIO-24: Equipment Disinfected For Use In Aquatic Habitats.	Any equipment used in aquatic habitats must be disinfected to prevent the spread of chytrid fungus (*Bd* and *Bsal*) and other pathogens, such as ranaviruses, as well as other aquatic invasive species. Decontamination is also required when equipment and gear are being transferred between different watersheds.
MM-BIO-25: Pesticides Use Near California Red-legged Frog.	When application of pesticides is deemed necessary within 500 feet of aquatic habitat suitable for California red-legged frog, adverse effects to individuals and their habitat will be avoided.
MM-BIO-26: California Red-legged Frog Surveys.	If Project activities are proposed within 300 feet of suitable habitat for the species, a pre-activity/pre-construction survey for California red-legged frog will be conducted. If surveys locate the species or if any new occurrence of California red- legged frog are located where Project activities may affect them, the USFWS must be consulted.
MM-BIO-27: California Red-legged Frog Fencing.	Temporary wildlife exclusion fencing will be installed around the Proposed Project work footprint to prevent the frog from gaining access to the active construction area. Any California red-legged frog found in a work area will be allowed to leave of its own volition, with all work stopped within 50 feet.
MM-BIO-28: Foothill Yellow-legged Frog Surveys.	Surveys for foothill yellow-legged frog at Sherlock Creek will be conducted prior to any construction to reduce mortality of frogs within the Proposed Project boundary.

Mitigation Measure Description	Post License Acceptance
MM-BIO-29: San Joaquin Kit Fox Protection.	Preconstruction surveys will be performed prior to Project-related non-routine ground disturbance in suitable habitat for the species. Impacts to suitable habitat subject to permanent and temporary construction disturbances and other types of ongoing Project- related disturbance activities will be minimized by adhering to the construction and on- going operational requirements as described in Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox (USFWS 2011 or as updated).
MM-BIO-30: Occupied San Joaquin Kit Fox Dens and Suitable Denning Habitat.	Avoidance measures must be implemented at any occupied dens. Any proposed rodenticide use or burrow fumigation in suitable denning habitat will require pre-use surveys, and avoidance must be implemented for any occupied dens. Occupied dens may not be disturbed or destroyed without a USFWS necessary take authorization/permit.
MM-BIO-31: Special-Status Wildlife Species.	If special-status wildlife species are detected, those individuals will be allowed to move from the area of their own volition. If impacts to special-status species cannot be avoided, the agency(ies) with jurisdiction will be consulted and any necessary permits or approvals will be acquired prior to the commencement of construction. Damage or injury to special-status species will be reported immediately to the agency(ies) with jurisdiction. Any siting of a special-status species will be reported immediate to the USFWS and/or CDFW.
MM-BIO-32: Migratory Bird and Raptor Surveys.	If clearing and/or construction activities occur during the migratory bird nesting season (February 1 – August 31), then preconstruction surveys to identify active migratory bird and/or raptor nests will be conducted by a qualified biologist within 7 days prior to construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500 ft buffer, where feasible.
MM-BIO-33: Bat Protections.	If bat exclusion measures are not already in place or bat surveys have not occurred the year of construction, all Proposed Project buildings (including powerhouses, storage buildings, dams, recreation facilities or other structures), will need to be surveyed for bats, roosts and/or signs of roosts/use. If bats are determined to be utilizing a facility, humane exclusion devices will need to be placed during the appropriate time (November 1 – February 28) with construction occurring after confirmation that all bats have been excluded from the facility.

MM-CUL-1: Archaeologically Sensitive Areas – Pre-Construction Measures	**Pre-construction Measure MM-CUL-1A: Intensive Pre-Construction Study.** Merced ID shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by Merced ID prior to soil-disturbing activities occurring on the Project site. The purpose of the site-specific, intensive archaeological resource study is to build upon the data collected during the relicensing studies and confirm the boundaries of previously identified resources vis-à-vis the Proposed Project ground-disturbing activity and to make further assessments, as necessary, regarding the presence of archaeological resources on the Project site. At a minimum, the study shall include: a. Pedestrian survey, site documentation, and subsurface presence/absence studies, where necessary, of the Project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources. b. A summary report disseminating the results of this research. c. Recommendations for any additional measures, including avoidance measures if feasible, that could be necessary to mitigate any adverse impacts to previously recorded and/or inadvertently discovered cultural resources. If the results of the study indicate presence of precontact or historic-period archaeological resources on the Project site, or a resource is discovered, Merced ID shall hire a qualified archaeologist to monitor any ground disturbing activities on the Project site during construction and prepare a worker information sheet pursuant to Measure B below that details what could potentially be found at the Project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the worker training and information sheet, required per Measure C below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction. **Pre-Construction Measure MM-CUL-1B: Implementation of Avoidance Measures During Construction.** Based on the results of the archaeological resources analysis noted above

Mitigation Measure Description	Post License Acceptance
	under **MM-CUL-1A**, any archaeological resource not previously determined ineligible for CRHR and/or NRHP listing and within 50 feet of ground disturbing activity will be protected by site-specific measures. These measures may include re-routing access routes and staging areas, avoiding vegetation removal, installing exclusion or protective fencing, periodic monitoring, and post-construction damage assessments. If, during construction, it is determined that the site cannot be avoided, the resource will be treated as an inadvertent discovery during construction and **MM-CUL-2** will be implemented. **Pre-Construction Measure MM-CUL-1C: Construction Worker Training and Information Resources.** Merced ID shall prepare a construction worker training and information sheet developed by a qualified archaeologist for review and approval prior to soil-disturbing activities occurring on the Project site. The worker training and information sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the Project site. Training by the qualified archaeologist shall be provided to the Project's prime contractor, any Project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil-disturbing activities within the Project site. The training and information sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop within 50 feet of the discovery and Merced ID contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains; clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the worker training and information sheet is circulated to all field personnel, including machine operators, field crew, and supervisory personnel. The worker and information sheet shall also be posted in a visible location at the Project site.

MM-CUL-2: Archaeological Resources and Tribal Cultural Resources – Discovery During Construction	During construction, pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic-era or precontact subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and Merced ID will consult with a qualified archaeologist, as applicable, to assess the significance of the find. Resources inadvertently discovered during construction are defined as either a newly discovered archaeological, built environment, or Tribal resource or as an unidentified or unknown component of a previously recorded archaeological, built environment, or Tribal resource. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by Merced ID must be followed unless avoidance is determined unnecessary or infeasible by Merced ID. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the Project site while measures for the cultural resources are implemented. In the event of data recovery of archaeological resources, Merced ID's consultant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the Proposed Project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. Merced ID shall implement the ARDTP at their expense. Archaeological monitoring and/or data recovery programs required by this measure could suspend Project operations in the vicinity of the discovery for up to 4 weeks. At the direction of Merced ID, the suspension of construction can extend beyond 4 weeks only if such suspension

Mitigation Measure Description	Post License Acceptance
	is the only feasible means to reduce potential effects on a significant archaeological resource, as defined in CEQA Guidelines Section 15064(a) and 15064.5(c) to less than significant with mitigation.
MM-CUL-3: Human Remains - Discovery During Construction	Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the Project site during construction activities, all work shall immediately halt and the Project sponsor shall notify Merced ID and the appropriate County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, Merced ID shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of Merced ID.
MM-GEO-1: Inadvertent Discovery Protocol	If paleontological resources are discovered during earth-moving activities, the construction crew will immediately cease work within a 50-foot radius of the find and notify Merced ID's Project manager. Construction work will be halted until the collection of fossil specimens has been completed. The collection and treatment actions will occur after recovery of specimens and once scientific value can be confirmed and documented. If fossils are found, treatment actions will include sampling for microfossils, conducting paleomagnetic analysis, identifying and preparing fossils, arranging for a repository, and preparing a final report. These actions will comply with guidance from the Society for Vertebrate Paleontology.

Mitigation Measure Description	Post License Acceptance
MM-HYD-1: Construction Stormwater Management and Treatment Plan	As special conditions to site-specific construction plan documentation, Merced ID will prepare and implement, or if a contractor is hired, will require contractor to do so, a project-specific Stormwater Management and Treatment Plan that addresses construction-related activities. The plan will be enforceable as a contract provision, and will include all of the SWPPP and Small MS4 permits. Further, Prior to initiation of ground- disturbing activities within 250 feet of vernal pools or 100 feet of other aquatic resources, construction BMPs will be employed on-site to prevent degradation to on-site and off-site aquatic resources. Methods will include the use of appropriate measures to intercept and capture sediment prior to entering aquatic resources, as well as erosion control measures along the perimeter of all work areas to prevent the displacement of fill material. All BMPs will be in place prior to initiation of any construction activities and will remain until construction activities are completed. All erosion control methods will be maintained until all on-site soils are stabilized.
MM-REC-1: Site Development and Construction Plans	The Site Development and Construction Plan for individual recreation improvement projects would include: o Identifying site-specific erosion and sedimentation control measures that will be used; o Identifying any necessary measures to address traffic circulation and parking issues associated with recreation use during the reconstruction activity; o Reviewing other sensitive resource inventories (cultural, archeological, and biological resources); o Identifying appropriate procedures to avoid impacts to other key resources at the site; and o Identification of any regulatory and permitting requirements needed prior to commencing construction.

1.7 Organization of the Environmental Impact Report

The content and format of this draft PEIR are designed to meet the requirements of CEQA and CEQA Guidelines Sections 15122 through 15132. This draft PEIR is organized into the following chapters.

- **Executive Summary:** Presents an overview and summary of the Proposed Project, including best management practices (BMPs) included in the project, summarizes the potential for impacts and proposed mitigation measures, as needed, and presents any impacts that cannot be mitigated to below significance thresholds, if any.
- **Chapter 1, Introduction:** Defines the purpose of this PEIR, provides the goals and objective of the Proposed Project, generally describes the Merced River and Merced Falls hydropower projects' FERC FEIS Process, and outlines the organization of this PEIR.
- **Chapter 2, Project Description:** Provides information about the location and setting of the Proposed Project and provides a detailed description of the Proposed Project components and means and methods proposed for construction, maintenance, and operation.
- **Chapter 3, Environmental Impact Analysis:** Section 3.1 explains the general approach used in impact analysis and provides the environmental setting, impacts, and mitigation measures for the topics identified for detailed analysis in this PEIR. This section also describes topics not found to have any potential for environmental impacts and did not warrant further analysis in this draft PEIR. Subsequent sections beginning with Section 3.2 (Air Quality) include those environmental resource topics for which a detailed analysis is required. Each section presents information in three parts: environmental setting, method of analysis, and impact analysis. Materials cited in each resource area are listed following that specific section and a full list of references for all resources is also included in Chapter 7.
- **Chapter 4, Other CEQA Considerations:** Evaluates additional topics required to be identified and discussed in a PEIR, including the environmentally superior alternative, any significant irreversible environmental changes, significant and unavoidable impacts, if applicable, growth-inducing impacts, and a summary of cumulative impacts.
- **Chapter 5, Alternatives Assessment:** Provides a summary of Merced ID's alternative's consideration process.
- **Chapter 6, List of Preparers:** Identifies individuals who were involved in preparing this PEIR.
- **Chapter 7, References:** Provides a comprehensive list of all reference materials cited in this PEIR.
- **Appendices:**
    - **Appendix A:** 2024 NOP Scoping Report
    - **Appendix B:** Site-Specific Environmental Evaluation Checklist (EEC)
    - **Appendix C:** 2015 FERC FEIS (Merced River Project) Recreation Plan (also attached to the FEIS and Merced River license application that can be found here: FERC Relicensing - Merced Irrigation District Water & Power)

- **Appendix D:** Air Quality & Greenhouse Gas Emissions Modeling
- **Appendix E:** Biological Resources Materials
  - **Attachment 1:** Aquatic Resources and Vegetation Communities Mapbook
  - **Attachment 2:** Database Queries
  - **Attachment 3:** Sensitive Biological Resources Table
- **Appendix F:** Cultural Resources and Tribal Consultation Technical Memo

CHAPTER 2 PROJECT DESCRIPTION

2.1 Project Location

The Proposed Project is in Merced and Mariposa Counties in the western foothills of the Sierra Nevada in California. Descriptions of the Merced River and Merced Falls project locations follow.

The Proposed Project footprint of disturbance does not include non-recreational land that makes up portions of the FERC Merced River and Merced Falls FERC hydropower projects' areas. Rather, it is limited to those lands and waters that could be impacted temporarily or permanently with implementation of improvements and upgrades proposed at existing recreation facilities. Figure 2-1 shows the FERC boundaries and the Proposed Project's footprint of disturbance that corresponds to the Merced River and Merced Falls projects, which comprises: (1) five recreation areas at the Merced River Project where existing facility upgrades and improvements, new facilities, and future maintenance and operations are proposed, (2) one recreation area at Merced Falls Project where maintenance and operations would continue, and (3) the appropriate buffer areas at the Merced River Project recreation areas where temporary impacts could result from project construction activities. Disturbance footprints for each recreation area are shown in more detail in Section 2.2.

A small portion of the Merced River downstream of the Proposed Project is also included in the Proposed Project footprint to evaluate the potential for temporary effects that could occur during implementation of proposed Merced River Project on-lake construction activities. This segment is not included within FERC Merced River or Merced Falls hydropower projects' boundaries.

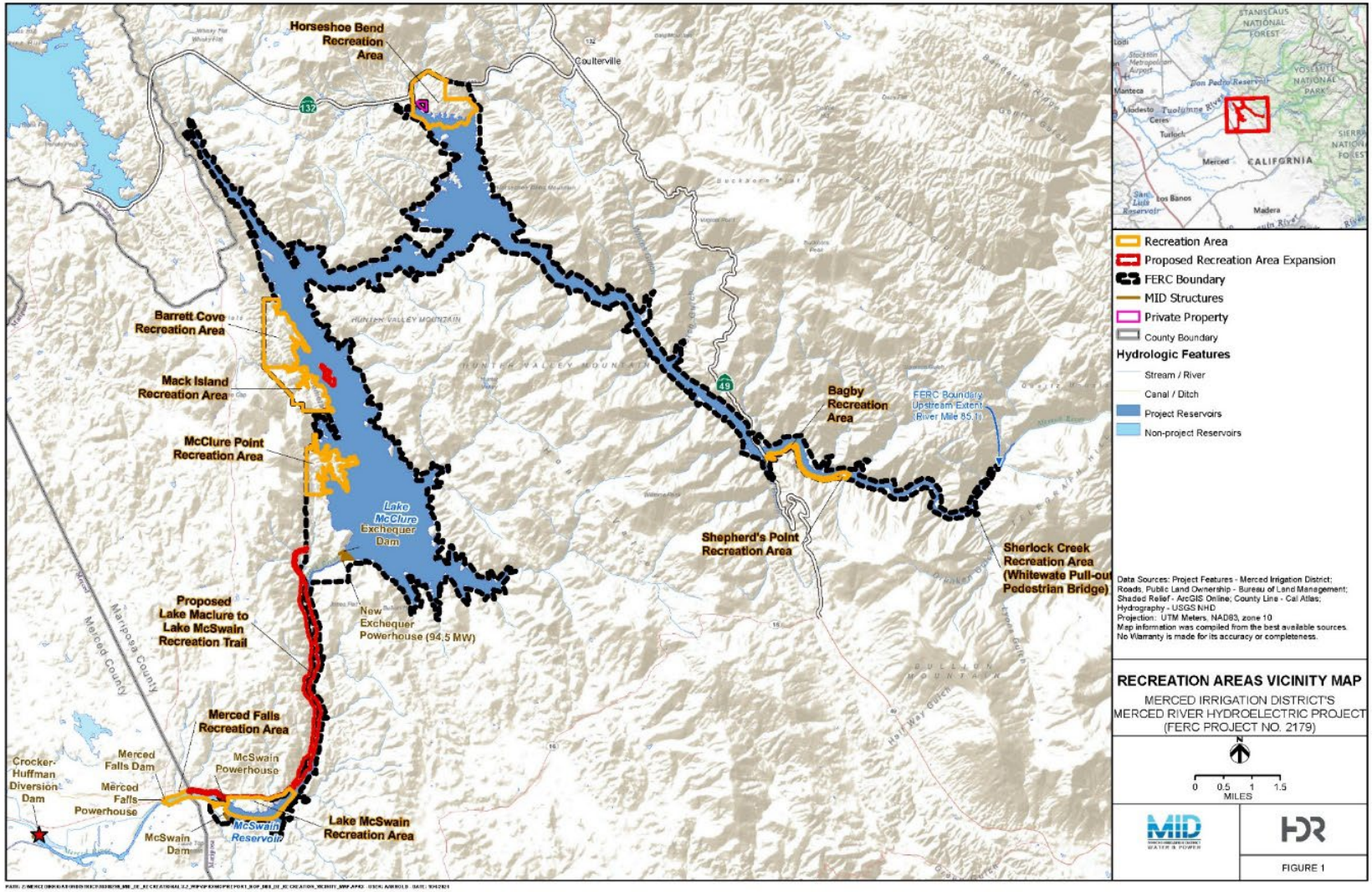
2.1.1 Merced River Project

As described in Chapter 1, a portion of this Project is on federal land managed by BLM. Merced ID owns and operates the Merced River Hydroelectric Project in Mariposa County, California. The Merced River FERC Hydropower project is located about 23 miles northeast of the City of Merced and encompasses 11,143 acres featuring two developments: the New Exchequer development at Lake McClure and the McSwain development at McSwain Reservoir, and their appurtenant facilities and recreation areas. As noted in Chapter 1, recreation facilities are on the main stem of the Merced River at the two Project reservoirs: Lake McClure and Lake McSwain. The Proposed Project, which is limited to the recreation areas, has a footprint that ranges in elevation from approximately 1.3 feet (ft) above mean sea level at the upstream end of Lake McClure to 320 ft at McSwain Powerhouse at McSwain dam.

2.1.2 Merced Falls Project

The Merced Falls Diversion Dam and Powerhouse is on the north bank of the Merced River about six miles east of Snelling, California, at 348 ft. This project includes lands in Mariposa and Merced counties. Merced Falls was a gold rush boomtown that continued to thrive through the mid-1900s because of the Yosemite Lumber Company, the Merced River, and a rail line that serviced the logging industry and took passengers to Yosemite National Park. However, once the lumber mill closed in 1943, and with automobile travel becoming more common and reducing rail travel, the town eventually did not survive (merced-falls-a-ghost-town-with-a-great-story).

Figure 2-1. FERC Merced River Hydropower Project Boundary and Proposed Project Footprint



2.2 Evaluation of Proposed Project Under CEQA: Project vs. Programmatic

This section discusses how activities considered in the Proposed Project are evaluated under CEQA. Those with sufficient detail are considered at the Project level; those that require additional planning before implementation are considered programmatically.

2.2.1 Projects Assessed at a Project Level of Detail

CEQA Guidelines Section 15378 defines a project as "…the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." Accordingly, where projects comprising the Proposed Project have been defined by Merced ID with sufficient detail to analyze physical changes in the environment, they have been assessed in this draft PEIR at a project level. Descriptions of these projects are included in Section 2.3.5 as common projects or in Section 2.3.6 as recreation area-specific projects.

2.2.2 Projects Assessed at a Program Level of Detail

Merced ID is considering other Proposed Project improvements for later implementation that would be better defined as they progress through planning and design. These are addressed in this draft PEIR at a programmatic level. As an example, there is one project that was included in the general assessment in the FERC FEIS but does not have sufficient design or location detail to be fully assessed under CEQA. This project is the addition of a non-motorized whitewater takeout and bridge crossing of the Merced River at Sherlock Creek (Figure 2-1). The project at Sherlock Creek would also require potential access across private lands and project support from BLM.

The Master Utilities Plan is also being assessed here at a programmatic level of review since proposed major upgrades and new infrastructure at recreation areas will require additional planning and design (Section 2.3.7 *Utilities Master Plan Parameters*). Design would need to reach a level where utility infrastructure, along with other proposed projects at a site, such as road improvements, can be coordinated for maximum efficiencies and reduced costs. Also, more generally, site-specific upgrades like those defined in this draft PEIR could be implemented in the future by Merced ID at other recreation areas, where the work and resulting environmental effects would be similar.

2.2.3 Site-Specific Environmental Evaluation Checklist (EEC)

CEQA Guidelines Section 15168(a) states, "A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related…geographically…as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways." As all individual projects comprising the Proposed Project are of a similar nature, can be mitigated by similar measures, are being pursued by the authority of Merced ID, and are located within the geographical confines of Merced ID's Recreation Areas (existing and proposed), future similar projects that require additional planning and design before they can be assessed are also being considered at a programmatic level of review in this PEIR.

Once additional planning and design has occurred for these projects, Merced ID proposes to use a "*Site-specific Project Environmental Evaluation Checklist*" (EEC; Appendix B) to determine whether the potential effects of implementation of that project are sufficiently covered in this draft PEIR or if additional environmental review is required, such as through an Initial Study (IS) or project-level EIR. If determined that no additional CEQA documentation would be required, the checklist findings would dictate what BMPs and/or mitigation would be required to reduce the potential for impacts to a less-than-significant level. Consistent use of the EEC would allow Merced ID to accommodate future changes in recreational priorities and/or take advantage of additional funding opportunities by defining clear parameters in which to record existing environmental resources and conditions, identify any potential for permanent or temporary impacts, and document any subsequent changes in conditions (e.g., assessment of species or habitat presence/absence).

- If Merced ID finds that, pursuant to CEQA Guidelines Section 15162, no subsequent environmental documentation would be required, Merced ID could approve the activity as being within the scope of the project covered by this draft PEIR, and no new environmental documentation would be required. Whether a later activity would be covered by this draft PEIR is a factual question that Merced ID, as the lead agency, would determine based on substantial evidence in the record. Factors that Merced ID may consider in making that determination include, but are not limited to, consistency of the later activity with the type of allowable land use, geographic area analyzed for environmental impacts, and covered infrastructure, as described in this draft PEIR. As applicable, Merced ID would also incorporate mitigation measure commitments presented in this draft PEIR into later activities.
- Similarly, where future proposed activities could involve site-specific changes to operations, Merced ID would use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the change in operation are also covered by this draft PEIR.

During the planning and design phase for facility improvements that are currently more conceptual in nature, Merced ID would use the EEC to evaluate potential environmental impacts of implementing a specific activity. The EEC in Appendix B includes a checklist of environmental resources to evaluate for impacts from the proposed activity, including visual resources, agricultural resources and land use, air quality and greenhouse gas, biological resources, cultural resources, geology and soils, water resources, noise, public services and utilities, and traffic. The EEC would also evaluate whether the proposed activity (1) has a new or larger footprint, (2) would have additional permitting requirements, and/or (3) has the potential for substantially increased or new sources of significant environmental impacts that would require mitigation beyond what is included in the PEIR Mitigation Monitoring and Reporting Program (MMRP). Factors that would also be considered include changes in construction methods, new sensitive receptors, or presence of newly identified or revised existing critical habitat boundaries.

Besides determining if additional environmental documentation is required beyond this PEIR, the EEC would be used to screen out potential project locations (as feasible) that could result in additional or new adverse effects. A standardized approach would be followed using the EEC (Appendix B) to guide site-specific resource evaluations for new proposed projects. This practice would facilitate consistent identification of impacts and implementation of BMPs, and mitigation measures as identified in this draft PEIR.

2.3 Proposed Project

Collectively, the individual projects presented in this section comprise the Proposed Project. Individual projects at the Merced River Project are identified in the 2015 Merced ID Revised Merced River Recreation Facilities Plan (Appendix C), which was prepared in accordance with BLM Final 4(e) Condition No. 19 and is attached to those conditions. The Merced River Recreation Facilities Plan was also attached to the 2015 FERC FEIS (FERC 2015 Merced ID FEIS) as an appendix.

Also, in March 2022, Merced ID filed six updated management plans with FERC: Foothill Yellow-legged Frog Monitoring (BLM Condition No. 11), Limestone Salamander Sensitive Areas (BLM Condition No. 12, Merced ID Proposed Measure TR6), Riparian Vegetation Monitoring (BLM Condition No. 14), Transportation (BLM Condition No. 22, Merced ID Proposed Measure LU1), Hazardous Materials (BLM Condition No. 49), and Bald Eagle (BLM Condition No. 8, Merced ID Proposal Measure TR4).

Construction and alterations at all existing and new public general use facilities (e.g., bathrooms, concession areas, marinas, day use areas) would include upgrades to meet Americans with Disabilities Act (ADA) requirements in accordance with the ADA Accessibility Guidelines (ADAAG). Further, where feasible, environmentally sustainable means, methods, and materials would be used in implementation of the Proposed Project.

2.3.1 Merced River Project Recreation Areas

Merced ID proposes to rehabilitate, upgrade, and expand existing recreation facilities and utilities at five existing Merced River Project recreation areas (Bagby, Barrett Cove, Horseshoe Bend, McClure Point, and McSwain) and develop one new recreation area (Mack Island) that would incorporate the recently implemented Phase 1 of the Exchequer Mountain Bike Park (https://www.lakemcclure.com/biking-and-hiking/)[2] to comprise the Mack Island Recreation Area. Note that Shepherd's Point and Sherlock Creek proposed activities are included as part of Bagby Recreation Area.

The types of projects proposed for each of the Merced River Project recreation areas are summarized in Table 2-1.

Table 2-1. Proposed Types of Projects by Recreation Area

	Bagby, Shepherd's Point and Sherlock Creek (new)	Barrett Cove	Horseshoe Bend	McClure Point	McSwain	Mack (new)
New or Upgraded Signage	X	X	X	X	X	X
New or Expanded Campgrounds	X	X	X	X	X	X
New Campfire Center and/or Meeting Area	X	X	X	X	X	X

[2] The Exchequer Mountain Bike Park Project proponents completed a separate CEQA regulatory process prior to construction of Phase 1 of those facilities; this Proposed Project does not include an assessment of future improvements or operations at the Exchequer Mountain Bike Park.

New Park Model Cabins	X	X	X	X	X	
New or Upgraded Restroom Facilities	X	X	X	X	X	X
New or Upgraded Host and Staff Sites/Storage Sheds	X	X	X	X	X	X
Improvements to Storm Drainage	X	X	X	X	X	
New or Upgraded Hiking, Biking, and Equestrian Trails	X	X	X	X	X	X
Improvements to Day Use and Picnic Area	X	X	X	X	X	X
New or Upgraded Off-lake Water Play, Swim and/or Fishing Area	X	X	X	X	X	
New or Upgraded On-lake Swim Area		X	X	X	X	X
New or Upgraded Motorized Boat Ramp and/or Docks	X	X	X	X	X	X
New or Upgraded Non-motorized Boat Takeout	X				X	
New or Upgraded Marina Facilities		X	X		X	
New Houseboat Mooring Buoys*		X	X	X		
New Concession Facilities	X	X	X	X	X	X
New or Upgraded Roads and Parking Lots	X	X	X	X	X	X
New Electric Vehicle Charging Stations	X	X	X	X	X	
New or Upgraded Wastewater Treatment Facilities	X	X	X	X	X	X

* During low water years, Merced ID relocates mooring buoys to accessible boating areas.

As proposed in the 2015 MID Revised Merced River Recreation Facilities Plan (Appendix C), at each Merced River Project campground and picnic area on Merced ID land, Merced ID would retrofit at least 5 percent of all current individual campsites and picnic sites, as site terrain/conditions allow, to meet ADAAG requirements at the time the campsites/picnic sites and restrooms are replaced. These improvements are in addition to the ADAAG compliance improvements proposed at public general use facilities. At each retrofitted campsite, Merced ID would remove existing barriers and campsite components and install the following accessible components: picnic table, pedestal grill, site marker, tent pad, shelter (unless natural terrain/vegetation provides adequate shading) and paved (asphalt) parking spur with barriers. All parking spurs would be at least 16 ft wide unless a departure from this standard is applicable. At each retrofitted picnic site, Merced ID shall remove

existing barriers and picnic site components, and install the following accessible components: picnic table, pedestal grill, and shelter unless natural terrain/vegetation provides adequate shading.

At each restroom facility at a campground, picnic area, or other facility on Merced ID land, Merced ID would provide an accessible path to the restroom facility from the adjacent facility/site element (road, parking area, campsite, or picnic area), and one accessible water spigot/hydrant. Each restroom facility shall include the same general current footprint and number of toilets, sinks, and stalls, unless Merced ID determines that the location and layout of the restroom facility should be modified.

2.3.2 Merced Falls Project

No new construction or upgrades are proposed at the Merced Falls Day Use Recreation Area. Merced ID will continue to operate and maintain the existing recreation facilities, including the River's Edge Fishing Access area, the Merced Falls Fishing Access area, restroom, informal Angler Trail along northern shoreline, the two informal parking areas on either side of Hornitos Road County Bridge, and the car-top boat launch at Merced Falls Fishing Access area. Directional and safety signage would be posted at the informal canoe portage trail at the south end of Merced Falls Dam.

2.3.3 Recreation Area Updates Since 2015

Since 2015 the MID Revised Merced River Recreation Facilities Plan (Appendix C) was made public, most upgrades undertaken within the Proposed project footprint were due to public safety concerns and were typically carried out during regular maintenance activities. Capital upgrades have also been necessitated by regulatory requirements, such as those for improvements at water treatment systems, and to prevent catastrophic failure and closure of existing recreation facilities. A few capital projects, like installation of new Park cabins and the campsite electrical upgrades at Horseshoe Recreation Area and McSwain Recreation Area, were exceptions driven by park visitor demand and the potential for revenue generation to offset recreation area costs. Also, in coordination with the resource agencies, Merced ID constructed a parking area and installed a non-motorized boat launch at the existing gravel-surfaced parking area along Merced Falls Road near Crocker-Huffman diversion dam. This was a mandatory improvement included in the FERC FEIS for relicensing and was driven by project proponents.

2.3.4 Types of Construction Activities

To complete upgrades and improvements at recreation facilities, the Proposed Project would involve the following types of activities. Examples of the equipment that could be used for these activities are also included, although methods used for construction at an individual project site at a recreation area would depend on existing conditions, funding, and proposed use at that site. General activities in support of most projects include:

- Site Clearing – Removing existing structures, facilities, vegetation, including shrubs, trees, and roots, as well as all logs, stumps, brush, and debris. Land-clearing equipment could include excavators, bulldozers, tractors, stump grinders, backhoes, and mulchers.
- Grading – Following site clearing, altering areas by a depth of up to 10 ft would be necessary to level and contour ground areas to improve existing roads, install new parking areas, improve stormwater drainage and align with proposed land use; this would be accomplished through excavation and/or fill of soils, aggregate and gravel. Examples of grading and

earthmoving equipment include excavators, skid steers, bulldozers, tractors, compactors, scrapers, backhoes, and dump trucks.

- Landscaping – Depending on planned use, most construction sites would be returned to previous or better conditions, unless permanent clearing is required. Implementing plant management plans would ensure appropriate conditions for intended land use and minimize future maintenance needs. Examples of landscaping equipment include chainsaws, mowers, backhoes, spreaders and sprayers, rototillers, and a variety of hand tools, such as shovels and pruners.
- Open Trenching – Trenches would need to be dug and restored to previous or better conditions to install or rehabilitate utility lines, including water and sewer, wastewater treatment plants, and electric vehicle charging stations. Examples of trenching equipment include small to midsize trenchers, excavators, backhoes, and dump trucks.
- Concrete Work – Concrete would be used to install, replace, repair, and update facilities including, but not limited to, restrooms, parking lots, barbeque pit areas, cabins, meeting areas, marina facilities, concession areas, host sites, wastewater treatment plants, Park Model cabins, playground equipment, and splashpads (i.e., outdoor play area with sprinklers, fountains, nozzles, and other devices that spray water but maintain little or no standing water) at off-lake recreation areas. In most cases, concrete slabs would be constructed as foundations for proposed facilities, and/or anchors or footings for small structures to provide stability. Examples of equipment include concrete trucks, mixers, compactors, screed machines, power hammers and drills, and concrete vibrators, pumps, crushers, and tanks.
- Paving – Developing new and rehabilitating or expanding some existing roads and parking lots could require asphalt and related materials. This could also include minor chip sealing and/or fog coating of those elements. Examples of equipment include asphalt pavers, compaction rollers, dump trucks, and other equipment used for general grading.
- Installing Small Structures – Improving campgrounds, trails, trailheads, and other facilities could include installing informational and educational signage, trailhead markers and maps, and resting benches. Further, new or replacement picnic tables, fire rings, barbeque pits, pedestal barbeque grills, trash receptacles, water faucets, weather protection facilities (for example, pagodas), and staff/host storage sheds could be added at campgrounds, meeting areas, and host sites. For off-lake fishing areas, installing aerators, benches, and weather protection facilities could occur. Types and numbers of structures would depend on the type and extent of recreation area, with less installations planned at more remote and primitive locations. Simple fencing for protection of resources could also be installed.
- In-Lake Work – In-lake work would be limited to the minimal footprint necessary to implement the project, would comply with federal and state permitting requirements, and would not result in a net loss of waters or wetlands. Appropriate protections would be included in the project to reduce the potential for effects on aquatic species and ecosystems (Section 3.3 Biological Resources). Examples of equipment for in-lake or lakeside work include augers, backhoe, joist or crane, dump trucks, graders, and concrete equipment. In-lake work would be required for the following types of projects:
    - Expanding and rehabilitating boat ramps,
    - Adding sand to expand existing beach areas,

- Expanding numbers of mooring buoys for houseboats,
- Installing swim platforms at in-lake swim areas,
- Adding swim floats or buoys to protect in-lake swim areas,
- Installing additional floating comfort stations,
- Installing floating bridges along trails or for new Mack Island access,
- Installing proposed on-lake or lakeside concession facilities,
- Replacing or adding new water intakes for off-lake structures and facilities, and
- Rehabilitating existing marinas.

- Increasing existing disturbed footprint – Implementing some of the individual projects at the recreation areas would require clearing new areas adjacent to but outside of the existing disturbed footprint. These projects could include expanding beaches and boat ramps, installing new trails, installing new or expanding existing parking lots, installing new wastewater treatment plants, expanding or adding new campsites or restrooms to existing campgrounds, clearing areas for proposed concessions, installing new Park Model cabins, and developing the new Mack Island Recreation Area.

2.3.5 Common Projects

The timing and phasing for implementation of individual projects that comprise the Proposed Project and are covered under this draft PEIR are dependent on several factors, such as size of proposed facilities and existing conditions at site, funding availability, year-to-year repair and rehabilitation priorities, sufficiency of existing project-specific environmental review, and securing agreements with cooperating partners or potential concessionaires. Those projects that would be consistent as to how they are constructed (referred to in this draft PEIR as a *common project*) could be executed individually at a single site or at multiple recreation areas concurrently, such as painting buildings and installing consistent signage across recreation areas.

As such, for most common projects, it is anticipated that the number of days and maximum construction staff required to implement a common project at any individual recreation area would generally be the same; estimates for construction period and maximum workers are presented in Table 2-2. These common projects and other individualized projects are discussed by recreation area in Section 2.3.6, and where projects may not stay within the parameters outlined in Table 2-2, additional information is provided there.

Staging and laydown areas for a common project would occur only in previously disturbed open areas at a recreation location. There would be no tree removal or habitat disturbance resulting from temporary staging or laydown for projects.

Consistent with current operations, it is assumed that future operations and maintenance at all recreation facilities, including new facilities that would be constructed as part of the Proposed Project, would be performed by Merced ID, its hired contractors, or contracted concessionaires; this is discussed further in Section 2.3.7 *Operations and Maintenance*. Table 2-2 provides a summary of common projects that Merced ID is proposing to be implemented at multiple recreation areas. Estimated construction periods in days, maximum numbers of construction workers at each project location, types of activities (listed in Section 2.3.4) that would be anticipated to occur, and typical

materials that would be anticipated to be used with each common project category are presented in this table. Table 2-2 also states whether the project category has the potential to impact previously undisturbed habitat.

Table 2-2. Construction Days and Workers, Types of Projects, and Typical Materials for Common Projects

Project Type	Days to Construct	Maximum Number of Workers	Types of Activities	Typical Materials [a]	New Ground Disturbance?
Install or upgrade directional and educational signage	1-3	2	Site clearing; landscaping; concrete work; install small structures	Prefabricated plastic or wooden signs/ materials; concrete for footing	No
Minor upgrades to campground with no effects on undisturbed ground [b]	2-5	4	Site clearing; grading; landscaping	Plastic or wood building materials and paints/ solvents; site amenities; prefabricated structures; vault toilets; mulch, rocks, and/or other aggregate materials	No
Upgrades or expansions at campground that may affect undisturbed ground [c]	10-20	4-6	Site clearing; grading; tree removal; landscaping	Plastic or wood building materials and paints/ solvents; site amenities; prefabricated structures; water pipeline materials; mulch, rocks, and/or other aggregate materials; concrete for foundations; electrical materials	Yes
Install new Park Model cabins [d]	10-20	4-6	Site clearing; grading; landscaping; open trenching	Plastic or wood building materials and paints/ solvents; site amenities; prefabricated structures; wastewater and water pipeline materials; mulch, rocks, and/or other aggregate materials; concrete for foundations; electrical materials	Yes
Install or upgrade small vault restroom facilities (max 6 vault toilets)	5-10	2-4	Site clearing; grading; tree removal; landscaping	Plastic or wood building materials and paints/ solvents; vault toilets	Yes
Install or upgrade restroom facilities (max 12 flush toilets and 2 showers) [e]	20-30	4-6	Site clearing; grading; tree removal; landscaping; open trenching	Plastic or wood building materials and paints/ solvents; prefabricated showers; vault or flush toilets; wastewater and water pipeline materials; rocks and/or other aggregate materials; concrete for foundations; electrical materials	Yes
Upgrade day use and picnic areas	5-10	2-4	Site clearing; grading; minor tree removal; landscaping	Plastic or wood building materials and paints/ solvents; site amenities; prefabricated structures;	Yes

Project Type	Days to Construct	Maximum Number of Workers	Types of Activities	Typical Materials [a]	New Ground Disturbance?
				mulch, rocks, and/or other aggregate materials	
Install or upgrade off-lake swim or fishing area [f]	5-10	4-6	Site clearing; grading; tree removal; paving; landscaping	Plastic or wood building materials and paints/ solvents; site amenities; prefabricated structures; rocks and/or other aggregate materials for fishing area; concrete for swimming pools and adjacent area	Yes
Install or upgrade on-lake swim area [g]	3-5	2-4	Grading; concrete work; in-lake work	Mostly plastic or wood swim platforms; swim floats or buoys to stop boat access; concrete for anchors	No
Upgrade or expand boat ramps and takeouts [h]	10-15	2-4	Grading; tree removal; in-lake work; landscaping; concrete work	Plastic or wood building materials and paints/ solvents; rocks and aggregate materials; concrete for anchors	No
Rehabilitate marina facilities and boat docks [i]	20-30	4-6	Grading; landscaping; tree removal; open trenching; concrete work; paving; in-lake work;	Plastic or wood building materials and paints/ solvents; prefabricated structures; rocks and aggregate materials; concrete and paving materials	No
Add new houseboat mooring buoys at existing locations	2-5	2-4	Concrete work; in-lake work;	Mooring buoys; concrete for anchors	No
Other in-lake projects [j]	10-30	4-6	Site clearing; grading; landscaping; tree removal; open trenching; paving; concrete work; in-lake work	Plastic or wood building materials and paints/ solvents; prefabricated structures; mulch, sand, rocks, and/or other aggregate materials; concrete and paving materials; vault or flush toilets; wastewater and water pipeline materials; electrical materials	Yes
Add, rehabilitate, and/or expand parking lots and roads [k]	10-30	4-6	Site clearing; grading; landscaping; tree removal; open trenching; paving	Rocks and/or other aggregate materials; paving materials;	Yes
Install or upgrade hiking, biking, and/or equestrian trails [l]	10-20	4-6	Site clearing; grading; landscaping; tree removal.	Prefabricated plastic or wooden signs/ materials; mulch, rocks, and/or other aggregate materials; concrete for signage footings	Yes
Install or rehabilitate existing sewer	15-30	4-6	Site clearing; grading; landscaping;	Plastic or wood building materials and paints/ solvents; pre-packaged (off	Yes

Project Type	Days to Construct	Maximum Number of Workers	Types of Activities	Typical Materials [a]	New Ground Disturbance?
systems with wastewater treatment plant			tree removal; open trenching; concrete work; paving	the shelf) wastewater treatment plant kit; mulch, sand, rocks, and/or other aggregate materials; concrete and paving materials; wastewater pipeline materials; electrical materials.	
Install water tank	15-20	4-6	Site clearing; grading; landscaping; tree removal; open trenching; concrete work; paving	Plastic or wood building materials and paints/ solvents; pre-packaged (off the shelf) water tank kit; mulch, sand, rocks, and/or other aggregate materials; concrete materials for foundation; water pipeline materials.	Yes

[a] Site amenities include, but are not limited to: barbeque and picnic equipment, benches, signage. Prefabricated structures include, but not limited to: playground equipment, weather protection facilities (e.g., pagodas and gazebos), storage sheds, floating comfort station facilities, floating bridge materials. These installations could require concrete slabs or footings, signage, mulch, and rock and other aggregate materials.

[b] May include, but not limited to: painting, rehabilitating existing buildings and recreational features (e.g., replacing playground equipment); replacing or adding campground/host site amenities, such as barbeques, shelters at existing group areas, and fish cleaning stations; converting existing pit toilets to vault toilets; and other minor site upgrades.

[c] May include, but not limited to: installing new campfire centers/meeting areas; adding new or upgraded staff and host sites/storage sheds or weather protection facilities (e.g., pagodas); adding new campsites; improving storm drainage; and installing foundations and utility connections for new concessions.

[d] May include, but not limited to: installing new underground utilities, including water and sewer pipelines; laying foundation slabs for cabins (cement work); and installing cabin area site amenities, such as playgrounds, picnic and barbeque areas, and host/staff facilities and storage sheds.

[e] May include, but not limited to: larger expansions of existing restrooms or adding new restroom facilities; changing existing vault toilets to sewer-plumbed flush toilets and adding pipeline conveyance to site wastewater treatment facility.

[f] May include, but not limited to: adding weather protection facilities (e.g., pagodas or gazebos); improving storm drainage; adding concrete slabs for splashpads; adding or replacing site amenities, such as barbeques, picnic tables, and trash receptacles; for off-lake fishing sites, may include installing fish cleaning stations and in-water aerators, and stocking fish for recreational fishing.

[g] May include, but not limited to: Installing swim platforms; adding swim floats or buoys to protect public at swim areas in lake.

[h] Would include replacement of existing ramp with similar or longer new boat ramp; may need to establish new anchor sites/footprint but would remain within currently disturbed area.

[i] May include, but not limited to: expanding existing marina facilities into adjacent disturbed areas; rehabilitating existing facilities; replacing appliances and other site amenities; expanding and rehabilitating or replacing existing boat docks; upgrading electrical system; replacing restroom facilities and existing water and sewer pipelines; adding concession sites with access to utilities and concrete slab.

[j] Other in-lake projects may include, but not limited to: adding sand to create or expand existing beach areas; installing additional floating comfort stations; installing floating bridges along creek-crossing trails and for new Mack Island access; adding new on-lake or lakeside concession facilities.

[k] May include, but not limited to: rehabilitating or extending roads; adding, expanding and/or rehabilitating existing parking lots, including installing electric vehicle chargers, vault toilets, directional signage, and simple fencing.

[l] May include: creation of new trails along roads or in disturbed or undisturbed areas; rehabilitating and expanding existing trails; installing directional and educational signage; adding new or expanding trailhead parking area; installing minor bridges to cross creeks or streams, if necessary, with no in-water effects; and adding benches and/or vault toilets at trailheads or at intervals along longer pedestrian trails.

2.3.6 Merced River Projects Specific to Individual Recreation Areas

This section provides a summary of existing conditions and describes individual projects that comprise the Proposed Project at each Merced River Project recreation area. Figure 2-1 in Section 2.1 provides a regional map that presents all Merced River and Merced Falls recreation areas, along with the projects' FERC boundaries. Maps representing each recreation area are included in each section; these depict both existing and proposed project features in the same map, or where multiple improvements are proposed, may be split into two maps. Among the proposed projects on each recreation area map are site-specific and common projects (Section 2.3.5 Common Projects). Where a project is larger in footprint, has been significantly refined for a specific recreation area, or was not included as a common project in Section 2.3.5, construction details are provided in the accompanying text.

Descriptions of existing conditions for each of the recreation areas includes a table with a tally of current facilities, as well as Merced ID's qualitative condition rating (fair, fair-good, good) as included in the 2015 Recreation Plan and as updated in 2024.

2.3.6.1 Bagby Recreation Area

Bagby Recreation Area consists of approximately 51 acres and follows the south shoreline along the eastern finger of Lake McClure that connects to the upstream reach of the Merced River. All the recreation facilities at Bagby Recreation Area are located on Merced ID land. The recreation area is located entirely within the FERC Project Boundary on Merced ID-owned land. Primary access to the recreation area is by State Route (SR) 49 north of Bear Valley (Figure 2-2). Bagby Recreation Area is comprised of a parking area with boat ramp and amenities near SR 49, and two campgrounds, Bagby and Shepherd's Point. None of the existing campground facilities are accessible or ADAAG-compliant.

Bagby Recreation Area Existing Conditions

Figure 2-2 through Figure 2-5 present the existing and proposed recreation area facilities for Bagby Recreation Area, including the Shepherd's Point and Sherlock Creek areas. Primary circulation highways and roads used for recreation access that would also be used for construction and maintenance access to the area, are shown in Figure 2-1. Table 2-3 provides a summary of existing recreation facilities and other site elements at Bagby Recreation Area.

Table 2-3. Bagby Recreation Area Existing Facilities

Facility	Campsites	Picnic Sites	Restrooms	Parking Spaces	Boat Ramp	FEIS Condition (2015)	Current Condition (2024)
Bagby Campground	20 Std; 10 RV	0	1 Flush; shower	22 [a]	1	Fair-to-good	Fair-to-Poor
Shepherd's Point Primitive	15 Std	0	1 Pit	0	1 [b]	Fair	Poor
Boat Ramp	0	0	1 Flush	31	1 [c]	Good	Poor

[a] Informal overflow parking along the shoulder of the campground circulation road.
[b] Informal whitewater boat takeout/launch area without parking, restrooms, or formal road to launch area
[c] Main boat ramp is concrete; also, is an informal low water boat ramp (asphalt and gravel) that extends approximately 400 ft adjacent to the main ramp.

BAGBY CAMPGROUND

The campground consists of 30 total campsites, which includes 20 standard campsites and 10 recreational vehicle (RV) campsites. Each campsite consists of a table, pedestal grill and vehicle spur. Each of the 10 RV campsites has a hookup (water) and a shelter over the table. The flush restroom building consists of two stalls (male and female), each with a toilet, sink, shower, and trash receptacle. In addition, overflow parking (22 single spaces), water faucets, and trash receptacles are dispersed throughout the campground.

BOAT RAMP

The boat ramp facilities consist of a boat ramp, flush restroom, fish cleaning station and parking area. The primary boat ramp is a two-lane concrete ramp (350 ft) and a floating courtesy dock. The boat ramp has a functional water surface elevation (WSE) range from 840 ft down to 786 ft. In addition, an informal low water boat ramp (asphalt and gravel) extends approximately 400 ft from midway down the main boat ramp. The paved (asphalt) parking area has 31 spaces, which includes 10 single spaces (vehicle or trailer only) and 21 double spaces (vehicle and trailer). A fish-cleaning station is adjacent to the restroom.

OLD RAILROAD GRADE TRAIL

On the opposite (north) side of the Lake McClure shoreline, an informal trail (Old Railroad Grade Trail) starts up just to the east of Flyaway Gulch Creek and follows the shoreline moving east by Shepherd's Point Primitive Area on the opposite shore and then beyond the easternmost end of Lake McClure. This trail was created by the public and is not a formal trail maintained by Merced ID.

Figure 2-2. Bagby Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries (1 of 4)

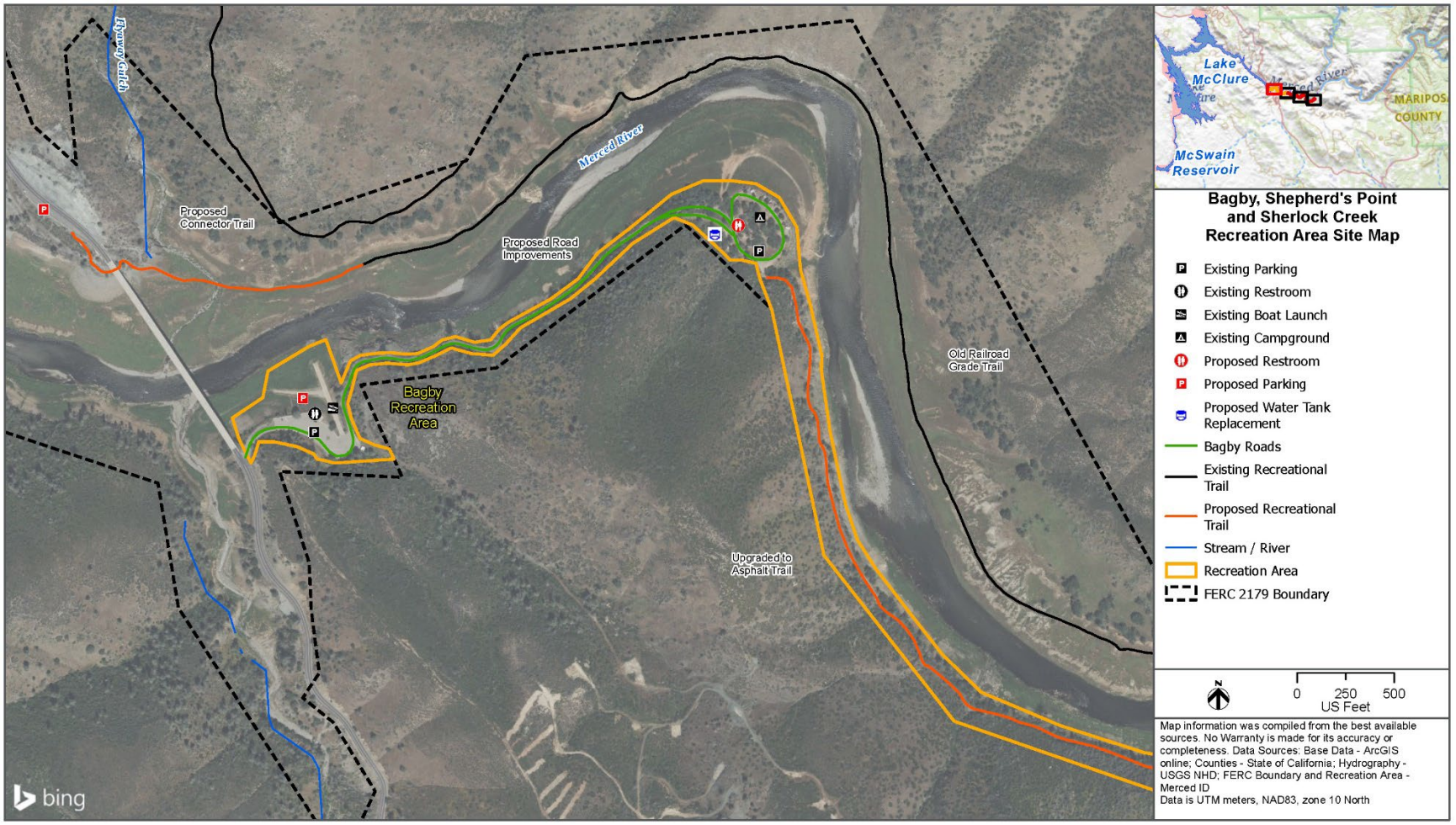


Figure 2-3. Bagby Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries (2 of 4)

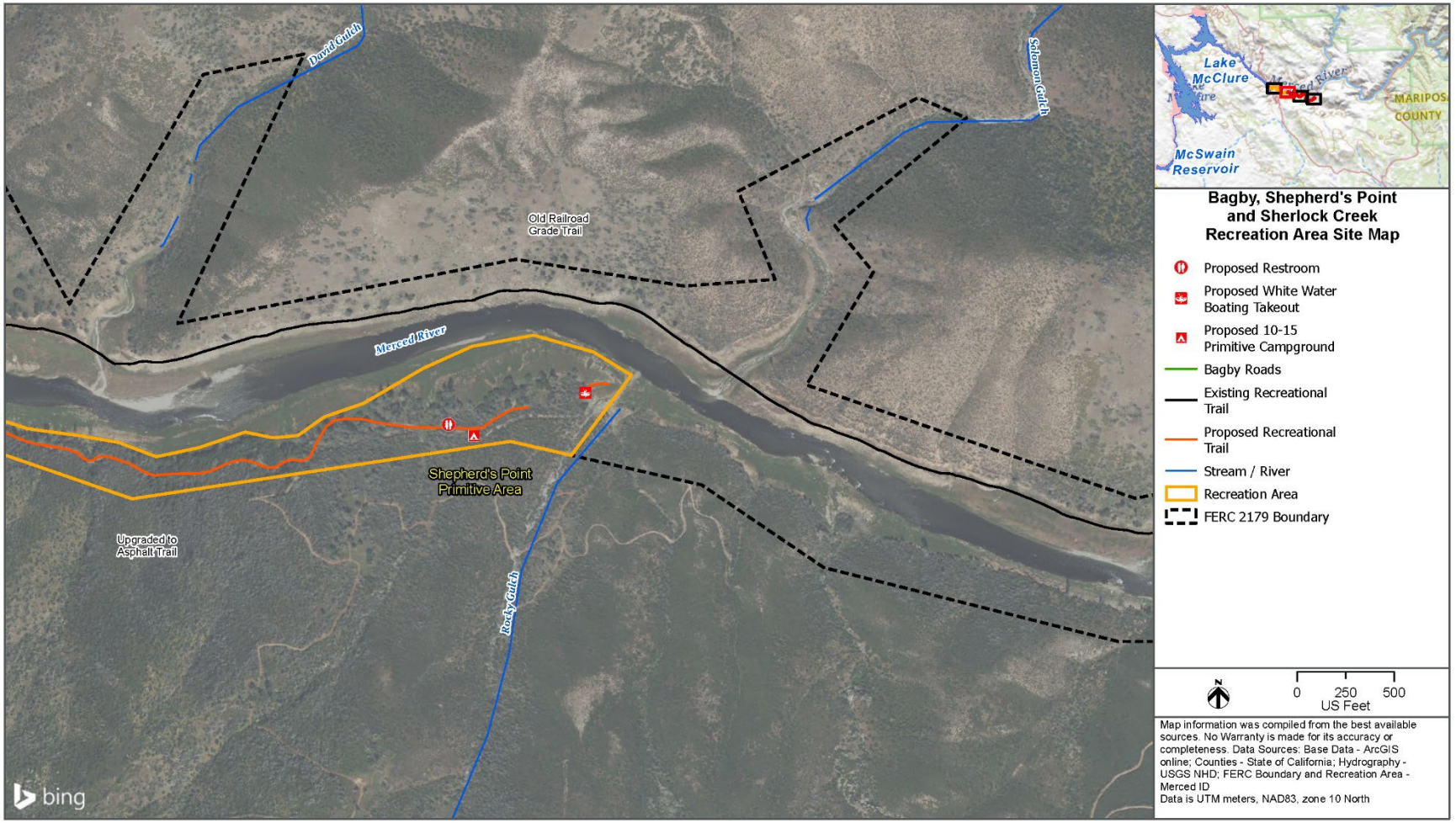


Figure 2-4. Bagby Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries (3 of 4)

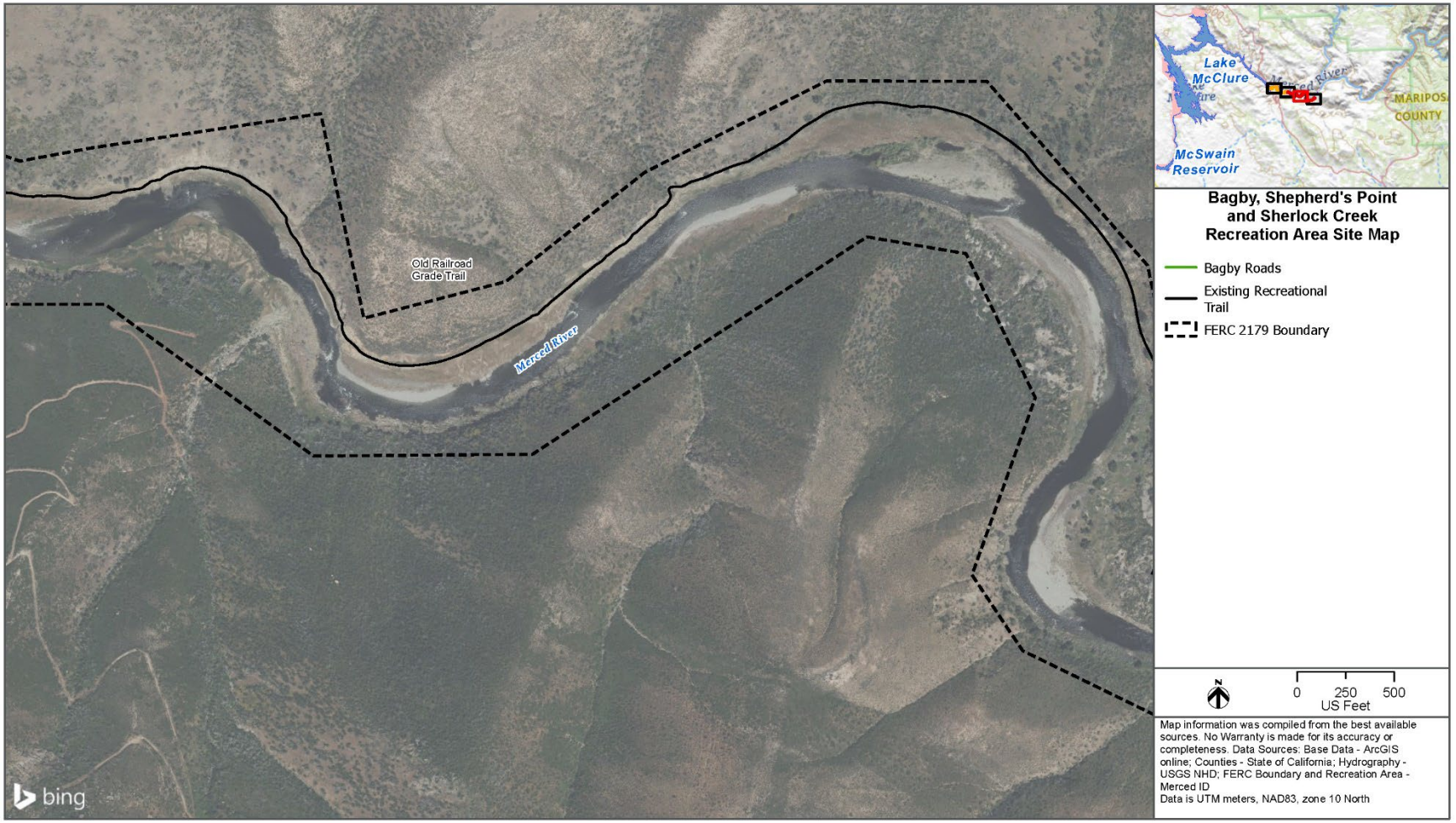
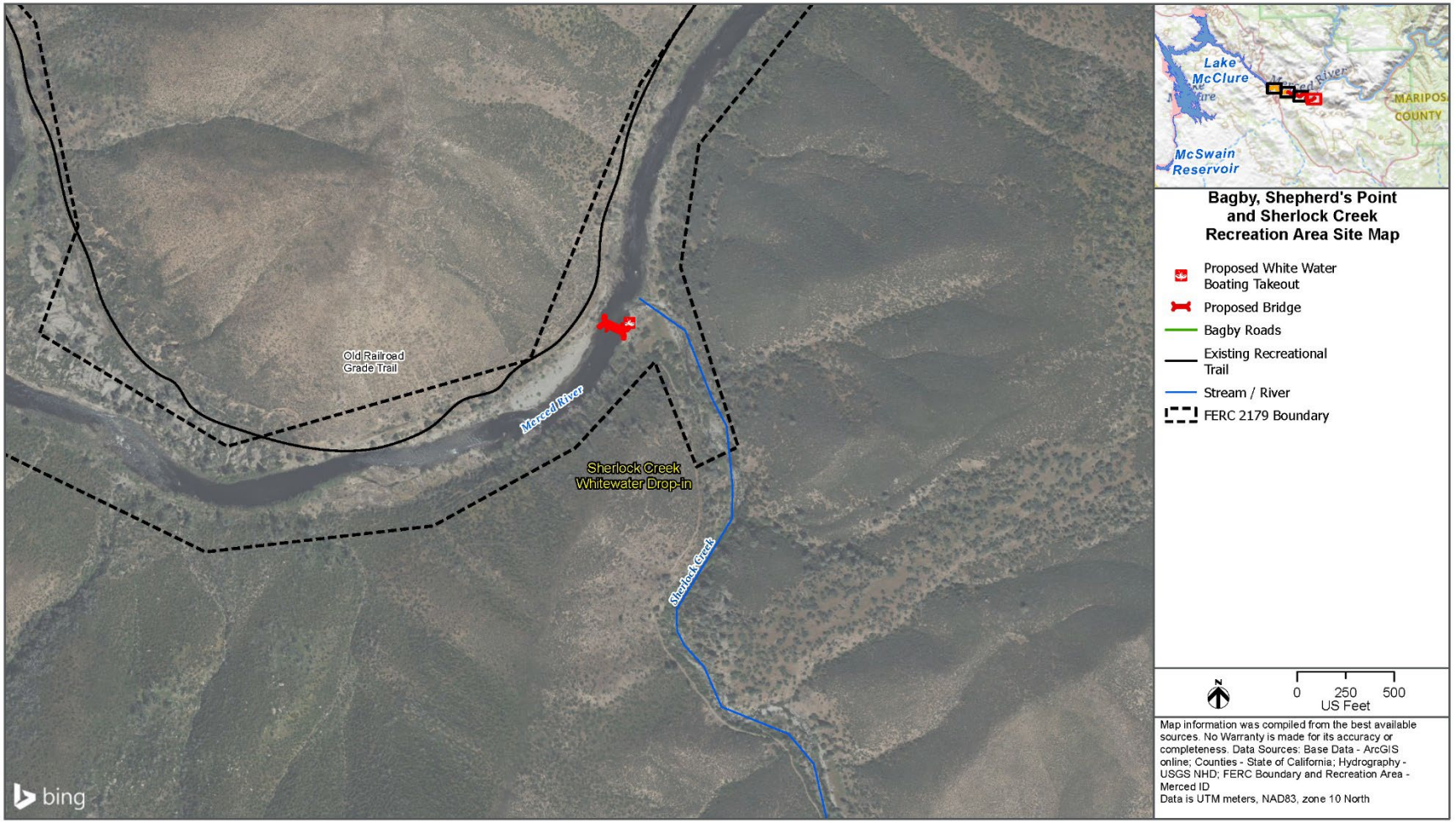


Figure 2-5. Bagby Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries (4 of 4)



SHEPHERD'S POINT PRIMITIVE AREA

The primitive campground consists of 15 standard campsites and one pit toilet building. Each campsite consists of a table, pedestal grill, and informal vehicle spur (dirt/gravel). The restroom building has two stalls each with a pit toilet. The facility does not have water. An informal whitewater boat takeout has been created by the public with access via a primitive road that follows the shoreline from Bagby Campground.

SHERLOCK CREEK (PROGRAMMATIC)

There are no existing Merced ID facilities at Sherlock Creek. The Old Railroad Grade Trail that begins near Flyaway Gulch Creek, as discussed previously, follows the north side of the river through this point and continues to a portion of the Merced River that is designated as a Wild and Scenic River.

Bagby Recreation Area Proposed Projects

Common project types consistent across recreation areas (Section 2.3.5) that are proposed at the Bagby Campground area are shown on Figure 2-2 through Figure 2-5 and include:

- Install directional and educational signage
- Minor upgrades to campground with no effects on undisturbed ground (Bagby)
- Upgrades or expansions at campground that may affect undisturbed ground (Bagby, Shepherd's Point, and Sherlock Creek).
- Update and expand parking lots and roads, including adding electrical vehicle (EV) car charging stations at the Bagby parking lot only
- Rehabilitate and lengthen primary boat ramp and whitewater boat takeout.
- Install and upgrade restroom facilities.
- Install/replace water tank.
- Upgrade existing well.
- Add concrete slab area with water/wastewater/electricity access for potential concessionaire

Proposed projects that are specific to the Bagby Recreation Area are listed below. Some of the projects included are from the 2015 Recreation Plan developed for the FERC Merced River Project NLA, while others have been added. Where necessary, additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- Developing a trailhead at SR 49 (north of Lake McClure/ Merced River crossing) with parking lot, vault restroom, signage, and a pedestrian connector trail that would run from parking area to existing Old Railroad Grade Trail (Figure 2-2) and include a bridge above the high-water level over Flyaway Gulch Creek with no in-stream work. (10-20 days; 4-6 workers; activities may include: site clearing, grading, tree removal, landscaping, concrete work, install small structures)

- Installing EV charging stations at Bagby parking area. (30-60 days; 2-4 workers; activities may include: site clearing; electrical work, grading; paving; concrete work; landscaping; tree removal)
- Installing a new water tank at Bagby Campground (15-20 days; 4-6 workers; activities may include, site clearing, grading, landscaping, tree removal, open trenching, concrete work, paving)
- Installing two interpretive and educational displays, with one display at the boat launch parking area and the other at Bagby Campground. The displays would include historical and educational information about the Bagby area, campground layout, camping instructions, and site use requirements. (1-3 days; 2 workers; activities may include: site clearing, landscaping, concrete work, install small structures)
- Upgrading and expanding utilities at the Bagby Campground area. General parameters for updating utilities at the Merced River Project recreation areas are included in Section 2.3.6; plans for site-specific utilities upgrades and rehabilitation will be detailed in Merced ID's proposed *Master Utilities Plan*. Existing utilities that would be included in plans for upgrades include:
    - Water: Water lines, water treatment facilities, irrigation pipes, and water tanks.
    - Power: e.g., overhead and underground power lines, transformers, distribution boxes, and control panels.
    - Sewer: e.g., septic tank, sewer treatment plant, sewer lines, and sewer pump station.
    - Internet: Install new access to the internet through cellular broadband, satellite, or fiber optics, as possible.
- Improving the existing dirt road that provides access from Bagby Campground area to Shepherd's Point Primitive Area. The proposed road shown in the map follows ground elevation contours that may occur outside of FERC boundaries in some locations; land in these locations is owned by Merced ID. New ground disturbance and tree removal would likely be required during road construction, but the existing route would be followed to the extent possible to avoid impacts to surrounding habitat. (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal, open trenching, paving)
- Improving the existing informal whitewater boat takeout at Shepherd's Point Primitive Area to include:
    - A permanent whitewater boat takeout (20-30 days; 2-4 workers; activities may include: site clearing; grading; landscaping; minor in-lake work; increasing existing disturbed footprint)
    - A new two-unit vault restroom facility (5-10 days; 2-4 workers; activities may include site clearing, grading, tree removal, landscaping)
    - A gravel parking area with 10 spaces, with at least two spaces 40 ft in length to accommodate a vehicle with a trailer combination, and a hardened (gravel or other aggregate) takeout trail or path (minimum 10 ft wide) from the parking area to the lake (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal)

- Improvements at existing campsites (including picnic tables and barbeques), and replacing existing pit toilets (10-20 days; 4-6 workers; activities may include: site clearing, grading, tree removal, landscaping)

- Adding a new recreation area at Sherlock Creek east of Shepherd's Point to be used for river access for whitewater rafting. As discussed in Section 2.2.2, this new Sherlock Creek area is being assessed in this draft PEIR at a programmatic level of review due to the many contingencies required to be met before design and planning could begin for: area access and parking, a bridge that would span the Merced River, a potential bridge over Sherlock Creek, and water rafting takeout locations. If all contingencies required in the 2015 Recreation Plan and noted below were met, the area as proposed in the FERC Recreation Plan, would include:
  - Assuming BLM secures public access and use-appropriate conditions to Mosher Road and notifies Merced ID, Merced ID would develop improvements at Sherlock Creek within three years of that notice. These improvements would include a gravel parking area with 10 spaces to accommodate a pickup truck or van, a two-unit vault restroom, and a hardened takeout trail or path, at least 10 ft wide, to serve as an upstream takeout facility. This path would run from the river to the gravel parking area.
  - Assuming BLM provides legal access through ownership or easements and constructs a bridge across the north fork of the Merced River above the high-water level to allow safe public crossings during spring snow melt and storm events, Merced ID would build and maintain a pedestrian bridge for cyclists and hikers near Sherlock Creek. This would serve as part of a trail that Merced ID would construct from BLM land through Merced ID land on the south side of the Merced River. The bridge would be a free span bridge and would not require in-water work. This area falls within the Wild and Scenic designation on the Merced River, so additional approvals and permitting may be required. Merced ID would construct the bridge within three years of notification by BLM that the necessary contingencies have been met.

Horseshoe Bend Recreation Area

Horseshoe Bend Recreation Area consists of about 441 acres and is on the north shoreline of Lake McClure northeast of Barrett Cove Recreation Area, and about 11.5 mi upstream of new Exchequer Dam. The recreation area is entirely within the FERC Project Boundary and all recreation facilities at Horseshoe Bend, besides the boat ramp, are on federal BLM land. This includes the entrance station at the west access, campground, swim area, and most of the boat launch facilities – parking area, restroom facilities, and boat cleaning station – in addition to all circulation roads. Primary access to the recreation area is by SR 132 from the west, southwest, and northwest and SR 49 from the east, southeast and northeast. Horseshoe Bend Recreation Area consists of a campground, day use and swim area, and boat launch.

Horseshoe Bend Recreation Area Existing Conditions

Figure 2-6 at the end of this section presents the existing and proposed recreation area facilities for Horseshoe Bend Recreation Area. Primary circulation highways and roads used for recreation

access that would also be used for construction and maintenance access to the area, are shown in Figure 2-1. Table 2-4 provides a summary of existing recreation facilities and other site elements at Horseshoe Bend Recreation Area.

Table 2-4. Horseshoe Bend Recreation Area Existing Facilities [a]

Facility	Campsites	Picnic Sites	Restrooms	Parking Spaces	Boat Ramp	FEIS Condition (2015)	Current Condition (2024)
Campground Loop A	22 RV	0	0	0	0	Poor	Poor
Campground Loop B	12 Std	0	0	0	0	Fair	Fair
Campground Loop C	18 Std	0	0	0	0	Poor	Poor
Campground Loop D	16 Std; 2 RV	0	2 Flush	0	0	Fair	Poor
Campground Loop E	7 Std	0	0	0	0	Poor	Poor
Campground Loop F	12 Std	0	0	0	0	Poor	Poor
Campground Loop G	20 RV	1 Grp	1 Flush	0	0	Fair-to-Good	Poor
Subtotal	***65 Std; 44 RV***	***1 Grp***	***3 Flush***	***0***	***0***	**-**	**-**
Day Use and Off-lake Swim Area	0	12 Std	1 Flush	50	0	Fair	Fair
Boat Launch	0	0	1 Flush	49	1 with 2 lanes	(MID) Fair; (BLM) Fair-to-Good	(MID) Fair; (BLM) Fair-to-Good
Total	65 Std; 44 RV	12 Std; 1 Grp	5 Flush	99	1	-	-

Std = Standard one-family site; RV = Recreational Vehicle site with water and electric hookups; Grp = Group Site
[a] Condition assessment rating only includes those facilities on Merced ID land.

CAMPGROUND (BLM LAND)

The campground consists of 109 total campsites in seven loops. The campground has 53 drive-in standard sites, each with a table, pedestal grill, food locker, and vehicle spur (gravel); 12 walk-in standard sites, each with a table, pedestal grill, and food locker; and 44 RV sites each with a table, pedestal grill, food locker, vehicle spur (gravel or asphalt), and hookups (water and electric). Where existing trees do not provide shade, 42 of the campsites have shelters. The facility also has three flush restrooms with showers, water faucets, pits for campfires, and trash receptacles dispersed throughout the campground. A group picnic shelter, located in campground loop G, consists of six tables, two sinks, and a food preparation area.

DAY USE AND SWIM AREA (BLM LAND)

The day use and off-lake swim area is a short walk from the campground loops and consists of an off-lake swim area with a beach, 12 picnic units, and one flush restroom building (including outdoor showers). This facility is not available when water elevations are too low to pump water from the lake. Overflow parking for 50 vehicles (single spaces) is available nearby. Each picnic site includes a picnic table, and five pedestal grills are dispersed throughout the facility.

BOAT RAMP (MERCED ID LAND)

The boat ramp is a two-lane concrete ramp with a floating courtesy dock. The boat ramp has a functional WSE range from 800 ft down to 761 ft.

BOAT LAUNCH (BLM LAND)

The boat launch facility consists of the two-lane concrete boat ramp described above, parking area, and a flush restroom building. The paved (asphalt) parking area has 49 spaces, which includes eight single spaces and 41 double spaces. The facility also has a boat cleaning station, and the flush restroom building has a fish cleaning station.

RANGER COURT (BLM LAND)

In addition to the recreation facilities described above, the Horseshoe Bend Recreation Area includes a ranger court. The ranger court is located north of the public recreation facilities and includes a variety of facilities used by Merced ID to operate and maintain the recreation area facilities. The ranger court facilities include potable water system facilities; electric service meter (for service to Horseshoe Bend Recreation Area facilities); shop and storage buildings; ranger residences; equestrian corral and facilities; other remnant maintenance facilities; and a temporary debris pile.

The potable water system facilities include a well, water treatment facility, and a water storage tank. The water treatment facility receives water from the well, where a chlorine injection system treats the water before being pumped to the water storage tank using a 5,000-gallon booster tank and a pressure pump. The water storage tank has a capacity of 85,000 gallons and supplies potable water (gravity fed) to the Horseshoe Bend Recreation Area facilities, as needed.

The wastewater treatment plant is east of the boat launch parking area. It consists of a return-activated sludge treatment system, rated at 28,000 gallons per disposal, and a fenced field on which the treated effluent is dispersed by spray irrigation.

The abandoned ranger residences include two mobile homes – one in the ranger court area near the water treatment building, and one on a hill below the water storage tank.

PRIVATE RECREATIONAL CLUB AREAS

Merced ID allows two private clubs to utilize areas near the Horseshoe Bend Recreation Area that are primarily outside of the FERC boundary. Each private club pays Merced ID an annual fee for use of Merced ID-managed lands that fall within the FERC boundary. A description of the facilities at the private recreational club areas is provided below.

Mother Lode Sky Riders Hang Gliding Club (Private)

The private hang glider club is called Mother Lode Sky Riders (Hang Gliders). The club's current membership includes 34 members. Typically, the club holds two to three open events each year.

The hang glider club area consists of two access roads (entrance and exit), a camp area, and a landing zone. The entrance access road is gated at the junction with the main Horseshoe Bend Recreation Area access road and provides ingress from the south of the club area within the Horseshoe Bend Recreation Area boundary to their entrance station immediately to the west of the ranger court and water treatment facility. The access road has a dirt surface. The camp area is used

by hang gliders to gather following flights. The landing zone is the main landing area for hang gliders.

Horseshoe Bend Field Archery Club (Private)

The private archery club has 10 family memberships, down from a maximum of 25 in the past. In addition to the club member's events and use, the club typically holds two to three open events each year.

The archery club area consists of an access road, a practice target range with parking (dirt), an archery course, fire ring, water faucet, vault toilet and storage facilities. The archery range consists of 28 shooting stations, with walking trails connecting the stations. Club members have built and currently maintain the shooting targets. The access road is a dirt road gated at the entrance off SR 132.

Horseshoe Bend Recreation Area Proposed Projects

Common project types consistent across recreation areas (Section 2.3.5) that are proposed at the Horseshoe Bend Recreation Area are shown in Figure 2-6 and include:

- Minor upgrades to campground with no effects on undisturbed ground
- Upgrades or expansions at campground that may affect undisturbed ground
- Upgrade all restroom facilities (flush toilets and showers)
- Upgrade day use off-lake swim area and facilities
- Add new on-lake swim area with platforms
- Upgrade existing well.
- Rehabilitate existing boat ramp (Merced ID land)
- Update parking lots and all paved roads, including adding EV car charging stations
- Add concrete slab areas with water/wastewater/electricity access for potential concessionaires
- Install new Horseshoe Bend Loop Trail
- Install or upgrade directional and educational signage
- Install additional floating comfort stations in lake for boaters

Proposed projects at the Horseshoe Bend Recreation Area are listed below. Some of the projects are from the 2015 Recreation Plan developed for the FERC Merced River Project NLA, while others have been added. Where necessary, additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- Removing the existing ranger court residences, now abandoned. This includes the removal of the two mobile homes and the temporary debris pile, the latter in accordance with BLM Final 4(e) Condition No. 4. (2-4 days; 2-4 workers; Activities would include site clearing; landscaping)

- Adding a new host site at the Horseshoe Bend Campground. The host site would include a wastewater treatment, solar or other power, and water hookups. (60-90 days; 2-4 workers; Activities would include site clearing; landscaping; open trenching; concrete work)
- Enhancing the existing day use off-lake swim area by installing an aerator in the swimming off-lake water play area which would provide a new recreational water feature (e.g., spray). Installation of aerators may require appurtenant infrastructure, including filtration and treatment systems. Enhance the existing swim lagoon with sand, install up to 10 additional picnic tables and pedestal grills, sand volleyball court, and children's playground with stationary playground equipment. Installing new anchored, floating swim platforms and upgrading the existing on-lake swim area along the south shoreline near the off-lake day use and swim area. The swim platforms would be accessible by swimming/wading or non-motorized craft and would potentially consist of a jumping platform, ladder(s), and/or a slide. A watercraft restriction zone would be created around the swim platforms, demarcated by new swim buoys and signage. (30-60 days; 2-4 workers; Activities would include shoreline and in-lake work)
- Developing a new non-motorized loop trail - Horseshoe Bend Loop Trail - within the recreation area. The trail would begin at the boat launch and extend to the east. The dirt trail would be approximately one mile long and up to 6 ft wide, and it would be designed to BLM trail standards for foot travel only. The existing boat launch parking area would serve as parking for trail users that drive to the trailhead. The current trail alignment is yet to be finalized but may include creek/water crossings in areas of sensitive resources. No fill or footings would be placed in the creeks/streams. The proposed trail would be constructed within the existing FERC project boundary. (10-20 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal)
- New prefabricated park model cabins and group site amenities would be developed and installed at the Horseshoe Bend Recreation Area. The cabins would be near the existing picnic area below Loop G. Each new cabin would include a picnic table and pedestal grill. The cabins would include water, electric, and sewer connections. (10-20 days; 4-6 workers; activities may include site clearing, grading, landscaping, open trenching)
- Upgrading and expanding utilities at the campground area. General parameters for updating utilities at the Merced River Project recreation areas are included in Section 2.3.6; plans for site-specific utilities upgrades and rehabilitation will be detailed in Merced ID's proposed *Master Utilities Plan*. Existing utilities that would be included in plans for upgrades include:
    - Water: Water lines, water treatment facilities, irrigation, and water tanks.
    - Power: e.g., overhead, transformers, distribution boxes, control panels.
    - Sewer: e.g., septic tanks, sewer treatment plants, sewer lines, sewer pump stations.
    - Internet: Install new access to the internet through cellular broadband, satellite, or fiber optics.
- Merced ID would enhance the existing Mother Lode Sky Riders Hang Gliding Club area with the following improvements:
    - Closing the existing exit access road to SR 132 to the north. Once this road is closed, the only road access to the site would occur through the main entrance gate

from the southwest (6-10 days; 2-4 workers; Activities would include site clearing; grading; landscaping; installing barriers). Once closed, dirt roads north of the Hang Glider Club would be removed and the area would be rehabilitated.

- Installing a vault toilet facility at the informal existing camp area adjacent to the landing zone area. (5-10 days; 2-4 workers; activities may include: site clearing, grading, tree removal, landscaping)
- Improving the road access from the informal camp area to the hang gliders landing zone by developing a single-lane road with vehicle pullouts (the road would have a gravel surface; maximum width of 20 ft; and total length of approximately 400 ft at the turnaround area at the landing area zone). (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal, open trenching, paving)

- Merced ID would enhance the existing Horseshoe Bend Field Archery Club area with the following improvements:
  - Closing and rehabilitating any archery sites not being used or that may cause injury to potential non-archery participants. (5-10 days; 2-4 workers; activities may include site clearing, grading, minor tree removal, landscaping) [from upgrade day use and picnic area)
  - Replacing older toilets with a vault toilet facility at the main club camp area where existing camp sites are situated on BLM lands within the Project Area. (5-10 days; 2-4 workers; activities may include landscaping, open trenching)
  - Improving the main access road. The road would have a gravel surface, a maximum width of 20 ft, and a total length of approximately 1,000 ft. (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal)

Figure 2-6. Horseshoe Bend Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries

Barrett Cove Recreation Area

Barrett Cove Recreation Area is the largest recreation area in the Proposed Project and is located on the west shoreline of Lake McClure to the north of McClure Point Recreation Area, about 4.5 mi upstream of New Exchequer Dam. The recreation area is located entirely within the FERC Project Boundary on Merced ID-owned land. Primary access to the recreational area is by Merced Falls Road from the southwest, SR 132 from the west and northwest, and SR 49 from the east, southeast and northeast. All the recreation facilities at Barrett Cove Recreation Area are on Merced ID land. Barrett Cove Recreation Area consists of approximately 380 acres and includes a campground, day use and swim area, two boat launches, marina, and an overflow parking area.

Barrett Cove Recreation Area Existing Conditions

Figure 2-7 presents the existing and proposed recreation area facilities for Barrett Cove Recreation Area. Primary circulation highways and roads used for recreation access that would also be used for construction and maintenance access to the area are shown in Figure 2-1. Table 2-5 provides a summary of existing recreation facilities and other site elements at Barrett Cove Recreation Area.

Table 2-5. Barrett Cove Recreation Area Existing Facilities

Facility	Campsites	Picnic Sites	Restrooms	Parking Spaces	Boat Ramp	FEIS Condition (2015)	Current Condition (2024)
Campground Loop A	8 Std	0	1 Flush	0	0	Fair	Poor
Campground Loop B	9 RV	0	0	0	0	Poor	Poor
Campground Loop C	19 RV	0	1 Flush	0	0	Fair	Fair
Campground Loop D	6 RV	0	0	0	0	Fair	Fair
Campground Loop E	13 Std	0	0	0	0	Poor	Poor
Campground Loop F	30 Std; 4 RV	0	1 Flush	5	0	Fair	Poor
Campground Loop G	8 Std; 20 RV	0	2 Flush	14	0	Fair	Poor
Campground Loop H	10 Std	0	0	0	0	Fair	Poor
Campground Loop I	24 Std	0	1 Flush	5	0	Poor	Poor
Campground Loop J	30 Std	0	2 Flush	0	0	Fair	Poor
Campground Loop K	10 RV	0	0	0	0	Fair	Good
Campground Loop L	15 RV	0	1 Flush	0	0	Fair	Good
Campground Main Loop	54 Std; 15 RV	0	3 Flush	15	0	Fair	Poor
Subtotal	***177 Std; 98 RV***	***0***	***12 Flush***	***39***	***0***	-	-
Day Use and Off-lake Swim Area	0	12 Std; 1 Grp	1 Flush	30	0	Fair	Poor
Boat Launch – North (concrete)	0	6 Std	1 Flush	186	1 with 2 lanes	Fair	Fair
Boat Launch – South (concrete)	0	0	1 Flush	81	1 with 3 lanes	Fair	Fair
Overflow Parking	N/A	N/A	N/A	35	N/A	N/A	Poor
Total	177 Std; 98 RV	18 Std; 1 Grp	15 Flush	371	2	-	-

Std = Standard one-family site; RV = Recreational Vehicle site with water and electric hookups; Grp = Group Site

CAMPGROUND

The facility consists of 275 total campsites throughout 13 loops. The campground has 177 standard sites, each with a table, pedestal grill, and vehicle spur; and 98 RV sites, each with a table, pedestal grill, vehicle spur (gravel or asphalt), and hookups (water and electric). The facility also has 12 flush restrooms with indoor and outdoor showers, 39 parking spaces adjacent to the restrooms, water faucets, pits for campfires, and trash receptacles dispersed throughout the campground.

DAY USE AND SWIM AREA

The day use and swim area facility consists of an off-lake swim area with a beach, 12 standard picnic areas, sand lot volleyball, a children's playground with stationary equipment, one flush restroom building that includes outdoor showers, and a gravel parking area for 30 vehicles (single spaces). Each picnic unit consists of a table and shelter. Five pedestal grills are dispersed throughout the facility. The facility also includes one group picnic shelter with six tables, a large group pedestal grill, two sinks, and a food preparation area.

NORTH BOAT LAUNCH

The North Boat Launch consists of a boat ramp, parking area, fish cleaning station, and a flush restroom building. The boat ramp has a concrete surface with two lanes and a floating courtesy dock that connects to the marina. The boat ramp has a functional WSE range from 750 ft down to 593 ft. The paved (asphalt) parking areas provide 186 spaces, including 60 single spaces and 96 double spaces in two paved lots, and 30 additional single spaces in a gravel lot. The facility also has six picnic units, each with a table and shelter; and a marina with a general store, boat slips, fuel station, restroom facilities, and pump out station for boats to dispose of sewage.

SOUTH BOAT LAUNCH

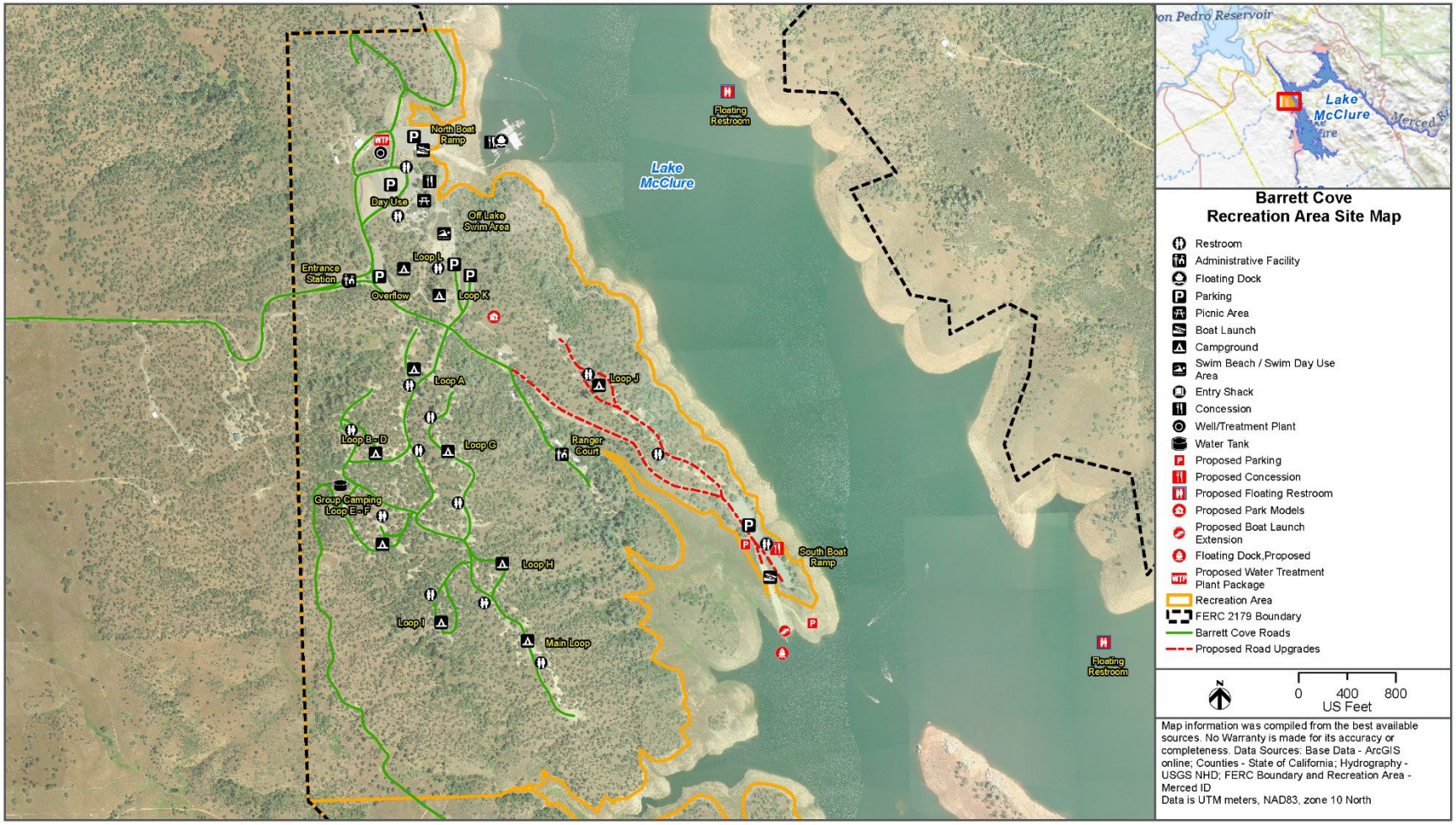
The South Boat Launch consists of a boat ramp, parking area, fish cleaning station and a flush restroom building. The boat ramp has a concrete surface with three lanes and a floating courtesy dock. The boat ramp has a functional WSE range from 750 ft down to 633 ft. The paved (asphalt) parking area has 81 spaces, which includes five single spaces and 76 double spaces.

Barrett Cove Recreation Area Proposed Projects

Common project types consistent across recreation areas (Section 2.3.5) that are proposed at the Barrett Cove Recreation Area are shown on Figure 2-7 and include:

- Minor upgrades to campground with no effects on undisturbed ground
- Upgrades or expansions at campground that may affect undisturbed ground
- Install new Park Model cabins
- Upgrade restroom facilities (flush toilets and showers)
- Upgrade day use and off-lake swim area
- Upgrade existing well.
- Rehabilitate boat docks at North and South Boat Ramps

Figure 2-7. Barrett Cove Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries



- Expand houseboat moorings buoys/ install new rock anchors to meet different water levels, as possible
- Lengthen and widen South Boat Launch
- Update and expand parking lots and roads, including adding EV car charging stations at North Boat Ramp parking area
- Add concrete slab areas with water/wastewater/electricity access for potential concessionaires
- Install additional floating comfort stations in lake for boaters
- Formalize/upgrade South Boat Ramp existing parking area and add new low-water parking area.

Proposed projects that are specific to the Barrett Cove Recreation Area are listed below. Some of the projects are from the 2015 Recreation Plan developed for the FERC Merced River Project NLA, while others have been added. Where necessary, additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- Rehabilitating and upgrading restrooms, parking lots and other facilities at both North and South Boat Launch areas. (5-10 days; 2-4 workers; activities may include landscaping, open trenching)
- Adding new houseboat moorings at the Barrett Cove Houseboat Area north of Barrett Cove Recreation Area (Figure 2-8). (2-5 days; 2-4 workers; activities may include concrete work, in-lake work)
- Day use and swim area improvements would include adding sand at the existing off-lake beach, including along the slopes and bottom of the swim area, as feasible; installing aerators in swim area, installation of aerators may require appurtenant infrastructure, including filtration and treatment systems; adding up to 15 picnic tables and pedestal grills; upgrades to existing sand lot volleyball court; and a children's playground with stationary playground equipment. (5-10 days; 4-6 workers; activities may include site clearing, grading, tree removal, paving, landscaping)
- Rehabilitating and expanding South Boat Launch ramp and floating dock facilities. (20-30 days; 4-6 workers; activities may include grading, landscaping, tree removal, open trenching, concrete work, paving, in-lake work)
- Installing new prefabricated park model cabins and group site amenities at the Barrett Cove Recreation Area. Each cabin would include water, electric, and sewer connections, along with a picnic table and a pedestal grill. Group site amenities, including a playground and/or splashpad, may also be constructed. (10-20 days; 4-6 workers; activities may include site clearing, grading, landscaping, open trenching)
- Rehabilitating all paved roads within recreation area (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal, open trenching, paving)

- Upgrading and expanding utilities at the campground area. General parameters for updating utilities at the Merced River Project recreation areas are included in Section 2.3.6; plans for site-specific utilities upgrades and rehabilitation will be detailed in Merced ID's proposed Master Utilities Plan. Existing utilities that would be included in plans for upgrades include:
    - Water: Water lines, water treatment facilities, irrigation, and water tanks.
    - Power: e.g., overhead and underground power lines, transformers, distribution boxes, control panels.
    - Sewer: e.g., septic tanks, sewer treatment plants, sewer lines, sewer pump stations.
    - Internet: Install new access to the internet through cellular broadband, satellite, or fiber optics.

Mack Island Recreation Area

Mack Island is in Lake McClure, and the proposed Recreation Area coupled with the recently developed Exchequer Mountain Bike Park, but not including Mountain Bike Park territory outside of the FERC boundary would comprise the Mack Island Recreation Area, an area of about 295 acres. As Mack Island is currently undeveloped, any projects on the island itself would create new disturbances in previously undisturbed areas. Access to Mack Island Recreation Area is from the Barrett cut-off road, a dirt and gravel road extending from the water tower at Barrett Cove to McClure Point. Access to Mack Island would be limited to boat or foot traffic only. Facilities on Mack Island would be primitive in nature and would not include potable water, utilities, or electricity on the island.

As described in Chapter 1, the Exchequer Mountain Bike Park phased construction is going through a separate CEQA process. The CEQA process for Phase I of the development was completed in 2016, and construction has been completed for that phase.

Common project types consistent across recreation areas (Section 2.3.5) that are proposed at the Mack Island Recreation Area are shown on Figure 2-9 and include:

- Upgrades or expansions at campground that may affect undisturbed ground
- Install or upgrade small vault restroom facilities
- Install or upgrade on-lake swim area
- Add, rehabilitate, and/or expand parking lots and roads
- Install or upgrade hiking and/or biking trails
- Add areas with water/wastewater/electricity access for potential concessionaires

Figure 2-8. Houseboat Moorings at Lake McClure

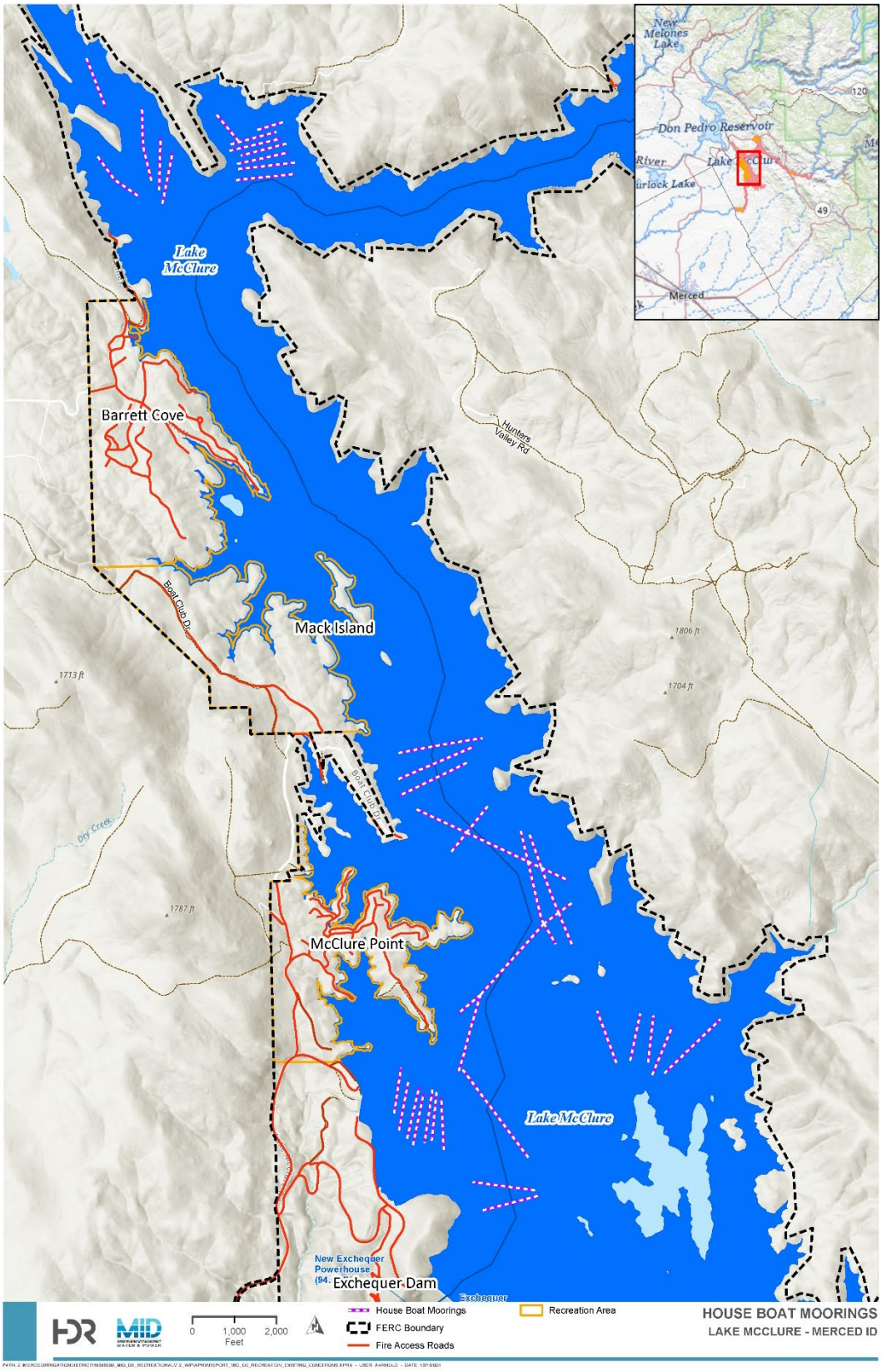
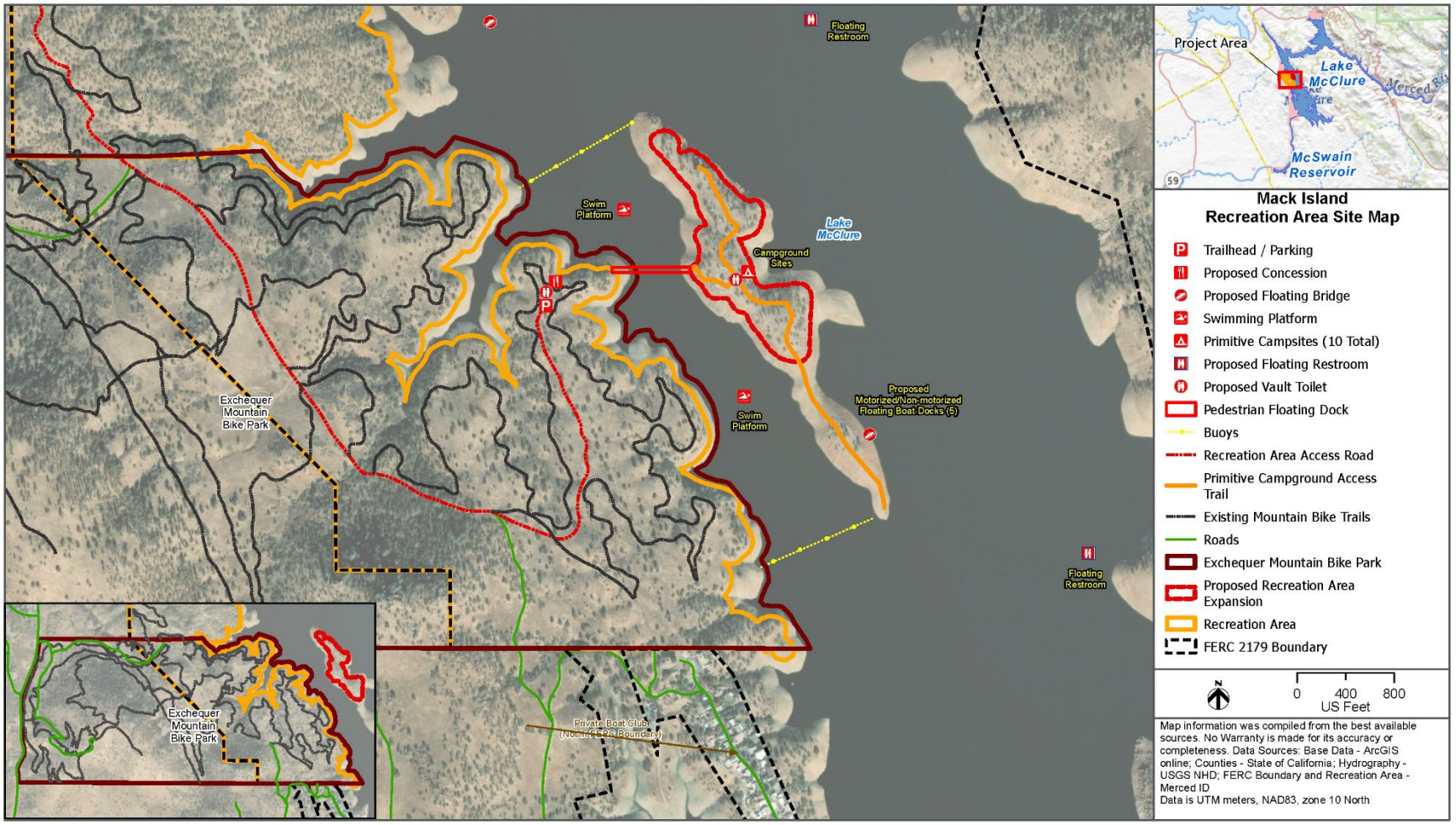


Figure 2-9. Mack Island Recreation Area



Proposed projects specific to the Mack Island Recreation Area are listed below. Some of the projects are from the 2015 Recreation Plan developed for the FERC Merced River Project NLA, while others have been added. Where necessary, additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- An access road to the Mack Island Recreation Area from the Barrett Cove Recreation Area to the north. The road would include a paved bike lane open to park visitors. (10-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal, open trenching, paving)
- New facilities on Mack Island would include a trail to the primitive campsites and shoreline access, a fishing dock, up to two swim platforms, buoys, and up to 10 primitive campsites along the island's highest reach. Strings of water buoys reaching from the top and bottom of the island to the adjacent section of mainland to block motorized boat traffic and allow for safe swimming and water recreation would also be installed, along with a floating dock on the lake side for boat anchoring. (30-60 days; 2-4 workers; activities may include site clearing, grading, landscaping, tree removal, in-lake work)
- A floating pedestrian bridge, or alternative crossing method, from the proposed trailhead parking area to Mack Island would be constructed. (60-90 days; 2-4 workers; activities may include site clearing, grading, landscaping, tree removal, in-lake work)
- On the mainland portion of Mack Island Recreation Area, near the Exchequer Mountain Bike Park, water lines and a potable water tank, electrical lines, vault toilets, and associated utilities would be installed. (15-30 days; 4-6 workers; activities may include site clearing, grading, landscaping, tree removal, open trenching, concrete work, paving)

McClure Point Recreation Area

McClure Point Recreation Area is about 262 acres on the southwest portion of Lake McClure. Primary access to the recreational area is from the southwest by County Road J-16 and Lake McClure Road. McClure Point Recreation Area consists of a campground, picnic area, off-lake swim area, marina, and boat launch. The RA is located entirely within the FERC Project Boundary. All of the recreation area is on Merced ID-owned land, with the exception of 11.8 ac of federal land administered by BLM that is located on the peninsula to the east of campground loop F. This parcel of federal land contains the undeveloped boat launch facility and marina access road.

McClure Point Recreation Area Existing Conditions

Figure 2-10 at the end of this section presents the existing and proposed recreation area facilities for McClure Point Recreation Area. Primary circulation highways and roads used for recreation access that would also be used for construction and maintenance access to the area, are shown in Figure 2-1. Table 2-6 provides a summary of existing recreation facilities and other site elements at McClure Point Recreation Area.

Table 2-6. Summary of Existing Recreation Facilities and Other Site Elements at McClure Point Recreation Area

Facility	Campsites	Picnic Sites	Restrooms	Parking Spaces	Boat Ramp	Overall Condition (2015)	Current Condition (2024)
Campground Loop A	16 Std	0	1 Flush	0	0	Fair	Poor
Campground Loop B	11 RV	0	0	0	0	Poor	Poor
Campground Loop C	21 RV	0	1 Flush	4	0	Fair	Poor
Campground Loop D	18 Std	0	1 Flush	5	0	Fair	Poor
Campground Loop E	13 Std; 10 RV	0	1 Flush	5	0	Poor	Fair
Campground Loop F	12 Std	0	0	0	0	Fair-to-Good	Fair
Subtotal	***47 Std; 54 RV***	***0***	***4 Flush***	***14***	***0***	-	-
Picnic Area	0	8	0	8	0	Poor	Poor
Day Use Swim Area	0	22	1 Flush	60	0	Poor	Poor
North Ramp Boat Launch	0	0	1 Flush	50	0	Fair	Poor
South Ramp Boat Launch	0	0	1 Flush	140	1 with 3 lanes	Fair	Fair
Total	47 Std; 54 RV	30	7 Flush	272	1	-	-

CAMPGROUND

The campground consists of 101 campsites in six campground loops. The campground has 47 standard sites, each with a table, pedestal grill, and vehicle spur; and 54 RV sites, each with a table, pedestal grill, gravel or asphalt vehicle spur, and hookups (water and electric). Some of the campsites have shelters. Four flush restroom buildings are dispersed throughout the campground in loops A, C, D and E, which includes showers. In addition, 14 parking spaces, water faucets, pits for campfires, and trash receptacles are dispersed throughout the campground Picnic Area.

The picnic area facility consists of eight picnic units, each with a table, shelter, and pedestal grill. The facility provides parking for approximately eight vehicles with a single space in a gravel area adjacent to each picnic unit off-lake swim area.

The off-lake swim area includes a swimming lagoon with a beach area, 22 picnic units, one flush restroom building that includes showers, and a gravel parking area for 60 vehicles (single spaces). Each picnic unit consists of a table, shelter, and pedestal grill.

SOUTH BOAT LAUNCH

The south boat launch consists of a boat ramp, parking area, fish cleaning station, and a flush restroom building. The boat ramp has a concrete surface with three lanes and a floating courtesy dock. The boat ramp has a functional WSE range from 750 ft down to 653 ft. A paved (asphalt) parking area consists of an upper and lower lot with 100 parking spaces, including 24 single spaces and 76 double spaces. In addition, a gravel parking area provides 40 additional spaces for overflow parking.

NORTH BOAT LAUNCH

The north boat launch includes a concrete boat ramp and parking for 50 vehicles in a paved lot. The marina also has a flush restroom building onshore and boat slips for power boats and houseboats.

McClure Point Recreation Area Proposed Projects

Common project types consistent across recreation areas (Section 2.3.5) that are proposed for the Lake McClure Recreation Area are shown on Figure 2-10 and would include:

- Minor upgrades to campground with no effects on undisturbed ground.
- Upgrades or expansions at campground that may affect undisturbed ground.
- Rehabilitate boat docks.
- Add new houseboat mooring buoys at existing locations (see discussion in 2.3.6.3 Barrett Cove Recreation Area and Figure 2-8 Houseboat Moorings).
- Upgrade or expand South Boat Ramps and add boat dock.
- Add, rehabilitate, and/or expand parking lots and roads.
- Install or upgrade the off-lake swimming or fishing area.
- Install new Park Model cabins Install or upgrade directional and educational signage.
- Add areas with water/wastewater/electricity access for potential concessionaires at both North and South boat ramps.
- Upgrade existing well.
- Install additional floating comfort stations on the lake for boaters.

Proposed projects specific to the McClure Point Recreation Area are listed below. Some of the projects are from the 2015 Recreation Plan developed for the FERC Merced River Project NLA, while others have been added. Where necessary, additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- New prefabricated park model cabins and sites would be developed and installed within the recreation area. The cabins would include water, electric, and sewer connections. To the extent possible, the Proposed Project would tie into existing infrastructure; however, new utilities may be required. Each cabin would include a picnic table and pedestal grill. The cabins would be on the peninsula beyond the picnic area (30-60 days; 2-4 workers; activities may include site clearing; grading; landscaping; tree removal; trenching; new utilities).
- Developing a new group day use facility for up to 90 people north of Loop E and the existing park model cabins. The facility would include a large group shelter with picnic tables, pedestal grills, and a restroom. The restroom would serve this facility, and the existing park model cabins located on the peninsula. The new day use facility would require substantial underground trenching to connect to existing water, sewer utilities, electrical, communication, and related utilities (30-60 days; 2-4 workers; activities may include site clearing; grading; landscaping; trenching).

- Installing floating swim platforms in the inlets along the north shoreline of the recreation area near proposed group picnic and day use area, potentially consisting of jumping platforms, ladder(s), and/or slides. Merced ID would implement a watercraft restriction zone at the mouth of each of the two inlets demarcated by buoys and signs. Access would be from west side of Loop D and/or the proposed group day use area (30-60 days; 2-4 workers; activity would include in-lake work)
- Enhancing the existing day use of the off-lake swim area by installing an aerator in the swimming pool which would provide an additional recreational water feature (e.g., spray). Installation of aerators may require appurtenant infrastructure, including filtration and treatment systems. Improve the existing off-lake swim area by installing new sand and installing up to 10 additional picnic tables, canopies, and pedestal grills. (5-10 days, 4-6 workers, site clearing, grading, tree removal, paving, landscaping)
- Utilities at McClure Recreation Area:
    - Water: Water lines, water treatment facilities, irrigation, and water tanks.
    - Power: e.g., overhead and underground power lines, transformers, distribution boxes, control panels.
    - Sewer: e.g., septic tanks, sewer treatment plants, sewer lines, sewer pump stations.
    - Internet: Install new access to the internet through cellular broadband, satellite, or fiber optics.

Figure 2-10. Lake McClure Recreation Area Existing Conditions, Proposed Improvements and Recreation Area Boundaries

McSwain Recreation Area

McSwain Recreation Area (Figure 2-11) is on the north shoreline of McSwain Reservoir near McSwain Dam. Primary access to the recreational area is by County Road J-16 and Lake McClure Road from the southwest. McSwain Recreation Area is about 239 acres and includes a campground, picnic area, group picnic area, swim lagoon, marina, boat launch, and informal day use area.

Figure 2-11. McSwain Reservoir and Dam

McSwain Recreation Area Existing Conditions

Figure 2-12 and Figure 2-13 at the end of this section presents the existing and proposed recreation area facilities for McSwain Recreation Area. The recreation area is entirely within the FERC Project Boundary on Merced ID-owned land. Primary circulation highways and roads used for recreation access that would also be used for construction and maintenance access to the area, are shown in Figure 2-1. Table 2-7 provides a summary of existing recreation facilities and other site elements at McSwain Recreation Area.

Table 2-7. McSwain Recreation Area Existing Facilities

Facility	Campsites	Picnic Sites	Restrooms	Parking Spaces	Boat Ramp	Overall Condition (2015)	Current Condition (2024)
Campground Loop A	18 Std; 10 RV	0	1 Flush	0	0	Poor	Poor
Campground Loop B	3 RV	0	0	5	0	Poor	Fair
Campground Loop C	6 Std; 9 RV	0	1 Flush	8	0	Poor	Poor
Campground Loop D	7 Std; 6 RV	0	0	0	0	Poor	Poor
Campground Loop E	7 Std	0	0	0	0	Fair	Fair
Campground Loop F	11 RV	0	0	0	0	Fair	Poor
Campground Loop G	22 RV	1	0	0	0	Fair	Poor
Overflow	13 Std	0	0	15	0	Fair	Fair
Subtotal	***51 Std; 61 RV***	1	***2 Flush***	***28***	***0***	-	-
Picnic Area	0	12	0	52	0	Fair	Fair
Group Picnic Area	0	1	1 Flush	55	0	Good	Poor
Day Use Swim Area	0	6	1 Flush	15	0	Fair	Poor
Marina	0	0	1 Flush	20	0	Good	Fair
Boat Launch	0	0	2 Flush	89	1 with 2 lanes	Good	Fair
Informal Day Use Area	0	8	1 Vault	24	0	Fair	Poor
Total	51 Std; 61 RV	18 Std; 1 Grp	7 Flush; 1 Vault	283	1	-	-

CAMPGROUND

The campground consists of 112 campsites in eight campground loops, including an overflow loop. The campground has 51 standard sites, each with a table, pedestal grill, food locker and vehicle spur; and 61 RV sites, each with a table, pedestal grill, food locker, vehicle spur (gravel or asphalt) and hookups (water and electric, some include sewerage). Most of the campsites have shelters over the table. Two flush restroom buildings are dispersed throughout the campground in loops A and C and include showers. In addition, 28 parking spaces, water faucets, pits for campfires, and trash receptacles are dispersed throughout the campground. A group picnic shelter in campground Loop G consists of six tables and trash receptacles.

PICNIC AREA

The picnic area facility consists of 12 picnic units, each with a table. Four pedestal grills are dispersed throughout the picnic area. The facility also has a paved (asphalt) parking area for 52 vehicles, floating fishing pier, and playground equipment for kids.

GROUP PICNIC AREA

The group picnic facility consists of nine long tables under three large metal shelters and a large group pedestal grill. The facility also has a flush restroom and a paved (asphalt) parking area for 55 vehicles.

DAY USE IN-LAKE SWIM AREA

The in-lake day use swim area includes a beach area, six picnic units, one flush restroom building, and a gravel parking area for 15 vehicles (single spaces). Each picnic unit consists of a table and pedestal grill. The existing Splash-n-Dash Aqua Park concessionaire has a buoyed-off swim area that takes up about half of the existing beach area.

MARINA

The facility consists of a general store with a commercial kitchen, restrooms, boat dock and slips, and a gravel parking area for 20 vehicles (single spaces).

BOAT LAUNCH

The boat launch consists of a boat ramp, parking area, fish cleaning station, and two flush restroom buildings. The boat ramp has a concrete surface with two lanes and a floating courtesy dock. The boat ramp has a functional WSE range from 400 ft down to 387.6 ft. A paved (asphalt) parking area provides 89 parking spaces, including 24 single spaces and 65 double spaces. In addition, a nearby gravel parking area provides 40 additional spaces for overflow parking for the boat launch and other McSwain Recreation Area visitors.

EXISTING PARK MODEL CABINS

There are six existing park model cabins along the shoreline east of Loop A and Loop B.

INFORMAL DAY USE AREA

On the east side of the recreation area, the facility has eight picnic units (table only), pit restroom building, and informal gravel parking area for approximately 16 vehicles.

McSwain Recreation Area Proposed Projects

Proposed projects that are specific to the McSwain Recreation Area are listed below; additional details regarding construction days, workers, and activities are included where the project was not included in or is different from descriptions in Table 2-2. These projects include:

- Minor upgrades to campground with no effects on undisturbed ground
- Upgrades or expansions at campground that may affect undisturbed ground
- Add, rehabilitate, and/or expand parking lots and roads, including adding EV car charging stations
- Install off-lake swim and/or fishing area
- Upgrade existing day use and picnic areas, and add new day use area
- Rehabilitate marina facilities and boat docks
- Install or upgrade directional and educational signage
- Install new Park Model cabins
- Add areas with water/wastewater/electricity access for potential concessionaires
- Upgrade existing well.

- Install new and upgrade existing floating comfort stations in lake for boaters

Activities that are specific to the Lake McSwain Recreation Area include:

- Sand would be installed at the in-lake swim beach and the length of the beach to the east would be expanded by up to 50 percent. Up to two new anchored floating swim platforms would be installed. The swim platforms would potentially consist of a jumping platform, ladder(s), and/or a slide. (3-5 days; 2-4 workers; activities may include site clearing, grading, tree removal)
- An off-lake swim area and separate fishing pond for children would be created where there is an existing lake inlet west of the group picnic area. Fish would be stocked in the new off-lake pond seasonally. (5-10 days; 4-6 workers; activities may include site clearing, grading, tree removal, paving, landscaping)
- The open area between the McSwain dam and the proposed off-lake swimming area and fishpond would be used to construct an additional day use and on-lake swimming area and beach. Day use area would include up to 20 picnic tables, sun canopies and pedestal grills; sand lot volleyball court along beach; and a new children's playground with stationary playground equipment. (5-10 days; 2-4 workers; activities may include site clearing, grading, tree removal, paving, landscaping, concrete work)
- The existing overflow campground above the group picnic area would be developed into a new Loop H with improvements to include standard camp sites each with a table, pedestal grill, canopy (where there are not trees available), and vehicle spur. (10-20 days; 4-6 workers; activities may include site clearing, grading, tree removal, landscaping)
- Make upgrades and improvements to the existing marina, potentially including new concessionaire concrete slabs. (20-30 days; 4-6 workers; activities may include site clearing, grading landscaping, tree removal, open trenching paving concrete work, in-lake work)
- Install new day use area above the overflow dirt parking lot east of new Loop H, with up to 10 picnic tables, sun canopies and pedestal grills, sand lot volleyball court, and a new children's playground with stationary playground equipment. (5-10 days; 2-4 workers; activities may include site clearing, grading, tree removal, paving, landscaping, concrete work)
- New, prefabricated park model cabins and sites would be developed and installed Campground Loop F and the informal day use area. The cabins would include water, electric, and sewer connections. To the extent possible, the proposed project would tie into existing infrastructure; however, new utilities may be required. Each cabin would include a picnic table and pedestal grill. (30-60 days; 2-4 workers; activities may include site clearing; grading; landscaping; tree removal; trenching; new utilities).
- A non-motorized shoreline trail, the McSwain Reservoir Shoreline Trail, would be developed that extends from the Informal Day Use Area at the east end of the McSwain Recreation Area and moves upstream to the existing gravel pullout at New Exchequer Dam. The dirt trail would be approximately 4.1 miles in length and up to 4 ft wide. The proposed trailhead locations have existing dirt/gravel parking areas that can accommodate parking for trail users. A floating bridge would be added to cross a small inlet at the beginning of the trail; no in-water work would occur. To the extent possible, the trail would stay along the shoreline

until moving up closer to the road prior to reaching New Exchequer Dam (90-120 days; 4-6 workers; activities may include site clearing, grading).

- A new paved bike lane, approximately 5 miles long and up to 8 ft wide, would be developed along the reservoir side of Lake McClure Road. The new paved bike lane would mostly fit within the existing roadway clearing, although it may require some widening (away from road), addition of fill, retaining walls, and new drainage facilities (90-120 days; 4-6 workers; activities may include site clearing, grading, tree removal).
- Utilities at McSwain Recreation Area:
    - Water: Water lines, water treatment facilities, irrigation, and water tanks.
    - Power: e.g., overhead and underground power lines, transformers, distribution boxes, control panels.
    - Sewer: e.g., Septic tanks, sewer treatment plants, sewer lines, sewer pump stations.
    - Internet: Install new access to the internet through cellular broadband, satellite, or fiber optics.

Figure 2-12. McSwain Recreation Area Existing Conditions and Recreation Area Boundaries

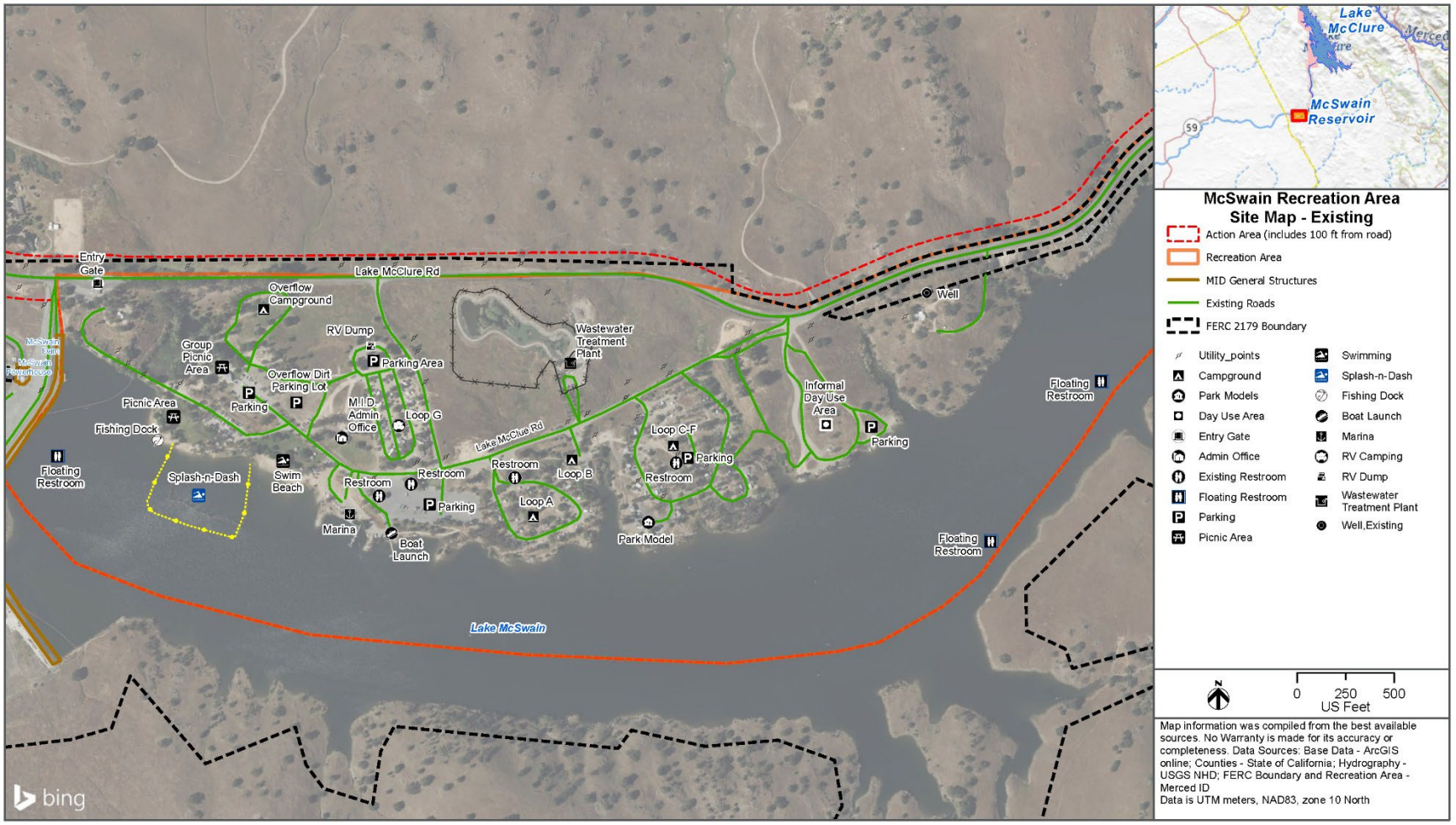
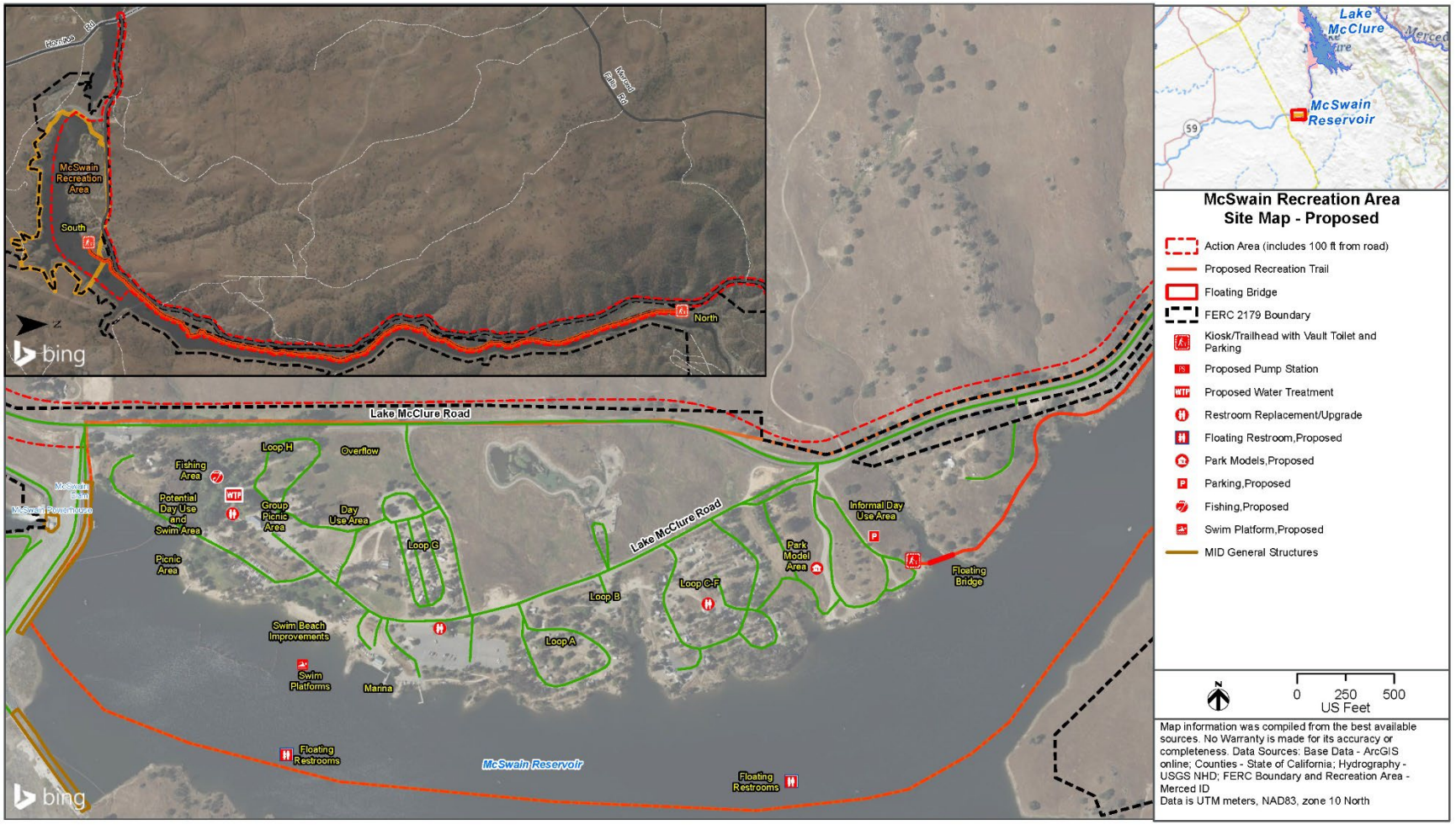


Figure 2-13. McSwain Recreation Area Proposed Improvements



2.3.7 Merced River Project Sites - Operations and Maintenance

Merced ID will continue to be responsible for the annual maintenance, rehabilitation, and replacement of all the Proposed Project recreation facilities at Lake McClure and McSwain Reservoir. Merced ID intends to use its Parks Department for the administration, operation, and maintenance of the recreation facilities, including the lake moorings and marina facilities operated by its subsidiary, Twin Lakes Management Company, Inc.

Operational Maintenance Activities

Operational maintenance activities keep permanent assets in an acceptable condition and include repairs, painting, replacement of minor parts and minor structural components. Operational maintenance, or reconditioning, neither materially adds to the value of the property nor appreciably prolongs its life. Operational maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. The work serves only to keep the facility in an ordinary, efficient operating condition.

Examples of regular or routine operational maintenance activities include, but are not limited to interior painting, repair of broken windows, light bulb replacement, cleaning, unplugging drains, greasing, servicing, inspecting, oiling, adjusting, tightening, aligning, sweeping and general snow removal. Maintenance activities may include work needed to meet applicable laws, regulations, codes, and other legal directions, such as compliance with the ADA, if the original intent or purpose of the fixed asset is not changed.

Table 2-8 provides a description of Merced ID's operational maintenance activities at the existing recreation facilities. Merced ID may contract for the necessary personnel, equipment, and/or materials to achieve maintenance standards. Further information on operational maintenance procedures is available in Appendix G.

Table 2-8 provides a description of Merced ID's operational maintenance activities at the existing recreation facilities. Merced ID may contract for the necessary personnel, equipment, and/or materials to achieve maintenance standards. Further information on operational maintenance procedures is available in Appendix G.

Table 2-8. Merced ID Operational Maintenance Activities at Recreation Facilities

Maintenance Activity	Frequency
General. Maintain all recreation facilities in good working order. If a structure is deemed unsafe, it will be closed until repairs are completed. Once a facility has been rehabilitated to provide accessibility, clear floor space surrounding constructed features, graded tent pads, and access routes shall be maintained. Developed sites will be free of litter and domestic animal waste. Straighten and replace as needed vehicle barriers and signs.	• During the peak season (Memorial Day – Labor Day holiday weekends), all facilities will be inspected regularly (daily). • During non-peak season (January up to Memorial Day weekend, after Labor Day weekend-December), all facilities will be inspected regularly depending on the type of structure and level of use.

Maintenance Activity	Frequency
Restrooms. Structures will be sanitary and maintained in good repair. If a structure needs repair, it will be closed until repairs are completed. Keep toilet doors in operating and locking condition. Walkways and access routes to structures will be kept free of obstructions or excess vegetation. Restroom roofs will be maintained clear of debris. Maintain all restroom doors in operating condition. Vault restrooms will be pumped when ¾ full. Grade areas where vault toilets are placed in low spots to keep runoff from filling the vaults.	• During the peak season (Memorial Day – Labor Day holiday weekends), all facilities will be inspected regularly (daily). • During the non-peak season (January up to Memorial Day and after Labor Day through December) when facilities are open, they will be inspected regularly but less frequently as the prime season in line with lower use. • Maintain plumbing and utilities in an operable manner. • Maintain restroom roofs clear of debris prior to opening and as needed. • Repair doors and moving parts as needed. • Vault restrooms will be pumped when ¾ full, and at the end of the season. • Grade area where vault restrooms in low places as needed.
Boat Ramps. The developed boat ramp surfaces are to be kept in good, functional condition and free of debris.	• Developed boat ramps will be inspected for obstacles, deterioration, and other hazards daily while the boat launch facilities are open. • Maintenance and repair will be completed on an as-needed basis.
Boat Docks. Boat dock surfaces, hardware, and other components (e.g., bumper strips, cleats, railings) will be maintained to provide safe and effective use.	• Boat docks will be inspected for wear, obstacles, and damage daily while the boat launch facilities are open. • Maintenance and repair will be completed on an as-needed basis. • Boat docks will be lowered as needed as the season progresses to ensure the docks remain in the water and usable for launching/docking boats.
Campsites and Picnic Sites. These sites will be inspected for cleanliness, damage, and vandalism. Tables will be sturdy, functional, and painted. Displaced tables will be returned to the designated location. Tables that may have "sunk" will be brought up to the level of the surrounding ground and positioned on level ground. Grills will be in good, functional condition. Developed sites will be free of litter and domestic animal waste. Nails, ropes, and wire will be removed from trees whenever found. Ashes will be disposed of in a proper waste receptacle and not scattered at the site.	• Campsites and picnic sites will be inspected daily during the peak season (Memorial Day – Labor Day holiday weekends); and weekly or as needed during the remaining months the facilities are open to the public. • Maintenance and repair will be completed on an as-needed basis.
Litter and Trash Collection. The recreation areas and sites with trash containers will be kept clean. Garbage does not exceed the capacity of the containers. Remove all litter observed within site boundaries. Particular attention should be paid to the removal of observed glass, bottles, cans, and similar objects that might cause injury to site visitors.	• Trash containers at developed recreation sites will be emptied at a frequency that does not encourage animal encroachment, does not overflow, and does not emit offensive odors when the recreation facilities are open. • Dumpsters will be emptied as needed. When sites are closed during the peak or non-peak season, the dumpsters will be emptied. • Litter within site boundaries (not in trash containers) will be collected daily.
Signs, Information Kiosks, Bulletin Boards and Fee Stations. Information kiosks and boards will look professional, uncluttered, and contain appropriate current/seasonal information. Signs, information kiosks/boards, site markers and fee stations are well maintained and neatly arranged.	• Signs, information kiosks/boards and fee stations will be inspected weekly during the peak season (Memorial Day – Labor Day holiday weekends); and intermittently during the remainder of the year. • Inspect all signs annually and paint as needed. Depending upon the sign material, other treatments may be needed instead of painting. • Maintenance and repair will be completed on an as-needed basis. • Placing and maintaining conspicuous signs throughout the facilities shall be done regularly throughout the open season.

Bagby RA

During operations, Merced ID would provide and maintain public access during the whitewater boating season unless Merced ID deems the access road unsafe for public use.

Following acceptance of a new hydropower license, annual trail maintenance along the north shoreline would maintain the Old Railroad Grade Trail remnants. Trail maintenance does not currently occur at this location. Annual maintenance would begin in year 1 following Merced ID's acceptance of a new Merced River Project hydropower license. Per the license application, within the first year, Merced ID would begin maintaining the existing railroad grade remnants (trail) from the Project Boundary to the Bagby Trailhead annually. Once Lake McClure recedes to 830 ft elevation, Merced ID would clear the trail of fallen debris and siltation. The trail segment, which enters the "Wild Classification" of the Merced Wild and Scenic River plan at Sherlock Creek area (in Bagby Recreation Area), would be maintained by non-mechanical means.

Horseshoe Bend RA

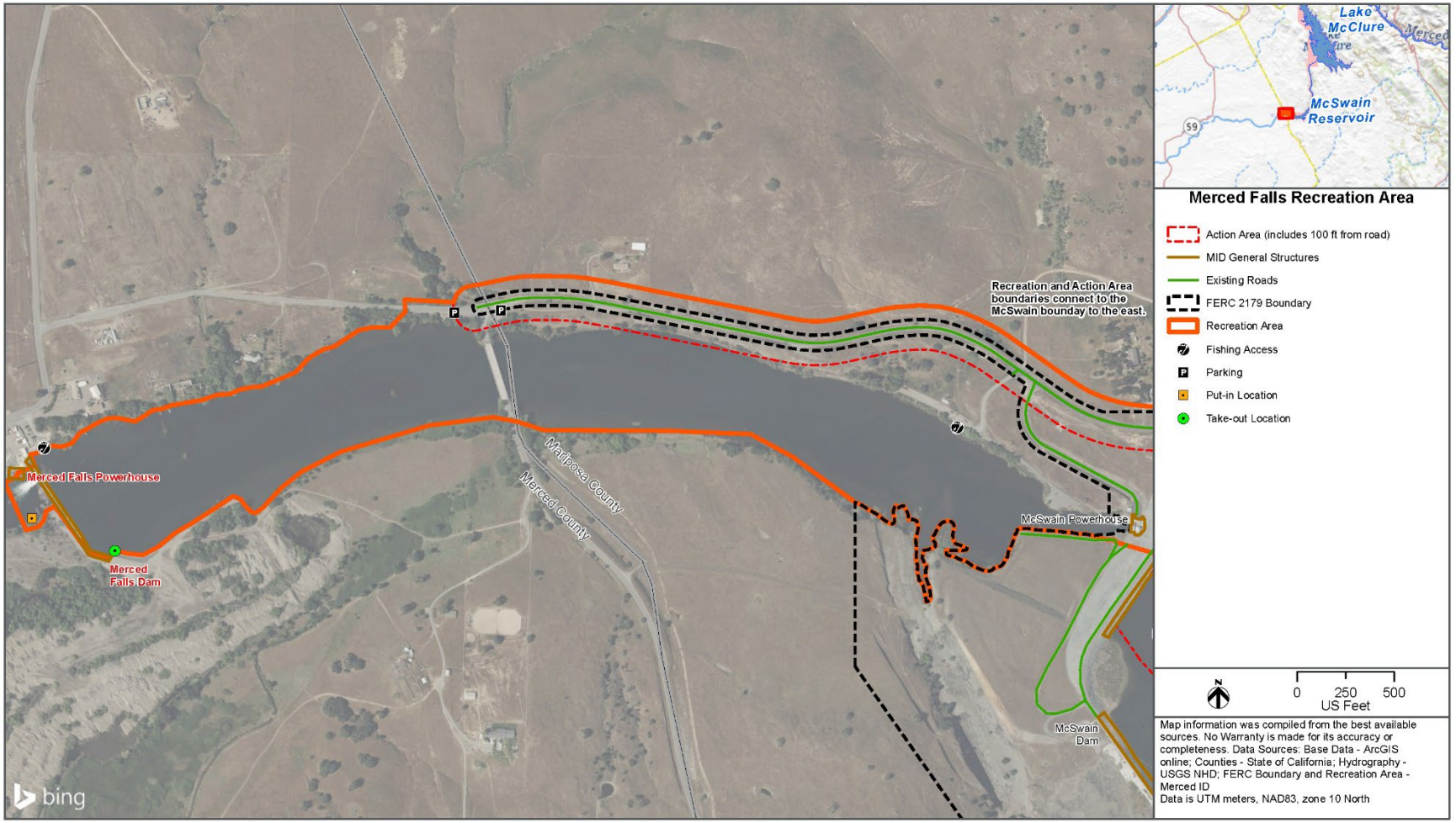
During operations, Merced ID would maintain areas that are currently used by private clubs, including the Mother Lode Sky Riders Hang Gliding Club and the Horseshoe Bend Field Archery Club. This maintenance would include removing all litter and trash from the site after use by the club and compliance with BLM fire restrictions.

2.3.8 Merced Falls Project Recreation Area

2.3.8.1 Merced Falls Existing Conditions

Figure 2-14 presents the existing and proposed recreation area facilities for Merced Falls Recreation Area. Primary circulation highways and roads used for recreation access that would also be used for construction and maintenance access to the area, are shown in Figure 2-1. Each of the primary features is described below, along with operations and maintenance activities proposed for this recreation area specifically.

Figure 2-14. Merced Falls Recreation Area Existing Conditions and Recreation Area Boundaries



River's Edge Fishing Access Area

River's Edge Fishing Access is on the northwestern corner of the impoundment, near the Merced Falls Powerhouse.

Merced Falls Fishing Access Area and Boat Launch

Merced Falls Fishing Access Area is on the impoundment's northeastern side.

Anglers Trail

Angler's Trail runs along the northern edge of the impoundment. It runs from the informal parking area north of the impoundment and east of Hornitos Road East to Merced Falls Fishing Access.

Informal Canoe/Kayak Portage Trail

The informal portage trail runs from the take-out location in the southwestern corner of the impoundment to an informal put-in location just below Merced Falls dam. This trail allows continued access to the Merced River west of the impoundment.

Informal Parking Areas

There are two informal parking areas north of the impoundment, one on either side of Hornitos Road. These are gravel pull-offs on the shoulder of the access road.

Fish Stocking Plan

Merced ID would stock 11,000 adult-sized rainbow trout at the Merced Falls impoundment for the first two years after FERC license issuance, during which time a Fish Stocking Plan would be developed to maintain fishing as a sustainable recreational activity at the impoundment.

Merced Falls Recreation - Operations and Maintenance

Merced ID does not propose upgrades or improvements at this recreation area beyond what is included in the Merced Falls Project hydropower license application.

2.3.9 Utilities Master Plan Parameters (Programmatic)

Before proposed utilities-related projects were implemented at recreation areas, Merced ID would create a *Master Utilities Plan* including each recreation area at Lake McClure and McSwain Reservoir. This *Master Utilities Plan* is currently being developed by Merced ID and will evolve as Merced ID identifies funding sources for upgrades and new facilities, which will allow for site-specific design and planning.

Improvements governed by the Master Utilities Plan would include installing, expanding, and/or replacing utilities necessary to support construction and/or future operations of individual projects at the Lake McClure and McSwain Reservoir recreation areas. Proposed improvements to existing and new underground utility lines may include, but would not be limited to:

- Water pipelines, treatment systems, intake docks and ancillary facilities – for such uses as restrooms, potable water, splashpads, off-lake swim areas, concessions, and water faucets at campground and day use areas.

- Wastewater pipelines and treatment facilities – including sewerage, flush and vault toilets, RV dump sites, lift stations, septic tanks, leech fields, and on-site wastewater treatment options. This infrastructure would also manage disposal of refuse from fish cleaning stations located at boat launches.
- Electrical service lines and ancillary facilities – updating the power capacity of existing electrical drops to 30 to 50 amps to support upgraded and replaced campground facilities, electric vehicle chargers, and other utilities, including aerators, water intakes and generators. New electrical drops and service lines would be installed where proposed facilities are new (park model cabins or new concession locations) or expanding (marina upgrades). Existing transformers, distribution boxes and control panels would be upgraded, and new ones installed, as necessary, to support new and expanded facilities.
- Electrical upgrades would also involve modernization of communication infrastructure, including undergrounding of fiber optic cable or adding satellite service to enable high speed internet access for the recreation areas. This would also facilitate the implementation of Supervisory Control and Data Acquisition (SCADA) systems to enable remote data collection, security systems, parks payment systems, mobile maintenance, and software programs.
- Accessing or installing these utilities would usually require open trenching, with subsequent restoration of ground to previous or better conditions. Whether existing assets would be replaced or rehabilitated is determined by which option is more financially and environmentally effective. Replacement is usually preferred when an asset or component nears or has exceeded its useful life.

As noted previously, utility corridors would primarily occur within existing or new road alignments; however, where not possible, appropriate avoidance, minimization and mitigation measures would be applied (Section 3.3 Biological Resources). Aboveground upgrades to existing and addition of new facilities would include, but are not limited to:

- Electricity
    - New drop boxes and potential new overhead lines to new facilities (i.e., park model cabins, concessionaire connections).
    - Addition of new EV charging stations at some parking areas (see individual Recreation Area descriptions).
- Water
    - Installation, upgrade, and replacement of existing water infrastructure, to include:
        - Pumps
        - Intakes for off-lake swim areas; these are moveable and non-permanent intakes that require water levels to be high enough to pump to swim areas
        - Water storage tanks
        - Water treatment systems
        - Well pumps
        - Irrigation systems

        - Improvements to existing and new bathrooms to connect to water lines (where appropriate)
    - Increases in volume for tanks and pumps may occur when necessitated by campground expansion and additional of new facilities
- Sewerage
    - Installation, upgrade, and replacement of existing sewer infrastructure, to include:
        - Any above ground sewage collection facilities, including pump stations
        - Improvements to existing and new bathrooms to connect to wastewater lines (where appropriate)
        - Replacing pit toilets at primitive sites with vault systems
        - Sewer treatment plants
        - RV dump sites
        - Effluent dispersal irrigation systems at sewage treatment plants
    - Increases in volume for collection facilities and pumps may occur when necessitated by campground expansion and additional of new facilities
- Cable/Internet/Telephone

2.3.10 Construction Best Management Practices

The following BMPs would be implemented during any construction activities associated with the Proposed Project, mainly with the recreation facilities, to minimize impacts on air quality:

- Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high wind (over 15 miles per hour [mph]).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.
- Haul trucks shall maintain at least two feet of freeboard.
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.
- Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours.
- Limit the area under construction at any one time.

CHAPTER 3 ENVIRONMENTAL SETTING, IMPACT ANALYSIS, AND MITIGATION

Consistent with the CEQA Guidelines, Appendix G Environmental Checklist, this chapter presents an evaluation of impacts that could result from implementation of the Proposed Project for 20 environmental factors (resource areas). Section 3.1 provides a framework for the Proposed Project's CEQA analysis, including a general overview of the Proposed Project baseline, referred to in CEQA as the Environmental Setting (Section 3.1.1); an explanation of the general methodology used in this PEIR for assessing Project impacts (Section 3.1.2); identification of those resource areas that were evaluated and found to have no potential impacts based on the scope and nature of the Proposed Project activities (Section 3.1.3); and the organization of the remaining resources' analysis (Section 3.1.4). Sections 3.2 through 3.11 are the individual assessments for those resource areas carried through the PEIR, including descriptions of environmental setting, regulatory setting, method of analysis, impact analysis, proposed mitigation measures (if applicable), and an impact summary table specific to that individual resource area.

3.1 Framework for Analysis

3.1.1 Environmental Setting

In Sections 3.2 through 3.11, the effects of Proposed Project implementation are compared with existing baseline physical conditions, referred to in this document as the environmental setting, as described under each resource area. Use of the existing resource-specific environmental setting provides a basis for comparison to assess the impacts of the Proposed Project in accordance with CEQA requirements. The baseline year for the Proposed Project is 2024, which aligns with the release of the Notice of Preparation for the Proposed Project on July 9, 2024. As this PEIR will be incorporated by reference into a separate 2025 CEQA Supplement for the Merced River Project and Merced Falls Project FERC Relicensing Applications, use of this 2024 baseline also assists in updating analyses that had been performed nearly a decade ago during FERC's NEPA process, as relates to the potential for physical disturbance during proposed construction and operation activities at the recreation areas. The intent of this document is to give the public and decision makers "the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts" (CEQA Guidelines Section 15125 (a)).

Regional Environmental Setting

As discussed in Section 2.1 Project Location, the Proposed Project is mostly within Mariposa County, with a minor area in Merced County downstream of Merced Falls Dam that is part of the Proposed Project buffer area (Figure 2-1). Mariposa County is in the Sierra Nevada region in central California and bordered by Tuolumne County to the north and east, Madera County to the south, Merced County to the southwest, and Stanislaus County to the west. It is mountainous and includes National Forests and part of Yosemite National Park. The Proposed Project is at the westernmost extent of Mariposa County.

Elevation in Mariposa County ranges from about 300 feet above sea level on the county's western edge to over 10,000 feet above sea level in the mountainous eastern range.

Mariposa County is largely rural, with a 2020 U.S. Census population of 17,131 in a county with a land area of approximately 1,449 square miles. The largest community in Mariposa County is Lake Don Pedro, which falls within both Mariposa and Tuolumne counties, with a 2020 U.S. Census population of 1,765. Mariposa, the county seat, had a 2020 U.S. Census population of 1,159. There is little urban development in this part of the county, and a large amount of the land is state and federally owned. The Mariposa County General Plan intends to guide development to maintain the rural lifestyle and spectacular vistas found throughout Mariposa County. There is little permanent habitation in Mariposa County; however, Yosemite National Park, with Yosemite Valley as its main attraction, makes the county an international destination. The Merced River flows through both the Yosemite Valley and the Proposed Project footprint. However, these two areas are geographically distant and serve different users, with Yosemite Valley drawing national and international visitors, while the recreation areas at Merced ID serve primarily local and regional travelers. There is little permanent habitation in Mariposa County; however, Yosemite National Park, with Yosemite Valley as its main attraction, makes the county an international destination. The Merced River flows through both the Yosemite Valley and the Proposed Project footprint. However, these two areas are geographically distant and serve different users, with Yosemite Valley drawing national and international visitors, while the recreation areas at Merced ID serve primarily local and regional travelers.

This regional setting applies to all resource areas discussed in Section 3.2 Air Quality through Section 3.11 Wildfire. In addition, each of the resource sections includes a detailed description of the environmental setting specific to that resource and defines the study area used in the evaluation.

3.1.2 General Assessment Methodology

Determining Significance under CEQA

A CEQA environmental review focuses on the potentially significant environmental effects of the Proposed Project. As defined in CEQA Guidelines Section 15382, a “significant effect on the environment” is “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance” as compared to the environmental setting defined in the CEQA analysis. “An economic or social change by itself would not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether a physical change is significant (CEQA Guidelines Section 15382).”

In evaluating the significance of the environmental effect of a project, the CEQA Guidelines require the lead agency to consider direct physical changes and reasonably foreseeable indirect physical changes in the environment that may be caused by the project (CEQA Guidelines Section 15064[d]). A direct physical change in the environment is a change in the physical environment that is caused by, and immediately related to, the project (CEQA Guidelines Section 15064[d][1]). An indirect physical change in the environment is a change in the physical environment that is not immediately related to the project but is a reasonably foreseeable potential impact that may be caused by the project (CEQA Guidelines Section 15064[d][3]).

Once the environmental setting has been defined, the next step in the CEQA analysis is determining the significance of environmental impacts that corresponds with implementation of a project (CEQA Guidelines Section 15064). To accomplish this, a CEQA analysis establishes “thresholds of significance.” Thresholds of significance are identifiable, quantitative, qualitative, or performance

levels for a particular environmental effect, whichever is most applicable to each specific type of environmental impact (CEQA Guidelines Section 15064.7[a]). A threshold of significance for a given environmental impact defines the extent of change from existing conditions (level of impact) at which the lead agency will consider the impact to be significant and therefore will require further analysis and mitigation. For impacts that do not meet their respective thresholds of significance, the lead agency will consider these impacts less than significant and therefore will require no further action.

As such, Merced ID, as lead agency under CEQA, established thresholds of significance for each resource area, consistent with CEQA Guidelines Appendix G, to determine the significance of reasonably foreseeable potential impacts of construction, operation, and maintenance of the Proposed Project. As necessary, the CEQA Guidelines Appendix G checklist was augmented to ensure that all potential impacts of the Proposed Project are addressed. These significance threshold criteria were used by Merced ID to determine if there is the potential for an adverse physical environmental impact from implementation of the Proposed Project, and if so, whether the magnitude of the impact would be significant.

The following terminology is used in this PEIR to describe the various levels of environmental impacts that could be associated with the Proposed Project:

- **No Impact:** No impact indicates that the construction, operation, and maintenance of the Proposed Project would not have a direct or indirect effect on the environment. It means no measurable or observable change from existing conditions would occur. This impact level does not require mitigation.
- **Less than Significant Impact:** An impact is less than significant if the analysis concludes that the implementation of the Proposed Project, while it may affect the environment, would not have an impact that exceeds the applicable significance threshold criteria. This impact level does not require mitigation, even if feasible, under CEQA.
- **Significant Impact:** A significant impact is defined by Public Resources Code Section 21068 as one that would cause “a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project.” Levels of significance can vary by project, based on the change in the existing physical conditions. Under CEQA, mitigation measures or alternatives to the project must be provided, where feasible, to reduce the magnitude of significant impacts.
- **Significant and Unavoidable Impacts:** A significant and unavoidable impact is one that would result in a substantial or potentially substantial adverse effect on the environment that cannot be justifiably reduced to a level that is less than significant, even with implementation of feasible mitigation measures.

Under CEQA, a project with significant and unavoidable impacts could proceed, but the lead agency would be required to prepare a “statement of overriding considerations” in accordance with CEQA Guidelines Section 15093, explaining why the lead agency will proceed with the project despite the potential for significant impacts.

Mitigation Measures

CEQA Guidelines Section 15126.4(a)(1) states that an EIR “will describe feasible measures which could minimize significant adverse impacts.” Mitigation measures identified in this PEIR were developed during the analysis and designed to reduce, minimize, or avoid potential environmental impacts associated with construction, operations, and maintenance of the Proposed Project. Since

measures may apply to multiple resource areas, they are labelled by the resource area where they are first defined, so full descriptions can be easily located in this PEIR. Full details for each mitigation measure are provided in the resource section where it is first applied; summaries and a reference to where the details can be found will be included in any subsequent resource section that applies that measure. The description of a mitigation measure states which specific Proposed Project activity the measure applies to.

3.1.3 Resources Not Impacted

As noted, CEQA Guidelines Appendix G provides a checklist for analyzing a project's environmental impacts. This checklist is divided into sections, each of which addresses a specific environmental factor (resource area). During the preparation of this EIR, it was determined that several environmental factors addressed in the Appendix G checklist did not require more detailed analysis, as the Proposed Project would have no adverse effects determined to be significant. Resources not discussed in detail in this PEIR include aesthetics and visual resources, agriculture and forestry resources, energy, land use and planning, mineral resources, noise, population and housing, public services, transportation, and utilities and service systems. Explanations as to why these environmental factors or resources were not analyzed further in this EIR are provided below.

Aesthetics and Visual Resources

The aesthetics and visual resources section of a CEQA document typically includes an assessment of the potential for the Proposed Project to have a substantial adverse effect on designated scenic vistas, state scenic highways, and designated scenic resources in an area, such as conservation and open space areas, by damage to the viewshed or by introduction of new sources of substantial light or glare that would adversely affect views in the area. This also includes the potential to substantially degrade the visual character or quality of public views or conflict with applicable zoning and other regulations governing scenic quality. “Public views” are views that are experienced from a publicly accessible vantage point (CEQA Guidelines Appendix G).

The Proposed Project area includes several natural vistas, landscapes, and water resources of substantial visual quality. However, there are no resources designated for resource conservation within the proposed footprint of disturbance. State Route (SR) 49, which crosses the Merced River at Bagby, the easternmost recreation area in the Proposed Project footprint, is eligible to be designated as a scenic highway but is not officially designated as such. A portion of the Merced River upstream of SR 49 is designated a Wild and Scenic River; however, the designated portion does not extend to SR 49, ending just upstream of Lake McClure. While the proposed pedestrian trail at Sherlock Creek would cross the Merced River upstream of SR 49 (Figure 2-5) and could be located within the Wild and Scenic River designated area, the proposed pedestrian bridge would be free-span and would not impact the riverbed. Pedestrian access by trail is consistent with the Upper Merced River’s designation as a Wild and Scenic River. The pedestrian bridge would also not create a significant visual impact upon any vista, landscape, or water resource visible from any of these scenic resources. Further, the Proposed Project consists primarily of small improvements downstream of SR 49; these downstream areas are not included in the Upper Merced River’s viewshed.

Finally, the intent of the Proposed Project is to enhance recreational use of the area by visitors - an intent aided by appealing landscapes visible from the Proposed Project area. Damage to associated vistas, landscapes, or water resources would be counter-productive to the aims of the Proposed Project. Because most of the Proposed Project work would occur within existing recreation areas, it would not affect any adjacent landscapes. Any Proposed Project above-ground projects that could

be constructed adjacent to, but outside of, existing recreation areas would intentionally be designed to avoid visual impacts. As such, the Proposed Project would have no impact on aesthetic and visual resources.

Agriculture and Forestry Resources

The agriculture and forestry resources section typically includes an assessment of the potential for the Proposed Project to have a substantial adverse effect by converting significant criteria farmland to non-agricultural use, conflict with Williamson Act contracts, result in the loss of forest land or conversion of forest land to non-forest use. This also includes the potential to conflict with zoning ordinances and other regulations regulating agriculture and forestry resources when converting agricultural or forestry land to a different use (CEQA Guidelines Appendix G).

The Proposed Project encompasses Nonagricultural or Natural Vegetation, Urban and Built-up Land, and Other Land as designated under the California Department of Conservation's Farmland Mapping and Monitoring Program. The Proposed Project footprint does not include Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, all of which CEQA Guidelines Appendix G groups as "Farmland" for impact analysis. Neither does the Proposed Project footprint encompass or contain forest land or land in a Timberland Production Zone.

Proposed Project activities may include ground disturbance up to and including tree removal; however, all such disturbance would occur on previously disturbed land set aside for recreational use by Merced ID. All land within the Proposed Project's footprint is federally owned and managed by BLM or is owned by Merced ID, under their jurisdiction as an agency licensed under FERC, and would not conflict with zoning ordinances or similar regulations regarding land use. Land within the Proposed Project footprint is not zoned for agricultural use nor is it under an active Williamson Act contract. As such, the Proposed Project would have no impact on Agriculture and Forestry resources.

Energy

The energy resources section typically includes an assessment of the potential for the Proposed Project to have a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The assessment also considers potential conflicts with, or obstructions of, state or local plans for renewable energy or energy efficiency.

The Proposed Project would require energy for construction activities, mainly fuels and possibly electricity for vehicles and equipment. Most of the energy expenditures required by the Proposed Project are limited to transportation, minor surface disturbance, or rehabilitation of infrastructure that is nearing the end of its useful life. Such energy use is typical of such activities and represents a small and temporary increase from current operational and maintenance activities. These energy expenditures are also necessary to install improvements that would prevent adverse environmental impacts from failing infrastructure, including but not limited to fires from failing electrical wiring, septic plumes from failing sewer lines and septic systems, and potential fuel spills from failing fuel tanks. As such, the consumption of energy during the construction of the proposed improvements is not considered wasteful, inefficient, or unnecessary.

The Proposed Project site is collocated with the Merced River Hydroelectric Project and Merced Falls Hydroelectric Project, both of which produce electricity for Merced ID and provide a local and reliable source of sustainable electricity without requiring additional infrastructure. Electricity used in operations would come from these existing sources. Most operational and maintenance projects

would not increase energy consumption above current levels, except for an increase of operational electrical use of camp sites to 30 amperes for campsites or 50 amperes for RVs. This is only relevant when those sites are seasonally occupied and would not significantly alter energy use at the site. Another potential increase in electrical use would be the installation of EV chargers. However, these chargers would include solar panels to provide local, sustainable power; therefore, the EV chargers would not significantly increase power consumption. Based on the above information, the Proposed Project would have no impact on Energy Resources.

Land Use and Planning

The land use and planning section typically includes an assessment of the potential for the Proposed Project to physically divide an established community, or to cause a significant environmental impact due to a conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The Proposed Project area is not located within any established communities and therefore poses no possibility of dividing an established community. Land use designations under the Mariposa County General Plan that border the Proposed Project area are Agriculture/Working Landscape and Natural Resources. The Don Pedro Town Planning Study Area, which encompasses the Barrett Cove and Mack Island Recreation Areas, currently has land uses designated by the Mariposa County General Plan pending completion of a future community plan. All portions of the Recreation Areas located within the Don Pedro Town Planning Study Area are designated either Agriculture/Working Landscape or Natural Resources, consistent with the Mariposa County General Plan. There are residential parcels northeast of Lake McClure between the lake and Coulterville; however, the Natural Resources land use designation around the lake provides a buffer between the lake and those parcels. Further, as the lake provides a natural barrier to the residences, the Proposed Project could not divide them, and implementation of the Proposed Project would not conflict with any of the existing Mariposa County General Plan land use designations.

Only a small portion of the Proposed Project area is within Merced County – the area along the Merced River from the Merced Falls Dam to the Mariposa County line. The Merced County General Plan has designated the land area immediately adjacent to the river as Agricultural and the surrounding land as Foothill Pasture. As no new construction or facilities are proposed in the Merced Falls Dam area, the Proposed Project would have no impact on existing land uses or designations in Merced County. Also, the Proposed Project would not affect any Merced County land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect.

The Proposed Project would have no impact on land use and planning.

Mineral Resources

The mineral resources section typically includes an assessment of the potential for the Proposed Project to cause the loss of availability of a known mineral resource, or to cause the loss of availability of a locally important mineral resource recovery site delineated on a local general, specific, or land use plan.

The California Geological Survey produces Mineral Land Classification studies pursuant to the Surface Mining and Reclamation Act. Mineral Land Classification studies help identify areas with potentially important mineral resources that should be considered in local and regional planning. Based on a review of the California Department of Conservation's (DOC) Mineral Land Classification

interactive map, the Proposed Project is not located within a Mineral Land Classification study area (DOC 2024).

Mariposa County contains part of the mineralized fault belt known as the “Mother Lode,” the historic source of precious metals that started the 1849 Gold Rush. However, Mariposa County currently has only a single active slate quarry with sand and gravel extraction operations; most mines in the County are closed. Further, the DOC found no past or present mineral resources within the Proposed Project footprint. As there are no known mineral resources within the Proposed Project footprint, the Proposed Project would have no impact on mineral resources.

Noise

The noise section typically includes an assessment of the potential for the Proposed Project to generate a substantial temporary or permanent increase in ambient noise levels and excessive groundborne vibration or groundborne noise levels. Also, for projects within the vicinity of an airstrip or airport land use plan or within two miles of any public or public use airport, an assessment of exposure of residents or workers in the Proposed Project area to excessive noise levels is typically conducted. A project is typically considered to have potentially significant noise impacts if noise levels exceed noise regulation standards established by authorities with jurisdiction.

Implementation of the Proposed Project would cause increases in ambient noise and vibration within the Proposed Project area, mainly from temporary construction equipment use. However, vibration increases would primarily be at surface level, and no significant vibration would occur beyond the construction site. Further, there are no permanent residences, or other land uses sensitive to noise or vibration within the area; when disruptive work is being performed at the recreation areas, those areas are closed, and traffic is directed to other recreation areas.

The nearest airports to the Proposed Project area are the Pine Mountain Lake Airport, about 11 miles north of Lake McClure, and the Mariposa-Yosemite Airport about 9 miles southeast of Lake McClure (Google 2023). Neither of these airports is within two miles of the Proposed Project area. Both airports are the subject of comprehensive land use plans; however, the boundaries of neither plan extend to the Proposed Project area. Therefore, noise related to both airports require no further scrutiny under CEQA.

The Noise Element of the Mariposa County General Plan states, “At this time, Mariposa County is not developing a noise exposure inventory….” It notes that the environment is typically below 55 decibels, but that louder sounds, including from chainsaws and tractors, occasionally break that quiet. There is no specific threshold in the Mariposa County General Plan for noise. As noted, recreation areas where disruptive noise levels may occur during construction would be closed during those times. Operational noises associated with Proposed Project facilities would fit within the “rural lifestyle” that the county wishes to preserve, and the Proposed Project area is devoid of sensitive receptors. Therefore, the Proposed Project would have no impact on noise or vibration.

Population and Housing

The population and housing section typically includes an assessment of the potential for the Proposed Project to induce substantial unplanned population growth in an area, either directly or indirectly, or to displace substantial numbers of existing people or housing so as to require the construction of replacement housing elsewhere.

The Proposed Project includes various improvements intended to update and upgrade recreational facilities at Lake McClure and McSwain Reservoir. As they are upgrades to existing campgrounds,

these improvements would at most draw more seasonal users to the recreation areas. This would not engender any substantial population growth beyond the scope of the local plan. In addition, no residential development is proposed, so no direct population growth would occur, and the Proposed Project would not include any commercial, industrial, or institutional development that could indirectly encourage population growth.

The Proposed Project encompasses several recreation areas that include campsites; however, these would serve visitors only. There are no permanent residences within the Proposed Project area; as such, there are no residents or houses that could be displaced by project implementation. In summary, the Proposed Project would have no impact on population and housing.

Public Services

The public services section typically includes an assessment of the potential for the Proposed Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or altered governmental facilities (the construction of which could cause significant environmental impacts) in order to maintain acceptable service ratios, response times, or other performance objectives for the following public services: fire protection, police protection, schools, parks, and other public facilities.

The Proposed Project includes various recreational improvements in a sparsely populated area. Its implementation would improve access to and availability of recreational facilities for residents and visitors. More discussion on this can be found in Section 3.9 Recreation.

Demand on schools and other public facilities would remain unchanged. The Proposed Project area is intended for recreational purposes as designed and does not require school services as a residential community would. Traffic to and from schools would be unaffected under the Proposed Project. The same conditions would apply to other public facilities such as libraries.

The emergency response facilities closest to the Proposed Project area are a CAL FIRE station located in Lake Don Pedro, northwest of the Barrett Cove Recreation Area, and a local fire station in Coulterville, north of the Bagby Recreation Area. Law enforcement service for most facilities would be provided by the Mariposa County Sheriff's Department, with the Merced Falls area being served by the Merced County Sheriff's Department. The main station for the Mariposa County Sheriff's Department is in Mariposa, while the Merced County Sheriff's Department has its main station in Merced.

The Proposed Project is not expected to increase travel times, congestion, or road use. Therefore, access to and from these emergency facilities would not be impaired. It is possible that improving road conditions within the Proposed Project area may make emergency transport more effective and efficient. The likely demand for fire protection and law enforcement agencies with the Proposed Project would not be substantially greater than existing demand. Therefore, the fire and police agencies can accommodate this demand for services without requiring additional personnel or new or expanded facilities. The Proposed Project would have no impact on public services.

Transportation

The transportation section typically includes an assessment of the potential for the Proposed Project to substantially increase hazards due to a geometric design feature including, but not limited to, sharp curves or dangerous intersections, or incompatible uses, or to result in inadequate emergency access. This also applies to conflicts with plans, ordinances, or policies addressing the circulation system and inconsistency with CEQA Guidelines Section 15064.3(b), which provides criteria for

performing transportation impact analysis using Vehicle Miles Traveled (VMT). VMT has become the preferred metric, in part due to its capability of being used to assess project impacts on greenhouse gas emissions, which were a primary concern of the State legislation that encouraged the use of VMT.

The Proposed Project would make no significant changes to road design, and as a result would not increase hazards or diminish emergency access, as discussed in Public Services, previously. The improvements that the Proposed Project would implement could potentially increase traffic to Merced ID's Recreation Areas seasonally, but any such increase in camping capacity and subsequently traffic would be minor. Concern regarding VMT applies mainly to urban uses such as residential, office, and mixed use, and to a lesser extent commercial and industrial development. The Proposed Project addresses recreational facilities, which due to their seasonal activity and location away from urban areas are not expected to substantially generate traffic, and consequently VMT.

The traffic generated by the Proposed Project improvements would be of the same composition as existing traffic in the area. No vehicles that would be potentially incompatible with the existing traffic would be introduced, other than construction equipment that may be on the local roads during construction but would stop once the proposed improvements are completed. Based on the above information, the Proposed Project would have no impact on transportation.

Utilities and Service Systems

The utilities section typically includes an assessment of the potential for the Proposed Project to impact the sustainability and capacity of water supply and capacity for wastewater treatment. It also assesses solid waste generated by the Proposed Project as related to capacity and solid waste reduction goals, along with compliance with relevant management and reduction statutes and regulations. As part of this analysis, the utilities section also considers whether implementation of the Proposed Project would require the construction or relocation of new infrastructure to support the aforementioned utilities, as well as storm water drainage, electric power, natural gas, or telecommunications, when that process of construction or relocation could have significant environmental effects.

The Proposed Project would require the construction, rehabilitation, and relocation of new and existing utilities infrastructure. However, all but two elements of such infrastructure are within existing recreation areas and the FERC boundary operated by Merced ID. The only pieces of infrastructure that span multiple recreation areas are the transmission lines that carry electricity throughout and beyond the Proposed Project footprint. As these are owned and operated by PG&E, they fall outside the jurisdiction of Merced ID. There are also existing and proposed vault toilets throughout Lake McClure and along bicycle and pedestrian trails. As this infrastructure is discrete and specific to the Proposed Project footprint, and given the location of the Proposed Project area, there is no possibility that it would impact infrastructure in adjacent or surrounding municipalities.

Work on new or existing infrastructure is included in the description for the Proposed Project. This includes the update and rehabilitation of such infrastructure facilities to maintain functionality and safety as they approach the end of their useful life. All utilities-based construction would occur within previously disturbed footprints and would have no impacts extending beyond these footprints.

Water infrastructure within the Proposed Project footprint is reliant on Lake McClure and McSwain Reservoir for potable water. As these are large reservoirs that are managed by Merced ID, it is highly unlikely that the associated recreation areas could exhaust or even significantly alter the water

supply available to local infrastructure. Related to water infrastructure for the Proposed Project, electrical resources are tied to the hydroelectric dams associated with the Proposed Project and the impact of the Proposed Project improvements on electricity infrastructure would be minimal.

Wastewater treatment is handled discreetly by recreation area, or by management of isolated vault toilets. The Proposed Project includes rehabilitation and expansion of these facilities to capacity of expected use. There would be no impact on wastewater treatment facilities.

The Proposed Project includes proposals to track, quantify, and manage solid waste, including fishing line dump stations more effectively. As the Proposed Project is not expected to induce significant additional use, it would not significantly increase the generation of solid waste.

The Proposed Project will include minor updates to telecommunication infrastructure; however, these improvements would occur simultaneously with other construction and undergrounding of utilities and would occur within the parameters of Merced ID's planned utilities expansions. No natural gas utilities are required by the Proposed Project and no demand for them would be induced. Overall, the Proposed Project would have no Impact on Utilities and Service Systems.

3.1.4 Structure of the Environmental Impact Analysis

The remaining environmental factors (resource areas) that have been carried through this PEIR and are fully assessed in the remainder of this chapter include:

- Section 3.2 Air Quality
- Section 3.3 Biological Resources
- Section 3.4 Cultural Resources
- Section 3.5 Geology, Soils, and Paleontological Resources
- Section 3.6 Greenhouse Gas Emissions
- Section 3.7 Hazards and Hazardous Materials
- Section 3.8 Hydrology and Water Quality
- Section 3.9 Recreation
- Section 3.10 Tribal Cultural Resources
- Section 3.11 Wildfire

As noted previously, Sections 3.2 through 3.11 each include the same suite of environmental setting, analyses, and findings information broken down into the following subsections:

- **Environmental Setting:** Provides an overview of the existing baseline physical conditions of an environmental resource in the study area at the time of publication of the NOP that could be affected by implementation of the Proposed Project. A definition of the resource-specific study area is also included in this section.
- **Regulatory Framework:** Provides an overview of the federal, state, regional, and local laws, regulations, policies, and plans relevant to the analysis of potential impacts related to each environmental factor or resource.
- **Method of Analysis:** Outlines the analysis methodology (quantitative and/or qualitative) used to assess the Proposed Project's potential to impact a resource area. This section also

identifies the sources of data used for the analysis and the threshold of significance criteria used to determine the significance of potential impacts.

- **Impact Analysis:** Provides a discussion of impacts associated with implementation of the Proposed Project. For each potential impact, a significance determination is made (that is, no impact, less than significant, less than significant with mitigation, or significant and unavoidable). If required, feasible mitigation measures are identified to reduce significant impacts.
- **Impacts Summary:** A table summarizing the impact significance determinations for each criterion in that resource area.
- **References:** Provides the references relevant to and cited in the PEIR resource area section.

3.2 Air Quality

This section describes the regulatory and environmental setting related to air quality in the Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes all of Mariposa County (County) because this is the area for which the Mariposa County Air Pollution Control District (MCAPCD) manages air quality to meet federal and state air quality standards.

3.2.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential air quality impacts and identifying mitigation. The air quality standards within the Study Area are regulated by the local policies and regulations of the MCAPCD and County.

Federal

Federal Clean Air Act and National Ambient Air Quality Standards

The Federal Clean Air Act (FCAA) is the primary federal law governing air quality. The FCAA is regulated by the United States Environmental Protection Agency (USEPA), which sets standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS have been established for six criteria air pollutants that have been linked to potential health concerns: ozone (O_3), carbon monoxide (CO), inhalable particulate matter 10 micrometers and smaller (PM_{10}), fine particulate matter 2.5 micrometers and smaller ($PM_{2.5}$), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Additionally, national standards exist for lead (Pb). The NAAQS are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. The federal regulatory schemes also cover toxic air contaminants (TACs).

The FCAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (an area that was previously nonattainment and is currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in Table 3.2-1.

The FCAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). USEPA is responsible for implementing the programs established under the FCAA, programs such as establishing and reviewing the federal ambient air quality standards and judging the adequacy of SIPs. If a state contains areas that violate the national standards, the FCAA requires the State to revise its SIP to incorporate additional control measures to reduce air pollution. USEPA has authorized States such as California with air programs that meet or exceed federal standards to implement many of the federal programs while retaining an oversight role.

Table 3.2-1. California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
			Primary[3]	Secondary[4]
O_3 [5]	1 hour	0.09 ppm	---	Same as Primary Standard
	8 hours	0.07 ppm	0.07 ppm	
CO	1 hour	20 ppm	35 ppm	---
	8 hours	9 ppm	9 ppm	---
	8 hours (Lake Tahoe)	6 ppm	---	---

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
			Primary[3]	Secondary[4]
PM_{10} [6]	24 hours	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual	20 µg/m^3	---	
$PM_{2.5}$ [6]	24 hours	---	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
NO_2 [7]	1 Hour	0.18 ppm	100 ppb	---
	Annual Arithmetic Mean	0.03 ppm	0.053 ppm	Same as Primary Standard
SO_2 [8]	1 Hour	0.25 ppm	75 ppb	---
	3 Hours	---	---	0.5 ppm
	24 Hours	0.04 ppm	0.14 ppm	---
	Annual Arithmetic Mean	---	0.03 ppm	---
Pb[9, 10]	30-day Average	1.5 µg/m^3	---	---
	Calendar Quarter	---	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-month Average	---	0.15 µg/m^3	
Visibility Reducing Particles[11]	8 Hours	See Note 11	No National Standards	
Sulfates	24 Hours	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm		
Vinyl Chloride[9]	24 Hours	0.01 ppm		

Source: CARB 2016

Notes: O_3 = ozone; CO = carbon monoxide; PM_{10} = particles of 10 micrometers and smaller; $PM_{2.5}$ = particles of 2.5 micrometers and smaller; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; Pb = lead; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.

[3] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[4] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[5] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[6] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[7] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[8] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[9] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[10] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[11] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Non-Road Diesel New Engine and Fuel Standards

The USEPA has adopted multiple tiers of emission standards for non-road (or off-road) diesel engines. The non-road standards cover mobile non-road diesel engines of all sizes used in a wide range of construction, agricultural and industrial equipment. The first federal standards, Tier 1, were adopted in 1994. Tier 2 standards were adopted in 2001, Tier 3 in 2006, and final Tier 4 standards in 2014. The federal emission standards for non-road diesel engines are established in advancing tiers that progressively become more stringent (i.e., the higher the tier, the lower the emissions). Currently, the most stringent is Tier 4. The Tier 4 emissions standards have more stringent nitrogen oxide (NO_X), particulate matter, and hydrocarbon limits than the lower tiers. The CO emission limits for Tier 4 standards remain unchanged from the Tier 2 and Tier 3 standards.

National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants are stationary source standards for hazardous air pollutants (40 CFR 63). Hazardous air pollutants are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects (USEPA 2024a).

State

California Clean Air Act and California Ambient Air Quality Standards

In California, the California Clean Air Act (CCAA) is administered by the California Air Resources Board (CARB) at the state level and by the air quality management districts and air pollution control districts at the regional and local levels (air districts). The CARB is responsible for meeting the state requirements of the FCAA, administering the CCAA, establishing the California Ambient Air Quality Standards (CAAQS), and establishing motor vehicle emissions standards. The CCAA requires all air districts in the state to endeavor to achieve and maintain the CAAQS.

CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications. CARB oversees the functions of air districts, which in turn administer air quality activities at the regional and county levels. The state standards are summarized in Table 3.2-1.

The CCAA requires CARB to designate areas in California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

California State Implementation Plan

The 1990 amendments to the FCAA set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. The promulgation of the national 8-hour ozone standard and the fine particulate matter standards in 1997 resulted in additional statewide air quality planning efforts. In response to new federal regulations, SIPs began to address ways to improve visibility in national parks and wilderness areas. SIPs are not single documents, but rather a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls.

Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIPs. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to USEPA for approval and publication in the Federal Register. CFR Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items that are included in the California SIP.

California Air Toxics Program

California regulates TACs primarily through Assembly Bill (AB) 1807, Toxic Air Contaminant Identification and Control Act (Tanner Act) and AB 2588, Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Hot Spots Act). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate best available toxics control technology to minimize emissions.

Under the Hot Spots Act, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Advanced Clean Cars Program

In January 2012, the CARB approved a new emissions control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero emission vehicles into a single packet of standards called Advanced Clean Cars. The Advanced Clean Cars Program includes the Zero Emission Vehicle Program, which is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles.

In-Use Off-Road and On-Road Diesel Fueled Fleets Regulation

On July 26, 2007, CARB adopted a regulation to reduce diesel particulate matter (DPM) and NOx emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California. All self-propelled off-road diesel vehicles 25 horsepower or greater used in California (such as bulldozers, loaders, backhoes, and off-highway trucks) and most two-engine vehicles (except on-road two-engine sweepers) are subject to this regulation. This regulation is designed to reduce DPM and NOx emissions from off-road diesel vehicles by retiring, replacing, or repowering older engines, or installing diesel exhaust retrofits.

Vehicles or engines subject to this regulation must limit their idling to five minutes. The idling requirements are specified in Title 13 of the California Code of Regulations.

Furthermore, Title 13 CCR Chapter 10 § 2485 Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, restricts on-road diesel-powered commercial motor vehicles with a gross vehicle rater of greater than 10,000 pounds from idling more than five minutes.

Truck and Bus Regulation

CARB's Truck and Bus Regulation requires all on-road and off-road diesel vehicles that operate in California to reduce TAC emissions from their exhaust. The Truck and Bus Regulation affects individuals, private companies, and federal agencies that own diesel vehicles with a Gross Vehicle Weight Rating greater than 14,000 pounds. By January 1, 2023, all trucks and buses will be required to have 2010 or newer model year engines to reduce particulate matter and NOx emissions. To help ensure that the benefits of this regulation are achieved, starting January 1, 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles.

Health Impacts of Regional Criteria Air Pollutants

In December 2018, the California Supreme Court released a decision in *Sierra Club v. County of Fresno*, 6 Cal. 5th 502, also known as the Friant Ranch Case, finding that CEQA requires that a connection be drawn between project emissions and human health impacts.

As explained in the amicus curiae brief submitted by the San Joaquin Valley Air Pollution Control District for the Friant Ranch case, air district significance thresholds were set at emissions levels tied to the region's attainment status; they are emissions levels at which stationary pollution sources permitted by air districts must offset their emissions and CEQA projects must use feasible mitigation measures, and they are not intended to indicate any localized human health impact that a project may have. Therefore, a project's exceedance of the air district's mass regional emission thresholds does not necessarily indicate that the project would cause or contribute to the exposure of sensitive receptors to ground-level concentrations of ozone greater than health-protective levels.

As suggested in the amicus curiae brief submitted for the Friant Ranch case, given the complexity of ozone formation and the current state of environmental science modeling, it is infeasible to determine whether, or the extent to which, a single project's emissions of precursors, i.e., NO_X and reactive organic gas (ROG), would result in the formation of secondary ground-level ozone, and to identify the geographic and temporal distribution of such secondary formed emissions. Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by project-related NO_X or ROG emissions on the local (project) level. Therefore, it is infeasible to connect ozone precursor emissions at a project level to ozone-related health impacts.

Local

Existing Ambient Air Quality

CARB collects ambient air quality data through a network of air monitoring stations throughout the state. The nearest ambient air quality monitoring stations to the Proposed Project are the Jerseydale and Yosemite Village-Visitor Center monitoring stations. The Jerseydale monitoring station is located approximately 20 miles southwest of the Proposed Project Area and the Yosemite Village-Visitor Center monitoring station is located approximately 32 miles northwest of the Proposed Project Area. The Jerseydale station monitors O_3. The Yosemite Village-Visitor Center station monitors PM_{10} and $PM_{2.5}$.

Table 3.2-2 summarizes data for criteria air pollutant levels from the Jerseydale and Yosemite Village-Visitor Center monitoring stations for the last three years for which complete data was available (2021 through 2023).

Table 3.2-2. Ambient Air Quality Monitoring Data

Pollutant Standards	2021	2022	2023
O_3 Maximum 1-hour concentration (ppm)	0.104	0.096	0.071
O_3 Maximum 8-hour concentration (ppm)	0.090	0.086	0.067
$PM_{2.5}$ National maximum 24-hour concentration (µg/m^3)	*	*	*
$PM_{2.5}$ State maximum 24-hour concentration (µg/m^3)	71.2	122.0	189.1
$PM_{2.5}$ National annual average concentration (µg/m^3)	*	*	*
$PM_{2.5}$ State annual average concentration (µg/m^3)	*	*	*
PM_{10} National maximum 24-hour concentration (µg/m^3)	80.7	156.6	230.4
PM_{10} State maximum 24-hour concentration (µg/m^3)	71.8	135.8	201.3
PM_{10} National annual average concentration (µg/m^3)	17.0	23.8	19.4
PM_{10} State annual average concentration (µg/m^3)	*	21.2	*

Source: CARB 2024a

Notes: NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data available to determine the value.

Attainment Status

The attainment status for Mariposa County is summarized in Table 3.2-3.

Table 3.2-3. Mariposa County Attainment Status

Pollutant	NAAQS	CAAQS
O_3	Nonattainment	Nonattainment
CO	Unclassified/Attainment	Unclassified
PM_{10}	Unclassified	Unclassified/Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Unclassified
NO_2	Unclassified/Attainment	Attainment
SO_2	Unclassified/Attainment	Attainment
Pb	Unclassified/Attainment	Attainment
Visibility Reducing Particles	No National Standards	Unclassified
Sulfates	No National Standards	Attainment
Hydrogen Sulfide	No National Standards	Unclassified

Source: CARB 2024b

Notes: NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; O_3 = ozone; CO = carbon monoxide; PM_{10} = particulate matter 10 micrometers or less in diameter; $PM_{2.5}$ = particulate matter 2.5 micrometers or less in diameter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; Pb = lead.

As indicated in Table 3.2-3, Mariposa County is designated as nonattainment for O_3 standards under NAAQS and CAAQS. Mariposa County is designated as either attainment or unclassified for all other pollutants under NAAQS and CAAQS.

Mariposa County Air Pollution Control District

The MCAPCD is the regional agency responsible for regulating air quality within Mariposa County. The agency regulates air quality through its planning and review activities and has permit authority over most types of stationary emission sources of criteria air pollutants and TACs.

RULES AND REGULATIONS

The MCAPCD has adopted rules and regulations to protect human health and property from the harmful effects of air pollution. MCAPCD rules and regulations relevant to the Proposed Project include, but are not limited to (MCAPCD 2021):

- **Regulation II, Rule 202 Visible Emissions**: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour which is:
    a. As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines, or
    b. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection a.
- **Regulation II, Rule 205 Nuisance**: A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

- **Regulation II, Rule 207 Particulate Matter**: A person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas at standard conditions.
- **Regulation V, Rule 501 Permit Required**: Before any source may be operated, a Permit to operate shall be obtained from the Air Pollution Control Officer. No Permit to Operate shall be granted either by the Air Pollution Control Officer or the Hearing Board for any source constructed or modified without authorization as required in Regulation IV until the information required is provided to the Air Pollution Control Officer and such source is altered, if necessary, and made to conform to the standards set forth in Regulation IV and elsewhere in these Rules and Regulations.

MCAPCD STATE IMPLEMENTATION PLAN

In 2023, MCAPCD issued the Draft Staff Report for the MCAPCD Reasonably Available Control Technology State Implementation Plan for the 2015 and 2008 Ozone National Ambient Air Quality Standards (SIP) (MCAPCD 2023). This plan was drafted to fulfill requirements under the Federal Clean Air Act due to the nonattainment status for the 2015 8-hour ozone standard. In the SIP, MCAPCD determined that there are no major sources in the MCAPCD subject to reasonably available control technology requirements and they do not anticipate any major sources subject to control techniques guidelines. They determined that MCAPCD regulations needed to be amended in order to meet reasonably available control technology standards for the categories of storage of petroleum liquids in fixed roof tanks and design criteria for stage 1 vapor control systems for gasoline service stations. MCAPCD proposes in the SIP to amend the regulations in order to meet reasonably available control technology requirements, but that has not yet occurred.

CEQA THRESHOLDS OF SIGNIFICANCE

The MCAPCD has established thresholds of significance for criteria air pollutants, as presented in the County of Mariposa General Plan Environmental Impact Report (MCAPCD n.d.). The MCAPCD has adopted a threshold of 100 tons per year for any criteria air pollutant or precursor (MCAPCD n.d.).

County of Mariposa General Plan

The Conservation and Open Space Element of the *County of Mariposa General Plan* (Mariposa County 2006) includes goals and policies related to air quality. The following air quality-related goals and policies are applicable to the Proposed Project:

- **Goal 11-1**: Conserve the natural and scenic resources, and open space lands to protect and enhance the County's quality of life and character ensuring a viable economy.
- **Policy 11-1c**: Implement standards that minimize impacts on and/or improve air quality.

3.2.2 Environmental Setting

The Proposed Project is located in Mariposa County, which is within the Mountain Counties Air Basin (MCAB). The MCAB lies along the northern Sierra Nevada Mountain range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. The MCAB is comprised of Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, Mariposa, as well as portions of Placer and El Dorado counties.

Climate and Topography

The general climate of the MCAB varies considerably with elevation and proximity to the Sierra ridge. The pattern of mountains and hills cause a wide variation in rainfall, temperature, and localized winds throughout MCAB. In the summer, temperatures in the mountains are mild, and range from 70 to 80 degrees Fahrenheit, whereas temperatures in the western parts of MCAB can exceed 100 degrees Fahrenheit (El Dorado County Air Pollution Control District 2002). In the winter, temperatures in the mountains are generally below freezing, while temperatures in the western portion of the MCAB typically fall below 32 degrees Fahrenheit only at night (El Dorado County Air Pollution Control District 2002).

Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. In the winter, these conditions can lead to CO "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between ROG and NO_X that results in the formation of O_3, which is a regional pollutant.

In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of O_3 in the MCAB and are largely responsible for the exceedances of the state and federal O_3 AAQS in the MCAB (El Dorado County Air Pollution Control District 2002).

Air Pollutants of Concern

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. ROG, NO_X, PM_{10}, $PM_{2.5}$, CO, SO_2, and Pb are primary air pollutants. ROG and NO_X are criteria pollutant precursors that form secondary criteria air pollutants such as O_3 through chemical and photochemical reactions in the atmosphere. Each of the primary and secondary criteria air pollutants and its known health effects is described below (USEPA 2024b).

Ozone (O_3). O_3 is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas.

Reactive Organic Gases (ROG). ROG is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. ROGs are emitted from a variety of sources, including liquid and solid fuel combustion, evaporation of organic solvents, and waste disposal. No ambient air quality standards have been established for ROGs.

Nitrogen Oxide (NO_X). NO_X is a by-product of fuel combustion and contributes to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is a reddish-brown gas that acts as an acute irritant and is more injurious than NO in equal concentrations. NO_2 exposure concentrations near roadways are of concern for susceptible individuals, including people with asthma, children, and the elderly. Short-term NO_2 exposures, ranging from 30 minutes to 24 hours, are known to result in adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma.

Particulate Matter (PM_{10} and $PM_{2.5}$). Suspended particulate matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Inhalable coarse particles, or PM_{10}, include particulate matter with a diameter of 10 micrometers or less. Fine particles, or $PM_{2.5}$, have a diameter of 2.5 micrometers or less. Particles that are 10 micrometers in diameter or smaller are of greatest concern because those are the particles that generally pass through the throat and nose, then enter the lungs. Once inhaled, these particles can affect the heart and lungs, and cause serious health effects. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Health effects of particulate matter include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., airway irritation, coughing, difficulty breathing). Particulate matter can also cause environmental effects such as visibility impairment, environmental damage, and aesthetic damage.

Carbon Monoxide (CO). CO is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Sulfur Dioxide (SO_2). SO_2 is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal as well as from chemical processes at chemical plants and refineries. When SO_2 forms sulfates in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Short-term exposures to SO_2, ranging from 5 minutes to 24 hours, are known to result in adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.

Lead (Pb). Pb is a metal found naturally in the environment as well as in manufactured products. The major sources of Pb emissions have historically been mobile and industrial sources. As a result of the USEPA's regulatory efforts to remove Pb from motor vehicle gasoline, levels of Pb in the air decreased by 98 percent between 1980 and 2014. Today, the highest levels of Pb in air are usually found near lead smelters. Depending on the level of exposure, Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Pb exposure also affects the oxygen-carrying capacity of the blood. The

most commonly encountered effects of Pb in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure, heart disease) in adults.

Toxic Air Contaminants

California law defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (CARB 2024c). TACs are pollutants that cause or may cause cancer or other serious health effects such as birth defects; neurological and reproductive disorders; or chronic eye, lung, or skin irritation. TACs also may cause adverse environmental and ecological effects. They include such substances as volatile organic compounds; chlorinated hydrocarbons; asbestos; dioxin; toluene; gasoline engine exhaust; particulate matter emitted by diesel engines; and metals such as cadmium, mercury, chromium, and lead compounds, among many others.

Diesel engines emit a complex mixture of pollutants, including very small carbon particles, or "soot" coated with numerous organic compounds, known as diesel particulate matter (DPM). Diesel exhaust also contains more than 40 cancer-causing substances, most of which are readily adsorbed onto the soot particles. Diesel engine emissions are responsible for approximately 70 percent of California's estimated cancer risk attributable to TACs (CARB 2024d). In 1998, the ARB identified DPM as a TAC.

A primary source of DPM emissions is combustion from diesel engines, such as those in trucks and other motor vehicles. DPM is of concern because it is a potential source of both cancer and non-cancer health effects, and because it is present at some concentration in all developed areas of the state. DPM contributes to numerous health impacts that have been attributed to particulate matter exposure, including increased hospital admissions, particularly for heart disease, but also for respiratory illnesses and even premature death.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective.

People may have different reaction to the same odor and an odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster, fast food restaurant). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

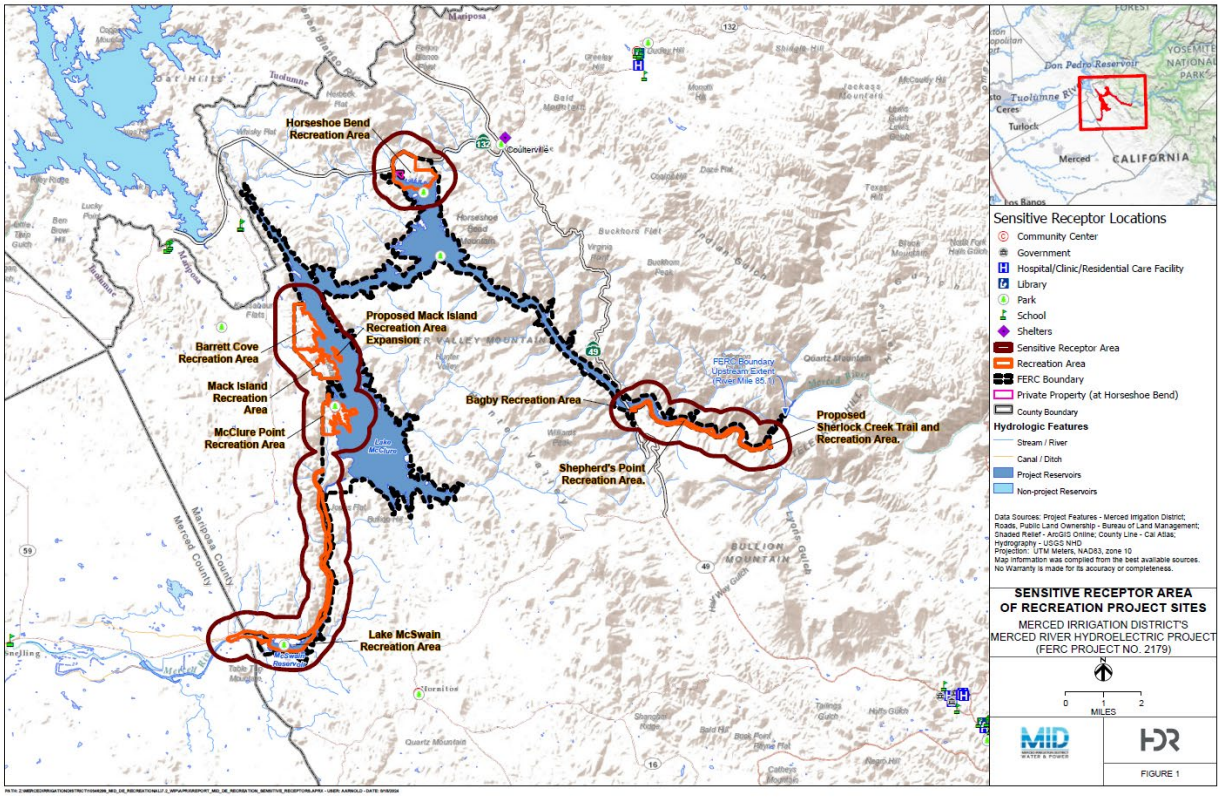
Sensitive Receptors

Air quality does not affect all individuals or groups within the population in the same way. Some groups are more sensitive to adverse health effects caused by exposure to air pollutants than others and are referred to as sensitive receptors. Sensitive receptors are defined as residences, schools, hospitals, convalescent homes, and other facilities where people spend significant amounts of time (MCAPCD 2006).

Figure 3.2-1 shows the location of sensitive receptors within range of the Project Area. As shown, there are no community centers, government buildings, medical care facilities, libraries, schools, or

shelters within the buffer area; the sensitive receptor sites within the sensitive receptor area include three parks.

Figure 3.2-1. Sensitive Receptor Area of Recreation Project Sites



3.2.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on air quality. The thresholds used to evaluate potential air quality impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and listed below. Except as provided in Public Resources Code Section 21099, impacts on air quality are considered significant if the Proposed Project would result in any of the following:

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

Impact Assessment Assumptions and Methodology

Impacts on air quality were identified qualitatively and quantitively based on the Proposed Project's potential to generate substantial emissions of criteria air pollutants, TACs, and odors. The analysis of environmental effects focuses on foreseeable changes to air quality in the context of effects listed in CEQA Thresholds of Significance, above.

Construction

Impacts on air quality during construction of the Proposed Project were analyzed quantitatively. Construction of the Proposed Project would generate criteria air pollutant emissions from the use of construction equipment, haul trucks, and construction labor commute vehicles. Projects comprising the Proposed Project which been defined by Merced ID with sufficient detail to analyze physical changes in the environment, are described in Section 2.3 as common projects or recreation area-specific projects. Criteria air pollutant emissions associated with construction of the common and recreation area-specific projects were estimated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1.29. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria air pollutant emissions associated with both construction and operation from a variety of land use projects. Construction emissions were estimated in CalEEMod using a combination of information presented in Chapter 2 and model defaults. Estimated construction periods in days, maximum numbers of construction workers at each project location, types of activities that would be anticipated to occur, and typical materials presented in Section 2.3.5 were used as inputs in CalEEMod. Criteria air pollutant emissions associated with construction of the projects assessed at a program level of detail, as described in Section 2.2.2, were analyzed qualitatively using assumptions and estimations. Refer to Appendix D, *Air Quality and Greenhouse Gas Emissions Modeling* for details regarding modeling inputs and assumptions. Air quality impacts were determined by comparing the combined criteria air pollutant emissions generated during construction of the Proposed Project against the MCAPCD thresholds. As noted above, the assessment uses the MCAPCD threshold of 100 tons per year for any criteria air pollutant or precursor.

Due to the programmatic nature of the Proposed Project, the quantitative analysis includes uncertainties and is based on examples of equipment that could be used for activities, although methods used for construction at an individual project site at a recreation area would depend on existing conditions, funding, and proposed use at that particular site. The timing and phasing for implementation of individual projects that comprise the Proposed Project and are covered under this Draft PEIR are dependent on several factors, such as size of proposed facilities and existing conditions at site, funding availability, year-to-year repair and rehabilitation priorities, sufficiency of existing project-specific environmental review, and securing agreements with cooperating partners or potential concessionaires. Model defaults and assumptions have therefore been used where necessary.

Operation and Maintenance

Impacts on air quality during operation and maintenance were assessed qualitatively based on the information in Chapter 2 Project Description.

Impacts Associated with the Proposed Project

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?

CONSTRUCTION

Construction activities associated with the Proposed Project would generate criteria air pollutant emissions from the use of construction equipment, haul trucks, and construction labor commute vehicles that would temporarily affect air quality.

Criteria air pollutant emissions generated during construction of the common and recreation area-specific projects were estimated using CalEEMod. The unmitigated construction criteria air pollutant emissions are summarized in Table 3.2-4. Unmitigated Construction Criteria Air Pollutant Emissions, average daily emissions in lb/day. The detailed CalEEMod assumptions and output is included in Appendix D, *Air Quality and Greenhouse Gas Emissions Modeling*. Estimated equipment, number of workers, and days of construction used in the modeling are included in Section 2.3.5 for the common projects. The model results for each common project were combined based on the number of recreation areas each type of project occurs for (described in Table 2-1 in Chapter 2).

The maximum daily emissions generated during construction of the combined common and recreation area-specific projects were compared with MCAPCD thresholds to determine significance.

Table 3.2-4. Unmitigated Construction Criteria Air Pollutant Emissions, average daily emissions in lb/day

Common Project	Number of Rec Areas common project occurs in	ROG	N_OX	CO	PM_{10}	$PM_{2.5}$	SO_2
Install or upgrade directional and educational signage	5	0.1	0.3	0.5	<0.1	<0.1	<0.1
Minor upgrades to campground with no effects on undisturbed ground	5	<0.1	0.2	0.3	0.1	<0.1	<0.1
Upgrades or expansions at campground that may affect undisturbed ground	5	0.1	0.6	0.7	0.2	0.1	<0.1
Install new Park Model cabins	4	0.1	0.6	0.8	0.2	0.1	<0.1
Install or upgrade small vault restroom facilities (max 6 vault toilets)	5	<0.1	0.4	0.5	0.1	0.1	<0.1
Install or upgrade restroom facilities (max 12 flush toilets and 2 showers)	5	0.1	1	1	0.2	0.1	<0.1
Upgrade day use and picnic areas	5	0.1	0.5	0.6	0.1	0.1	<0.1
Install or upgrade off-lake swim or fishing area	4	<0.1	0.4	0.5	0.1	0.1	<0.1
Install or upgrade on-lake swim area	4	0.1	0.2	0.4	<0.1	<0.1	<0.1
Upgrade or expand boat ramps and takeouts	4	0.5	0.9	2	0.1	0.1	<0.1

Common Project	Number of Rec Areas common project occurs in	ROG	N_OX	CO	PM_{10}	$PM_{2.5}$	SO_2
Rehabilitate marina facilities and boat docks	2	0.6	1	2	0.1	0.1	<0.1
Add new houseboat mooring buoys at existing locations	3	0.1	0.2	0.4	<0.1	<0.1	<0.1
Other in-lake projects	5	0.3	0.9	1	0.1	0.1	<0.1
Add, rehabilitate and/or expand parking lots and roads	5	0.1	0.6	0.8	0.1	0.1	<0.1
Install or upgrade hiking and/or biking trails	5	0.1	0.8	0.9	0.2	0.1	<0.1
Install or rehabilitate existing sewer systems with wastewater treatment plant	5	0.6	1	2	0.2	0.1	<0.1
Install water tank	5	0.6	1	2	0.2	0.1	<0.1
Combined Emissions multiplied by number of rec areas, average daily lb/day	**-**	**15.50**	**47.50**	**71.50**	**9.90**	**6.75**	**3.80**
Combined Emissions multiplied by number of rec areas, annual ton/year	**-**	**4.85**	**8.65**	**12.80**	**3.80**	**3.80**	**3.80**

Source: CalEEmod

Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particles of 10 micrometers and smaller; $PM_{2.5}$ = particles of 2.5 micrometers and smaller; SO_2 = sulfur dioxide; lb = pounds

As shown above, the unmitigated daily criteria air pollutant emissions during construction of the Proposed Project would not come close to exceeding the MCAPCD threshold of 100 tons per year for any criteria air pollutant. This modeling assumes all construction occurs within one year, which is not accurate; construction and therefore emissions will be spread over the span of multiple years. Therefore, even with the uncertainties and project elements which do not yet have level of detail to allow inclusion in the modeling, the Proposed Project would not exceed the thresholds for criteria pollutants.

MCAPCD has adopted rules and regulations to protect human health and property from the harmful effects of air pollution. These regulations include not discharging visible emissions, not discharging quantities of air contaminants which endanger the public, not discharging PM emissions in excess of 0.1 grains per cubic foot of dry exhaust gas and obtaining a permit to operate from the Air Pollution Control Officer.

The MCAPCD also issued a Draft Staff Report for the State Implementation Plan for the 2015 and 2008 Ozone NAAQS. This staff report proposed to amend regulations in order to meet reasonably available control technology requirements; however, as that has not yet occurred, there are no relevant MCAPCD standards with which to comply.

The County of Mariposa General Plan includes air quality-related goals and policies to implement standards that minimize impacts on and/or improve air quality. As no specific standards are outlined,

the Proposed Project will be in compliance with this policy by incorporating any standard and relevant construction BMPs.

Therefore, the Proposed Project would be consistent with applicable air quality plans. Further, implementation of the Proposed Project would not inhibit MCAPCD from continuing progress toward attaining state and federal air quality standards. The Proposed Project would not conflict with or obstruct implementation of an applicable air quality plan. Therefore, the Proposed Project would result in a **less than significant impact**.

OPERATION

Operation and maintenance activities would generate limited criteria air pollutant emissions from the use of minimal amounts of equipment and vehicles. Given the limited and infrequent nature of operation and maintenance activities, criteria pollutant emissions from operation and maintenance would be substantially less than those generated during construction, and thus, would not exceed MCAPCD thresholds. Therefore, operations and maintenance of the Proposed Project would not conflict with or obstruct implementation of an applicable air quality plan, resulting in a **less than significant impact**.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

CONSTRUCTION

The Proposed Project would generate criteria pollutant emissions during construction. Criteria air pollutant emissions generated during construction were estimated using CalEEMod. The unmitigated construction criteria pollutant emissions are summarized in Table 3.2-4, shown and explained above. Mariposa County is designated as nonattainment for O_3 standards under NAAQS and CAAQS. As shown, the unmitigated daily criteria air pollutant emissions during construction of the Proposed Project would not exceed MCAPCD thresholds, including for O_3. Therefore, construction of the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which Mariposa County is in nonattainment under the applicable federal or state ambient air quality standard, resulting in a **less than significant impact**.

OPERATION

Operation and maintenance activities would generate limited criteria air pollutant emissions from the use of minimal amounts of equipment and vehicles. Given the limited and infrequent nature of operation and maintenance activities, criteria pollutant emissions from operation and maintenance would be substantially less than those generated during construction, and thus, would not exceed MCAPCD thresholds. Therefore, operations and maintenance of the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which Mariposa County is in nonattainment under the applicable federal or state ambient air quality standard, resulting in a **less than significant impact**.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations?

Figure 3.2-1 shows the location of sensitive receptors within a 0.5-mile buffer surrounding the Proposed Project. As shown, there are no community centers, government buildings, medical care facilities, libraries, schools, or shelters within the buffer area. The sensitive receptor sites within the buffer area include three parks.

CONSTRUCTION

Project construction activities have the potential to generate TAC emissions, specifically diesel particulate matter (DPM), from the use of diesel equipment that could affect existing sensitive receptors. However, construction activities would be temporary, short-term, and dispersed over a multi-year schedule. Construction equipment would operate intermittently throughout the project construction phases with some phases requiring more equipment usage and potentially higher emissions compared to other phases of work. Periodic operation of construction equipment would allow for the dispersal of TAC emissions by avoiding continuous construction activity in the portions of the Proposed Project area closest to existing sensitive receptors.

According to *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (Office of Environmental Health Hazard Assessment 2015), DPM poses a carcinogenic health risk that is generally measured using an exposure period of 30 years for sensitive residential receptors. However, as presented in Table 3.2-4, emissions or DPM (which is strongly correlated with $PM_{2.5}$ emissions) are below thresholds and minimal. Although the Proposed Project analysis does not directly measure health risk impacts in the region, it does provide data that can be used to evaluate the potential for the Proposed Project to cause health risk impacts. The low level of $PM_{2.5}$ emissions generated by the Proposed Project construction activities coupled with the short-term duration of construction activity in any one given area would result in an overall low level of DPM concentrations within the Proposed Project area. The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations or generate significant quantities of construction DPM. Therefore, the Proposed Project would result in a **less than significant impact.**

OPERATION

No long-term generators or stationary sources are included as part of the Proposed Project. The Proposed Project would not generate significant quantities of operational DPM because operation and maintenance activities would be infrequent and require minimal diesel-powered equipment. Therefore, operation and maintenance of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations, resulting in a **less than significant impact.**

Impact AQ-4: Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

CONSTRUCTION

As described above, there are limited sensitive receptors in the area, with parks being the only sensitive receptor sites within the buffer area. Construction of the Proposed Project could result in odor emissions in the form of diesel exhaust from construction equipment, equipment and material hauling trucks, and worker commute vehicles. It is anticipated that odors during construction would be temporary, intermittent, and would dissipate rapidly from the source with an increase in distance. Therefore, in combination with the limited number of individuals likely to be in the area, they would not affect a substantial number of individuals. The Proposed Project would not result in construction emissions leading to odors adversely affecting a substantial number of people. Temporary emissions would be generated during construction; therefore, the Proposed Project would result in a **less than significant impact.**

OPERATION

The Proposed Project does not involve operation of any of the common types of facilities that are known to produce odors (e.g., landfill, wastewater treatment facility, chemical plants, refineries).

Operations and maintenance activities would be infrequent and would involve the use of minimal equipment at times and would not increase generation of odor emissions in the Proposed Project area. Given the limited and infrequent nature of operation and maintenance activities, odors from operation and maintenance would not affect a substantial number of individuals.

The Proposed Project would not result in operational emissions leading to odors adversely affecting a substantial number of people. Temporary emissions would be generated during construction; therefore, the Proposed Project Alternative would result in a **less than significant impact**.

3.2.4 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact AIR-1: Conflict with or Obstruct implementation of an applicable air quality plan	Less than Significant	N/A	Less than Significant
Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard	Less than Significant	N/A	Less than Significant
Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations	Less than Significant	N/A	Less than Significant
Impact AIR-4: Result in other emissions, such as those leading to odors, adversely affecting a substantial number of people	Less than Significant	N/A	Less than Significant

3.2.5 References

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3.3 Biological Resources

This section describes the regulatory and environmental setting in the Project Area related to biological resources, including sensitive natural communities, wetlands, and special-status species.

It evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the footprint of the recreation areas described in Section 2.3, Proposed Project of this CEQA document.

3.3.1 Regulatory Setting

This section discusses protections afforded to certain species by the California Department of Fish and Wildlife (CDFW), United States Fish and Wildlife Service (USFWS), or National Marine Fisheries Service (NMFS); State and federally protected wetlands; local policies and ordinances protecting biological resources; adopted habitat conservation plans; natural community conservation plans; and other approved local, regional, or State habitat conservation plans. The following regulations, plans, and/or policies provide relevant definitions and regulatory context for the impact discussion that follows.

Federal

Endangered Species Act

The Federal Endangered Species Act (ESA) was passed by the U.S. Congress in 1973 to protect and recover imperiled species and the habitat upon which they depend (50 CFR § 17.12 for listed plants, 50 CFR § 17.11 for listed animals, and various notices in the Federal Register for proposed species and designated critical habitats). The ESA is administered by the USFWS and NMFS. It lists protected species in danger of extinction throughout all or a significant portion of the species range as “endangered” and species likely to become endangered within the foreseeable future as “threatened” (USFWS 2017). The term “take”, under the Federal ESA means is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” with an endangered or threatened species (USFWS 1973b).[3]

Consultation with USFWS occurs when a proposed action of a project has the potential to affect federally listed species, as well as designated critical habitat for those species. FERC, as the lead federal agency for Section 7 ESA consultation related to the Merced River project, has conducted pertinent prior consultations with resulting measures to avoid and minimize the potential to affect federally listed species.

As the lead Federal agency for Section 7 ESA consultation, FERC will continue informal consultation with USFWS as part of its NEPA compliance process. Merced ID, as FERC’s designated non-federal representative, initiated informal Section 7 ESA consultation with the USFWS in 2015, as outlined below:

- April 2, 2015, FERC requested USFWS concurrence on “not likely to adversely affect” determinations.
- May 4, 2015, USFWS responded that it did not concur with FERC’s determinations.

[3] United States Fish and Wildlife Service (USFWS). 1973b. Endangered Species Act. Available at: https://www.fws.gov/endangered /laws-policies/index.html. Accessed: October 2020.

- May 10, 2016, FERC requested USFWS prepare and file its biological opinion by July 25, 2016.
- 2020 and 2021, Merced ID and USFWS held conference calls to revise draft Project effects to ESA-listed species.
- July 2021, Merced ID and USFWS reached agreement on conservation measures for ESA-listed plant species, valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB), San Joaquin kit fox (*Vulpes macrotis mutica*), foothill yellow-legged frog (*Rana boylii* pop. 5)- south Sierra distinct population segment (DPS), California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense* pop. 1)- central California DPS, and vernal pool fairy shrimp (*Branchinecta lynchi*).
- December 2021, Merced ID files amendments to the Merced River and Merced Falls FERC Projects to include the conservation measures for the ESA-listed species detailed above.
- September 2024 – March 2025, Merced ID and USFWS continue consultation for additional species, including Western spadefoot (*Spea hammondii*), northwestern pond turtle (*Actinemys marmorata*) and monarch butterfly (*Danaus plexippus*).

Magnuson-Stevens Act

The Magnuson-Stevens Fishery Conservation and Management Act (2007) requires federal agencies to consult with NMFS on all actions that may adversely affect essential fish habitat (EFH). EFH for Pacific salmonids occurs downstream of the Project Area, and EFH includes the Merced River up to the Crocker-Huffman Diversion Dam. The designation does not identify specific salmon species or races (for example, spring-run or fall-run); however, Sacramento River winter-run Chinook Salmon (*Oncorhynchus tshawytscha*), Central Valley spring-run Chinook Salmon , and Central Valley fall- and late-fall-run Chinook Salmon are species that occur in the Central Valley and are managed under the Pacific Coast Salmon Fisheries Management Plan.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA, 16 U.S.C. § 703 et seq.) protects migratory bird species and prohibits take (i.e., harm or harassment) through setting hunting limits and seasons and protecting occupied nests and eggs. The USFWS administers the MBTA and reviews actions that may affect species protected under the act.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) is the primary federal law protecting eagles. The USFWS oversees enforcement of this act. BGEPA prohibits the take of eagles without a permit (16 U.S.C.USC §§ 668-668c). BGEPA defines take as to "pursue, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb," and prohibits the take of individuals and their parts, nests, or eggs (USFWS 1973a).[4] In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present. If, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and

[4] Ibid

causes injury, death, or nest abandonment, those impacts would qualify as take under the BGEPA definition.

USFWS is authorized to permit the take of eagle nests that interfere with resource development or recovery operations subject to regulations that became effective on November 10, 2009 (50 CFR 22.26, 22.27). Under these rules the USFWS can issue permits that authorize individual instances of take of bald (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) when the take is associated with, but not the purpose of, an otherwise lawful activity and cannot practicably be avoided.

On April 12, 2024, USFWS published the Final Rule entitled Permits for Incidental Take of Eagles and Eagle Nests (50 CFR 13, 22) which revised the regulations for the issuance of permits for eagle incidental take and eagle nest take. The purpose of these revisions was to increase the efficiency and effectiveness of permitting, improve clarity for the regulated community, and increase the conservation benefit for eagles. In addition to continuing to authorize specific permits, USFWS created general permits for certain activities under prescribed conditions, including general permit options for qualifying wind-energy generation projects, power line infrastructure, activities that may disturb breeding bald eagles, and bald eagle nest take.

Clean Water Act: Sections 401, 402, and 404

The CWA as amended in 1972 is described in Section 3.0 9 Hydrology and Water Quality of this document. Regarding the biological resources impact assessment, key components of the CWA pertain to water quality and dredge/fill placement in wetlands and other waters of the United States, as referenced in the impact analysis question “c”. Other waters of the United States include lakes, rivers, streams, and their tributaries meeting the criteria under the CWA and the implementing regulations.

Wetlands are defined for regulatory purposes as areas inundated or saturated by surface water 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 solid conditions (33 CFR § 328.3). If a project results in discharges of any dredge/fill materials into waters of the United States – including wetlands, before and after the project actions – then a 404 permit would be obtained from the U.S. Army Corps of Engineers, (USACE) as well as any applicable 401 water quality certification from the SWRCB or RWQCB.

Sierra Resource Management Plan (BLM 2008)

The Sierra Resource Management Plan, adopted from the Sierra Nevada Proposed Resource Management Plan and Final Environmental Impact Statement of 2007, outlines goals, objectives, and management actions and decisions for biological resources such as conservation strategies for vegetative communities, fish and wildlife, and special status species for public lands under the jurisdiction of the Folsom Field Office of the United States Department of the Interior, Bureau of Land Management (BLM). The decisions therein are guided by public comment, best available scientific and technical information, results of consultation with federal and state agencies, local governments, Native American tribes, and other non-governmental organizations and individuals.

Of relevance to the Proposed Project is in Area of Critical Environmental Concern (ACEC) that exists within the Proposed Project. ACECs are public lands of natural or cultural value that have special management attention. Only one ACEC, limestone Salamander (28.43 acres) is located within the Proposed Project, though the Bagby Serpentine and Merced River ACEC, are nearby. Any near an

already designated ACEC that are acquired to conserve any of the special attributes identified for the previously established ACEC are managed under those same guidelines until the newly acquired lands are formally designated as part of the established ACEC. As part of the management actions for special status species, the already existing Limestone Salamander ACEC was expanded to include lands with any known limestone salamander occurrences or suitable habitat.[5]

Wild and Scenic Rivers Act

The Wild and Scenic River Act (WSRA) was passed by the U.S. Congress in 1968 to preserve and protect in a free-flowing condition selected rivers and their surrounding environments based on their natural, historic, cultural, and social values. The WSRA protected eight rivers upon inception and identified 27 more that needed additional research.

On November 2, 1987, portions of the Merced River from the south side of Mount Lyell in Yosemite National Park to Bear Creek, and from Triple Divide Peak in Yosemite National Park to the main stem were designated under Section 3(a) of the WSRA to have full protections, and the section from Bear Creek downstream to just above Lake McClure designated under Section 5(a) for further study under Pub. L. 100-149, Nov. 2, 1987, 101 Stat. 879. Today, the extent of the Merced River designated under the WSRA extends from its source on the south side of Mount Lyell downstream to just above Lake McClure Reservoir for a total of 122.5 miles of river, of which 71 miles are designated as Wild, 16 as Scenic, and 35.5 as Recreational under 16 U.S.C. § 1274 (1992). The Merced River passes through BLM, U.S. Forest Service (USFS), and National Park Service (NPS) lands, all of which have put forward Management Plans outlining direction and goals for segments of the river on respective administered lands.

State

California Endangered Species Act

The CDFW has jurisdiction over plant and wildlife species listed as State threatened or endangered under the California Endangered Species Act (CESA) pursuant to § 2080 of the California Fish and Game Code (FGC). CESA prohibits the take of State-listed threatened or endangered species.

CDFW defines take as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” (CDFW 2020). CDFW may authorize take under CESA through § 2081 of the FGC if that take is incidental to otherwise lawful activities and if certain conditions are met (CDFW 2020).

For species listed under the ESA and CESA on which the USFWS has issued an assessment of potential effects, the State is encouraged to rely on that assessment.

The State of California designates Species of Special Concern (SSC) as wildlife and plant species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, and/or educational values. Under CESA these species do not have legal protection (CDFW 2017b).

In addition, prior to the enactment of CESA, CDFW created a designation to provide additional protection to rare species. This designation remains today and is referred to as “fully protected” species, and those listed “may not be taken or possessed at any time” (CDFW 2017a).

[5] Bureau of Land Management (BLM). 2008. Sierra Resource Management Plan and Record of Decision. U.S. Department of the Interior, Bureau of Land Management, Folsom Field Office.

California Environmental Quality Act Guidelines Section 15380

The CEQA Guidelines mandates the assessment and disclosure of potential project-related impacts to federally and/or state listed species, as well as species not listed federally or by the state that may be considered rare, threatened, or endangered, if the species can be shown to meet specific criteria for listing outlined in CEQA Guidelines § 15380 (b). Species that meet these criteria can include "candidate species", species "proposed for listing", and "species of special concern." Plants appearing in the California Native Plant Society (CNPS) California Rare Plant Ranking System (CRPR) as list 1 or 2, meet CEQA's Guidelines § 15380 criteria.

CEQA's Guidelines § 15380 was included to address a potential situation in which a public agency is to review a Proposed Project that may have a significant effect on, for example a "candidate species", which has not yet been listed by the USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CDFW 2016).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act places the State-level responsibilities for water rights and water quality protection on the SWRCB and directs the nine RWQCBs to develop and enforce water quality standards within their jurisdiction. The Proposed Project is located in the San Joaquin River Basin of the Central Valley RWQCB jurisdiction. The Porter-Cologne Act requires any entity discharging waste, or proposing to discharge waste, within any region that could affect the quality of the "waters of the State" to file a "report of waste discharge" with the appropriate RWQCB. The appropriate RWQCB then would issue a permit, referred to as a waste discharge requirement.

Waste discharge requirements implement water quality control plans and take into consideration the Beneficial Uses to be protected, the Water Quality Certificate (WQC) reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (California Water Code § 13263) (SWRCB 2024).

Additionally, in April 2020, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: (1) a wetland definition; (2) a framework for determining if a feature that meets the wetland definition is a water of the State; (3) wetland delineation procedures; and (4) procedures for the submittal, review and approval of applications for WQCs and waste discharge requirements for dredge or fill activities.

California Fish and Game Code

The FGC includes multiple sections that regulate fish and wildlife, and their aquatic habitat which were contemplated in the impact discussion. Key sections, among many, described here and below are for general context.

Under FGC Code §§ 1600-1616, CDFW has the authority to regulate actions that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

Nesting migratory avian species are protected under FGC §§ 3503, 3503.5 and 3800, which prohibit the take, possession, or destruction of birds, their nests, or eggs. Implementation of take provisions

require that Proposed Project-related disturbance, within active nesting territories, be reduced or eliminated during critical phases of the nesting cycle (approximately March 1–August 31).

Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young), or the loss of habitat upon which birds are dependent, is considered "taking", and it is potentially punishable by fines and/or imprisonment (California Legislative Information 2020). Such taking would also violate federal law protecting listed migratory birds under the Migratory Bird Treaty Act.

Local

The Proposed Project is located primarily within Mariposa County, primarily on private and federal lands. Relative to biological resources, Mariposa County ordinance does not include provisions for the protection of trees or the requirement of permits for removal. The remainder of the project is located in Merced County, but no new construction activities or ground disturbance are proposed for that project element; as such, the local regulatory setting focuses on Mariposa County.

Mariposa County Wide General Plan

The Conservation and Open Space Element of the Mariposa County Wide General Plan[6] provides the following general implementation measures:

- Implement requirements for minimum building and grading setback lines from waters of the State (i.e., perennial streams and environmentally significant wetlands), that are adequate to protect stream, riparian, and wetland resource values.
- Site development and grading review should minimize the removal of native trees and groves of trees.

Habitat Conservation Plans and Natural Community Conservation Plans

There are no adopted Habitat Conservation Plans or Natural Community Conservation Plans within the Proposed Project boundary (CDFW 2024b).[7]

3.3.2 Environmental Setting

This section describes the regional and local environmental setting for biological resources. The biological study area matches the Proposed Project recreation area footprints as defined in Section 2.0 (Project Description) (refer to Figures 2-1 through 2-13).

Local Setting

The Proposed Project is in Mariposa County, California. Elevation ranges from 320 ft above mean sea level at McSwain dam to 1,302 ft at the upstream end of Lake McClure. The Proposed Project falls within the Upper Merced watershed (Hydrologic Unit Code 18040007).

[6] County of Mariposa. 2022. Mariposa County Wide General Plan. https://www.mariposacounty.org/458/General- Plan. Accessed: September 2024.

[7] CDFW. 2024b. Conservation Plan Boundaries – Habitat Conservation Plans and Natural Community Conservation Plans. Available online: <https://data.ca.gov/dataset/conservation-plan-boundaries-hcp-and-nccp-ds760> Accessed December 1, 2024. Last updated February 8, 2024.

Vegetation Communities

Habitat within the Proposed Project was mapped using CDFW's Vegetation Classification and Mapping Program (VegCAMP) (Appendix E, Veg Communities Maps). All except 488 acres of the easternmost Merced River Project were covered by an existing VegCAMP model. This unmodeled area was surveyed on June 5, 2024, and the data digitized. All surveyed areas had a similar herb dominated understory consisting of Italian thistle (*Carduus pycnocephalus*), short pod mustard (*Hirschfeldia incana*), wild oat (Avena sp.), bristly dogtail grass (*Cynosurus echinatus*), and ripgut brome (*Bromus diandrus*), with wild oat being the dominant species with a lesser codominance of ripgut brome.

The vegetation alliances were assessed per the NatureServe Heritage Program Status Ranking system rankings[8]. The alliances were then assessed for criteria meeting the definition of a sensitive natural community based on rarity and threats (CDFW, California Sensitive Natural Communities, 2023) (S1[9], S2[10], S3[11], S4[12], or S5[13]).

There were 18 total alliances identified within the Proposed Project boundaries, including 5 tree-dominated, 6 shrub-dominated, 1 herbaceous and 4 other habitats, as summarized in Table 3.3-1 and discussed in the next subsections.

Table 3.3-1. VegCAMP Alliances in the Proposed Project.

Alliance	CDFW Ranking	Total Acreage
Interior Live Oak Woodland	S4	48
Interior Live Oak Woodland/Toyon Scrubland	S4	76
Foothill Pine Woodland	S4	93
Foothill Pine Woodland/Wild Oat Grassland	S4	4
Blue Oak Woodland and Forest	S5	784
Valley Oak Riparian Forest and Wetland	S3	3
Red Willow Riparian Forest and Woodland	S3	4
California Yerba Santa Scrub	S5	5

[8] Faber-Langendoen D, Nichols J, Master L, Snow K, Tomaino A, Bittman R, Hammerson G, Heidel B, Ramsay L, Teucher A, and Young B. 2012. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks. NatureServe, Arlington, VA

[9] CDFW defines a S1 special-status vegetation community as "Critically imperiled and at a very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors."

[10] CDFW defines a S2 special-status vegetation community as "Imperiled and at high risk of extinction or elimination due to a very restricted range, very few populations or occurrences, steep declines, or other factors."

[11] CDFW defines a S3 special-status vegetation community as "Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors."

[12] CDFW defines a S4 special-status vegetation community as "At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors."

[13] CDFW defines a S5 special-status vegetation community as "Secure and at very low or no risk of extirpation due to very extensive range, abundant populations or occurrences, with little to no concern from declines or threats."

Alliance	CDFW Ranking	Total Acreage
Chamise Chaparral	S5	136
Whiteleaf Manzanita Chaparral	S4	2
Buck Brush Chaparral	S4	29
Toyon Chaparral	S4	1
Poison Oak Scrub	S4	4
Wild Oats and Annual Brome Grassland	N/A	482
Small Earthen Dam Ponds and Natural Lakes	N/A	5
Perennial Stream Channel	N/A	191
Urban and Developed Environment	N/A	141
Open Water	N/A	173
TOTAL		2,181

TREE-DOMINATED ALLIANCES

INTERIOR LIVE OAK WOODLAND

As surveyed, Interior Live Oak Woodland is dominated by interior live oak (*Quercus wislizeni*) in the tree layer along with occasional low cover of foothill pine (*Pinus sabiniana*), but not at sufficient levels to be an association. The shrub layer is dominated by toyon (*Heteromeles arbutifolia*), with some occurrences of California yerba santa (*Eriodictyon californicum*) and occasional California buckeye (*Aesculus californica*).

A majority of this alliance is co-dominated by toyon (identified in Table 3.3-1 as Interior Live Oak Woodland/Toyon Scrubland). One section of this habitat appears to have recently burned, with all interior live oaks appearing to be dead, but standing as bare wood with a medium cover in the landscape. This section has been labeled as a ghost interior live oak woodland in Appendix E.

Interior Live Oak Woodland has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 124 acres within the Proposed Project.

FOOTHILL PINE WOODLAND

As surveyed, Foothill Pine Woodland is dominated by foothill pine in the tree layer with some codominance of interior live oak. The shrub layer is dominated by a variable mixture of chamise (*Adenostoma fasciculatum*), California yerba santa, and toyon. Typically, chamise and toyon do not co-occur in a stand of foothill pine woodland. Additionally, bare ground exists at variable levels in this habitat.

Foothill Pine Woodland occurs with one association in addition to its standard form described above. The wild oat association has minimal shrubs, and a large amount of grassy understory comprising the majority of the ground cover with wild oat (*Avena* sp.) as the dominant herb (identified in Table 3.3-1 as Foothill Pine Woodland/Wild Oat Grassland).

Foothill Pine Woodland has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 97 acres within the Proposed Project.

BLUE OAK WOODLAND AND FOREST

As surveyed, Blue Oak Woodland and Forest is dominated by blue oak (*Quercus douglasii*) in the tree layer with minor cover of foothill pine. The canopy can be open to continuous to a sparse, but evenly distributed, savannah. The canopy may be two tiered with pines growing 30 to 45 feet higher than hardwood species. The shrub layer is sparse to intermittent. The herbaceous layer is composed of non-native annual grasses. Forbs differ greatly in composition seasonally. This was the most common alliance in the FERC Projects boundaries.

Blue Oak Woodland has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 784 acres within the Proposed Project.

VALLEY OAK RIPARIAN FOREST AND WOODLAND

This vegetation community is dominated by valley oak (Quercus lobata) or codominant with various species of oak (Quercus sp.) and willow (Salix sp.). The understory associates tend to include various species of sedges (Cyperaceae), California rose (Rosa californica), various species of blackberry (Rubus sp.), and California grape (Vitis californica). The tree canopy is less than 90 feet tall and is open to continuous to an evenly distributed savannah. The shrub layer is open to continuous, and the herbaceous layer is usually composed of non-native annual grasses.

Valley Oak Riparian Forest and Woodland has a CDFW ranking of S3 and is considered a sensitive natural community. There are 3 acres within the Proposed Project.

RED WILLOW RIPARIAN FOREST AND WOODLAND

This vegetation community is dominated by red willow (*Salix laevigata*) or codominant in the tree and shrub layer with California buckeye, foothill pine, and various species of oak and other willow species. The shrub layer may also include dogwood (*Cornus* sp.), California rose, Himalayan blackberry (*Rubus armeniacus*) and blue elderberry (*Sambucus mexicana*). The tree canopy is less than 90 feet tall and open to continuous. The shrub layer may be sparse to continuous. The species composition and cover of the herbaceous layer is variable.

Willow Riparian Woodland and Forest has a CDFW ranking of S3 and is considered a sensitive natural community. There are 4 acres within the Proposed Project.

SCRUB-DOMINATED ALLIANCES

CALIFORNIA YERBA SANTA SCRUB

As surveyed, California Yerba Santa Scrub is dominated by California yerba santa in the herb layer, with minor cover of toyon and/or chamise, as well as resprouting interior live oaks that appear to be recovering from fire. There is no association for this habitat.

California Yerba Santa Scrub has a CDFW ranking of S5 and is not considered a sensitive natural community. There are 5 acres within the Proposed Project.

CHAMISE CHAPARRAL

This vegetation community is characterized by a shrub canopy dominated by chamise with minor occurrences of California yerba santa and toyon. Emergent trees are sometimes present in low cover. The shrub canopy is less than 12 feet tall and its structure ranges from intermittent to continuous. Mapped at 3,679 acres, chamise makes up the second most common alliance in the Proposed Project.

Chamise Chaparral has a CDFW ranking of S5 and is not considered a sensitive natural community. There are 136 acres within the Proposed Project.

WHITELEAF MANZANITA CHAPARRAL

This vegetation community is characterized by a shrub canopy dominated by whiteleaf manzanita (*Arctostaphylos viscida*) with minor occurrences of chamise. Scattered occurrences of pines may be present at low cover. The shrub canopy is less than 12 feet tall and varies from open to continuous. The herbaceous layer is sparse.

Whiteleaf Manzanita Chaparral has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 2 acres within the Proposed Project.

BUCK BRUSH CHAPARRAL

This vegetation community is dominated by wedge leaf ceanothus (*Ceanothus cuneatus*) or codominant in the shrub canopy with various species of manzanita (*Arctostaphylos* sp.), various other species of ceanothus (*Ceanothus* sp.), mountain mahogany (*Cercocarpus* sp.), toyon, and various species of prostrate oaks. Emergent trees including various species of oak and pines (*Pinus* sp.) may be present in low cover. Shrubs are less than 10.5 feet tall, and the canopy is intermittent to continuous. The herbaceous layer includes sparse occurrences of forbs and non-native annual grasses.

Buck Brush Chaparral has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 29 acres within the Proposed Project.

TOYON CHAPARRAL

This vegetation community is dominated by toyon or codominant in the shrub canopy with ceanothus, California mugwort (*Artemisia douglasiana*), and buckwheat (*Eriogonum* sp.). Emergent trees including oak and walnut (*Juglans* sp.) may be present in low cover. Shrubs are less than 45 feet tall, and the canopy is intermittent to continuous. The herbaceous layer is sparse to continuous.

Toyon Chaparral has a CDFW ranking of S4 and is not considered a sensitive natural community. There is 1 acre within the Proposed Project.

POISON OAK SCRUB

This vegetation community is dominated by poison oak (*Toxicodendron diversilobum*) with some occurrences of California mugwort, coyote brush, toyon, and elderberry. Emergent trees including oak and walnut may be present in low cover. Shrubs are less than 12 feet tall, and the canopy is intermittent to continuous and two tiered. The species composition and cover of the herbaceous layer is variable.

Poison Oak Scrub has a CDFW ranking of S4 and is not considered a sensitive natural community. There are 4 acres within the Proposed Project.

HERBACEOUS ALLIANCES

WILD OATS AND ANNUAL BROME GRASSLAND

This vegetation community is characterized by an herbaceous layer co-dominated by various species of non-native annual grasses including wild oat, cheatgrass (*Bromus* sp.), quaking grass (*Briza* sp.) and barley (*Hordeum* sp.). Scattered occurrences of trees and shrubs are present at low

canopy cover. The herbaceous layer is less than 4.5 feet tall and open to continuous. Wild Oats and Annual Brome Grassland makes up the third most common alliance within the Proposed Project boundaries.

Wild Oats and Annual Brome Grassland is not CDFW ranked. There are 482 acres within the Proposed Project.

OTHER HABITATS

SMALL EARTHEN DAM PONDS AND NATURAL LAKES

This vegetation community is dominated by various species of sedges or codominant with various other aquatic and semi-aquatic herbaceous species. Emergent trees including willows may be present and sparse. Mosses are abundant. Herbs are less than 4.5 feet tall, and cover is open to continuous.

Small Earthen Dam Ponds and Natural Lakes is not CDFW ranked. There are 5 acres within the Proposed Project.

PERENNIAL STREAM CHANNEL

This natural environment consists of a channelized perennial watercourse with no vascular vegetation cover and minimal observations of algae growth. The channel is part of the Merced River system and occurs in the eastern portion of the Proposed Project.

Perennial Stream Channel is not CDFW ranked. There are 191 acres within the Proposed Project.

URBAN AND DEVELOPED ENVIRONMENT

This environment consists of all built structures of the Proposed Project and does not have vegetation cover. Introduced horticultural trees and shrubs may be present throughout along with non-native annual grasses and forbs.

Urban and Developed Environment is not CDFW ranked. There are 141 acres within the Proposed Project.

OPEN WATER

This environment consists of water with no vascular vegetation cover and minimal observation of algae growth. It includes Lake McClure and Lake McSwain.

Open Water is not CDFW ranked. There are 173 acres within the Proposed Project.

Sensitive Natural Areas

Sensitive Vegetation Alliances

Sensitive Vegetation Alliances, as defined by CDFW, that occur in the Proposed Project include Valley Oak Riparian Forest and Woodland, and Red Willow Riparian Forest and Woodland (Table 3.3-1). Both communities are ranked S3 which means they are considered, “Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.”

There are 2.27 acres of Red Willow Riparian Forest and Woodland and 2.73 acres of Valley Oak Riparian Forest and Woodland in the vicinity of the Merced Falls Recreation Area. There are 1.35

acres of Red Willow Riparian Forest and Woodland in the footprint of Horseshoe Bend Recreation Areas (Appendix E).

Critical Habitat

The USFWS defines critical habitat as area inhabited by listed species that contain physical and/or biological features essential to that species survival that may need management and/or protection.

Approximately one acre of critical habitat for fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*), hairy Orcutt grass (*Orcuttia pilosa*), and vernal pool fairy shrimp (*Branchinecta lynchi*) occurs in the vicinity of the Merced Falls Recreation Area (Appendix E). However, the area within the critical habitat does not provide subtle habitat for vernal pool species.

Additionally, the California red legged frog has both a core area and a recovery unit in the Proposed Project. The Sierra Nevada Foothills and Central Valley Recovery Unit occurs in the entire Proposed Project and the Piney Creek Core Area occurs in a portion of the Merced River Project as depicted on in Appendix E. The Piney Creek Core Area is considered to comprise a historic range for the California red-legged frog which is extirpated from the area.[14]

Areas of Critical Environmental Concern

The only Areas of Critical Environmental Concern occurring in a potential area of Proposed Project construction-related activities is Limestone Salamander, which is designated for the protection of the limestone salamander (*Hydromantes brunus*). There are approximately 28.43 acres combined in the footprints of Bagby Recreation Area, Sherlock Creek Recreation Area, Shepard's Point Recreation

Area, and the area of the proposed trail between Bagby Recreation Area and Sherlock Creek Recreation Area.

Federally Protected Wetlands/Waters of the United States

The term Waters of the United States is an encompassing term used by the U.S. Army Corps of Engineers (USACE) for areas that are subject to federal regulation under the CWA, Sections 404 and 401, which refer to wetlands and non-wetland (other waters) features.

Wetlands that meet the criteria of the new "Waters of the United States" rule are managed under the jurisdiction of the USACE and EPA pursuant to Section 404 of the CWA. The definition developed by the USACE considers those areas that "…are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" and have a surface connection to relatively permanent waters. Special aquatic sites, such as vernal pools, are also pursuant to Section 404.

NATIONAL WETLAND INVENTORY

Aquatic features within the Proposed Project, as modeled by the USFWS, is described in Table 3.3-2 and depicted in Appendix E, NWI Maps. The wetland types are defined by the National Wetland Inventory.[15]

[14] USFWS. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Region 1. Portland, Oregon.).

[15] FWS. 2024. National Wetland Inventory. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C. https://www.fws.gov/wetlands/data/Mapper.html

Table 3.3-2. National Wetland Inventory Modeled Wetlands in the Proposed Project

Wetland Type	Acreage	Definition [16]
Palustrine Emergent	2	Includes wetlands dominated by vegetation and are generally less than 20 acres in size and are no deeper than 8.2 feet. Vegetation is comprised of herb species that are generally perennial.
Palustrine Forested	<1	Includes wetlands dominated by vegetation and are generally less than 20 acres in size and are no deeper than 8.2 feet. Vegetation is comprised of woody plants that are at least 20 feet tall.
Palustrine Shrub	2	Includes all wetlands dominated by vegetation and are generally less than 20 acres in size and are no deeper than 8.2 feet. Vegetation is comprised of woody plants that are less than 20 feet tall.
Palustrine	5	Includes wetlands dominated by vegetation and are generally less than 20 acres in size and are no deeper than 8.2 feet. This form of palustrine is used for areas that are less homogenously vegetated as those above.
Lacustrine Limnetic	268	Includes wetlands and habitats in a topographic depression or dammed river channel that generally lacks persistent vegetation and is greater than 20 acres in size. Limnetic refers to areas that have depths below 8.2 feet deep.
Lacustrine Littoral	24	Includes wetlands and habitats in a topographic depression or dammed river channel that generally lacks persistent vegetation and is greater than 20 acres in size. Littoral refers to areas that have depths no less than 8.2 feet.
Intermittent Riverine	11	Includes wetlands and habitats contained within a channel that is typically flowing part of the year. If water is not flowing it may remain in isolated pools or surface water may be absent.
Perennial Riverine	<1	Includes wetlands and habitats contained within a channel that is typically flowing the entire year
Total	**311**	

VegCAMP Alliances

Additionally, as described above, three riparian and/or wetland alliances were identified within the Proposed Project boundary. These included 4 acres of Red Willow Riparian Forest and Woodland, 3 acres of Valley Oak Riparian Forest and Woodland, and 5 acres of Small Earthen Dam Ponds and Natural Lakes. These are all shown on Appendix E, Figures 1-5.

Relicensing Studies

In 2010, Merced ID conducted proper functioning condition assessments of six riparian habitat sites (Sherlock Creek, Lake McClure upstream of Bagby Recreation Area, Maxwell Creek, Piney Creek, Cotton Creek, and Merced Falls reach) and three wetland sites along the shorelines of McSwain Reservoir, Merced Falls Reservoir and the Crocker-Huffman Diversion Dam Impoundment, as described on page 3-185 of FERC's 2015 FEIS (FERC 2015 Merced ID FEIS). All of the sites were determined to be in Proper Functioning Condition, having well-developed plant communities and channel features resilient to floods.

[16] Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, U.S. Geologic Survey, Reston Virginia.

In addition, 12 tributaries were surveyed for riparian features. Nine of them (Solomon Gulch, David Gulch, Flyaway Gulch, Hell's Hollow, Scotch Gulch, Whites Gulch, Wheeler Gulch, Willow Creek and Picture Gallery Gulch) had vigorous riparian vegetation. At three of them (Rocky Gulch, Rancho de Oro Gulch, and Temperance Creek), no riparian vegetation was observed.

Fish and Wildlife Movement Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to: (1) sustain species with specific foraging requirements; (2) preserve a species' distribution potential; and (3) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife movement corridors to be a sensitive resource.

Available data on movement corridors and linkages was accessed on August 4, 2024, via the CDFW BIOS 5 Viewer (2024a).[17] Data reviewed included the Essential Connectivity Areas layer [ds620], the Natural Landscape Blocks layer [ds621], and the Missing Linkages in California layer [ds420]. Lake McClure south of Barret Cove and the Merced River leading to Merced Falls are included in an essential connectivity area[18] that connects to Natural Landscape Blocks surrounding the Proposed Project. Essential Connectivity Areas include 850 large areas of natural landscape, connected by 192 Essential Connectivity Areas. One of the Natural Landscape Blocks includes Lake McClure (ID #24).[19] Western portions of the Proposed Project are surrounded by natural landscape blocks (ID #104, #123).

The Merced River, as it begins from the southeastern tip of McClure Lake, is identified as the eastern end of a missing linkage for mammals and birds called the Lower San Joaquin River (CV19).[20] This missing linkage has been classified as high threat to connectivity in the area for mammals and birds, as an impacted area that provides little to no connectivity functions yet is critical to restore function. Additionally, Merced Falls is bisected by a missing linkage for mammals, called Fresno-Sacramento (CV16). This missing linkage is defined as a 'landscape linkage', as it is a large regional connection between core areas that are essential for flow between different sections of the landscape and facilitation of animal movement. It has been classified as a severe threat with imminent loss for the key species, the San Joaquin kit fox. Major barriers of the Lower San Joaquin River missing linkage are large habitat gaps of 20+ miles, and stream channelization. For the Fresno-Sacramento missing linkage, major barriers are broadly urbanization and roadways.

Anadromous fishes have access to the Merced River upstream till Crocker-Huffman Diversion Dam, which does not provide fish passage. This reach downstream of the dam to Shaffer Bridge is identified as the primary spawning reach for salmonids (FERC 2015). Currently there is no functional fish passage at Merced Falls Dam, nor is there functional fish passage at Crocker-Huffman Diversion Dam. Crocker-Huffman Diversion Dam is considered the most upstream limit to anadromy,

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[17] CDFW. 2024a. *CNDDB* in BIOS. Available online: <https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data#43018408-cnddb-in-bios>. Accessed August 4, 2024. Last updated August 4, 2024. CDFW, Sacramento, CA.

[18] Essential connectivity areas are large remaining blocks of intact habitat or natural landscape and model linkages between them that need to be maintained, particularly as corridors for wildlife (CDFW 2014a).

[19] A natural landscape block is a large area of intact habitat/natural landscape (CDFW 2016).

[20] Missing links are described as "highly impacted area currently providing limited to no connectivity function, but based on location, one that is critical to restore connectivity" (CDFW 2014b).

and this dam is downstream and outside of the Project Area. Additionally, the Staff Alternative is not expected to interfere with movement of native resident fishes from any activities associated with the Project.

Project-related modifications to existing and development of new infrastructure may function as localized barriers to wildlife that may delay or temporarily hinder movement; however, none of the features appear to represent major impediments or expose wildlife to risk by forcing them into more dangerous alternative routes. Portions of lands east of the Proposed Project can be characterized as contiguous open space associated with the Stanislaus National Forest; they are capable of facilitating unburdened wildlife movement.

Fish Habitat and Essential Fish Habitat

The Proposed Project Area is comprised of impounded sections of the Merced River and supports a recreational fishery for both a warmwater and coldwater fishery (FERC 2015). Recreational opportunities for fish include resident rainbow trout (*O. mykiss*), landlocked Chinook salmon (*Onchorynkus tshawytscha*), Kokanee salmon (*O. nerka*), largemouth bass (*Micropterus salmoides*), spotted bass, and channel catfish. Additional fish species can be referenced in the FEIS (FERC 2015).

EFH and critical habitat were determined using the NOAA Fisheries Species and Habitat App for the West Coast Region, NOAA Essential Fish Habitat Mapper, or USFWS IPaC. These online query tools provide information on essential and critical habitat for various species. The NOAA online tools provide information on EFH for anadromous species including Chinook salmon and steelhead (*Oncorhynchus mykiss*), while the IPaC provides information on non-anadromous fish species.

Fisheries habitat present in the Proposed Project area includes McClure Reservoir and McSwain Reservoir, which are both impounded by New Exchequer Dam (RM 62.4) and Lake McSwain Dam (RM 56.0) respectively. Crocker-Huffman Dam (RM 52.0) is 3.0 RM downstream of the Proposed Project Area. All three dams do not currently provide fish passage for anadromous fishes, and Crocker-Huffman diversion dam is considered the farthest upstream extent to anadromy (FERC 2015). No EFH occurs within the Proposed Project area; however, EFH for Chinook salmon occurs in the reach of the Merced River from its confluence with the San Joaquin to Crocker-Huffman diversion dam. For more information on the Proposed Project Area, refer to the FEIS (FERC 2015 Merced ID FEIS).

As the upstream limit to anadromy is downstream and outside of the Proposed Project Area, Chinook salmon, Central Valley DPS steelhead, and green sturgeon (*Acipenser medirostris*) are not expected to occur in the project area.

Fish Critical Habitat

Designated critical habitat for Central Valley steelhead DPS (70 FR 52487) does not occur within the Project area. Designated critical habitat includes the Merced River from the confluence with the San Joaquin to approximately 0.9 river miles upstream of Crocker-Huffman Diversion Dam.

Special-Status Species

Special-status species include: (1) those that are endangered due to imminent possibility of extinction in the wild; (2) those that are rare due to small numbers throughout their range, and (3) those species whose small numbering or limited habitat would render them endangered if they suffered any negative impacts. All species listed on the federal Endangered Species Act (ESA) and

California Endangered Species Act (CESA) are included in this definition, as well as species identified and assigned a status ranking by governmental agencies such as CDFW, USFWS, BLM, and non-profit organizations such as CNPS. Some common threats to a species or population include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. Special status-species include the following:

- Listed, proposed, or candidates for listing under the federal ESA (CFR § 17.11 – listed; 61 Federal Register 7591, February 28, 1996, candidates)
- Listed or proposed for listing under the CESA (FGC 1992 § 2050 et seq.; 14 California Code of Regulations (CCR) § 670.1 et seq.)
- Designated as an SSC by CDFW
- Designated as Fully Protected (FP) by CDFW (FGC §§ 3511, 4700, 5050, 5515)
- Species that meet the definition of rare or endangered under CEQA (14 CCR§15380) including those with California Rare Plant Ranks (CRPR) of 1A, 1B, 2A, and 2B
- Species designated as sensitive by BLM in California where they occur on BLM lands (BLM-S).

During Merced River FERC relicensing field studies (2010 to 2012), Merced ID classified wildlife habitats for Merced River using the CDFW California Wildlife Habitat Relationships (CWHR) system and conducted 12 relicensing studies for special-status species, including Study 3.3,Special-Status Amphibians and Aquatic Reptiles; Study 4.1, Special-Status Wildlife – Bats; Study 5.1, Special-Status Plants; 7.1, federal ESA-Listed Amphibians - California Red-Legged Frog; Study 7.2, federal ESA-Listed Amphibians – California Tiger Salamander; Study 7.3, federal ESA-Listed Branchiopods – Vernal Pool Fairy Shrimp and Conservancy Fairy Shrimp; Study 7.4, federal ESA-Listed Invertebrates – Valley Elderberry Longhorn Beetle; and Study 7.5, federal ESA-Listed Plants; Study 7.6, CESA-Listed Amphibians – Limestone Salamander; Study 7.7, CESA-Listed Wildlife – Bald Eagle; Study 7.8, CESA-Listed Plants; and Study 7.9, CESA-Listed and Fully Protected Amphibians – Limestone Salamander: Second Year Study. In total, 72 special-status species were determined to be known or have the potential to occur within 0.25 mile of the Proposed Project boundary. This included 40 special-status plants, 1 terrestrial amphibian, 1 reptile, 18 birds, and 12 mammal species.

Additionally, 76 special-status species known to occur or have the potential to occur were identified within the Merced Falls FERC Project boundary, including 46 plants, 15 birds, 10 mammals, 3 amphibians, and 2 reptiles. Surveys conducted in 2010 and 2011 documented nine state special-status species, including five listed as SSC, two classified as FP and two listed on the CRPR.

In January 2025, the following databases were accessed for updated information on special-status species known or with the potential to occur in the Merced River Proposed Project Area (Appendix E):

- USFWS's Information for Planning and Consultation (iPaC) (USFWS 2025)
- CDFW's CNDDB (CDFW 2025)
- NOAA Fisheries Species and Habitat App
- CNPS' Inventory of Rare and Endangered Plants of California (CNPS 2025)

The search parameters for the databases included the Proposed Project recreation area footprint, plus a 0.25-mile buffer.

BLM's sensitive species lists were also reviewed to identify any plant and wildlife species that are recognized by the BLM as sensitive (BLM-S) on BLM lands that were not already included in the above bulleted databases.

Raw data from the database queries are provided in Appendix E, with the exception of the CNDDB RareFind 5 results as they are not able to be shared publicly. A table of all species from the databases is included in Appendix E.

Table 3.3-3 below summarizes those species known or with the potential to occur on the Proposed Project.

Table 3.3-3. Special-status Species Table

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Plants				
Rawhide Hill onion *Allium tuolumnense*	BLMS-A, CRPR 1B.2	Cismontane woodland. Restricted to serpentine soil, usually in grey pine chaparral on steep, rocky, south-facing slopes or small drainages. Elevation: 685–1,970 feet. Blooming period: Mar–May.	No	May occur, there is a 2011 CNDDB occurrence near and at Bagby Recreation Area. There are cismontane woodland habitats as well as serpentine outcrops present in the Proposed Project.
big-scale balsamroot *Balsamorhiza macrolepis*	BLMS-A, CRPR 1B.2	Chaparral, cismontane woodland, and grassland. Sometimes on serpentine. Elevation: 295–5,100 feet. Blooming period: March–June.	No	May occur, there are grassland, cismontane woodland, and chaparral habitats as well as serpentine outcrops present in the Proposed Project.
Hoover's calycadenia *Calycadenia hooveri*	BLMS-B, CRPR 1B.3	Cismontane woodland, valley and foothill grassland on exposed, rocky, barren soil. Elevation: 195–1,315 feet. Blooming period: Jun–Sep.	No	May occur, there are cismontane woodland and grassland habitats present in the Proposed Project.
spicate calycadenia *Calycadenia spicata*	CRPR 1B.3	Cismontane woodland and grassland. Elevation: 130–4,595 feet. Blooming period: May–September.	No	May occur, there are cismontane woodland and grassland habitats present in the Proposed Project.
fleshy owl's-clover *Castilleja campestris* var. *succulenta*	FT, SE, BLMS-A, CRPR 1B.2	Vernal pools and other moist places, often in acidic soils. Elevation: 0–2,460 feet. Blooming period: Apr–Jul.	Yes	May occur, there are vernal pool habitats present in the Proposed Project.
Small's southern clarkia *Clarkia australis*	BLMS-A, CRPR 1B.2	Cismontane woodland and lower montane coniferous forest. On open, rocky sites in conifer forest or oak woodland. Elevation: 2,625–6,810 feet. Blooming period: May–Aug.	No	Not likely to occur, there are cismontane coniferous and oak woodland habitats in the Proposed Project; but the species range is 2,000 feet higher in elevation than the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Mariposa clarkia Clarkia biloba ssp. australis	BLMS-A, CRPR 1B.2	Chaparral, cismontane woodland. On serpentine. Several sites occur in the foothill woodland/riparian ecotone. Elevation: 390–4,855 feet. Blooming period: May–July.	Yes	**CONFIRMED PRESENT in the Proposed Project**. There were 111 occurrences located on the Proposed Project, on the following lands: 62 BLM; 31 Merced; 18 Private. There are grassland, cismontane woodland, and chaparral habitats as well as serpentine outcrops present in the Proposed Project. Protection plans will be put in place.
Merced clarkia *Clarkia lingulate*	SE, CRPR 1B.1	Chaparral and cismontane woodland. Elevation: 1,300–1,490 feet. Blooming period: May–June. Merced clarkia has always been known from only two occurrences along Highway 140 in Mariposa County (CDFW 2024).	No	Not likely to occur. This species has always been known only from two occurrences that are not within the Proposed Project boundary.
beaked clarkia *Clarkia rostrata*	BLMS-A, CRPR 1B.3	Cismontane woodland, valley and foothill grassland. North-facing slopes; sometimes on sandstone. Elevation: 195–3,000 feet. Blooming period: Apr–May.	Yes	

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Mariposa cryptantha *Cryptantha mariposae*	BLMS-A, CRPR 1B.3	Ultramafic affinity to serpentine areas in chaparral. Elevation: 1,965–2,625 feet. Blooming period: April–June.	Yes	**CONFIRMED PRESENT in the Proposed Project.** There was 1 occurrence located on the Proposed Project, on private land. There are chaparral habitats as well as serpentine outcrops present in the Proposed Project. Protection plans will be put in place.
Red Hills cryptantha *Cryptantha spithamaea*	BLMS-A, CRPR 1B.3	Ultramafic affinity to serpentine areas in chaparral and cismontane woodland. Elevation: 885–2,495 feet. Blooming period: Apr–May.	No	May occur, there are chaparral and cismontane woodland habitats as well as serpentine outcrops present in the Proposed Project.
yellow-lip pansy monkeyflower *Diplacus pulchellus*	BLMS-A, CRPR 1B.2	Lower montane coniferous forests, meadows, and seeps. Vernally wet sites. Soils can be clay, volcanic, or granitic. Elevation: 1,970-6,565 feet. Blooming period: Apr–Jul.	No	Not likely to occur, there are no mesic brushy slopes or mixed evergreen woodland communities in the Proposed Project.
dwarf downingia *Downingia pusilla*	CRPR 2B.2	Vernal lake and pool margins with a variety of associates. In several types of vernal pools. Elevation: 0–1,610 feet. Blooming period: Mar–May.	No	May occur, there are vernal pool habitats present in the Proposed Project.
Congdon's woolly sunflower *Eriophyllum congdonii*	SR, CRPR 1B.2	Rocky metamorphic soils in chaparral, cismontane woodland, lower montane coniferous forest, and grassland. Elevation: 1,640–6,230 feet. Blooming period: April–June.	No	Not likely to occur, the species elevation range is more than 500 feet outside the range of the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
spiny-sepaled button-celery *Eryngium spinosepalum*	BLMS-A, CRPR 1B.2	Vernal pools within grassland. Some sites on clay soil of granitic origin. Elevation: 50-4,170 feet. Blooming period: Apr-July.	No	Not likely to occur, there are vernal pool habitats present in the Proposed Project; but nearest known occurrences is not in known range of species. 13 miles away from the Proposed Project.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	BLMS-A, SE, CRPR 1B.2	Clay soils in vernal pools and lake margins of marshes and swamps. Elevation: 30–7,790 feet. Blooming period: April–August.	No	May occur, there are vernal pool habitats present in the Proposed Project.
Mariposa lupine *Lupinus citrinus* var. *deflexus*	ST, CRPR 1B.2	Granitic and sandy soils in chaparral and cismontane woodland. Elevation: 1,310–2,000 feet. Blooming period: April–May	No	Not likely to occur, outside of the known range of the species.
shaggyhair lupine *Lupinus spectabilis*	BLMS-A, CRPR 1B.2	Chaparral, cismontane woodland. Open rocky slopes of serpentine. Mostly on serpentine chaparral surrounded by grey pine woodland. Elevation: 0–1,540 feet. Blooming period: Apr–May.	Yes	**CONFIRMED PRESENT in the Proposed Project.** There were 10 occurrences located on the Proposed Project, on the following lands: 4 BLM; 3 Merced, 3 Private There are chaparral and cismontane woodland (specifically gray pine woodland) habitats as well as serpentine outcrops present in the Proposed Project. Protection plans will be put in place.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	CRPR 1B.1	Often acidic soils in vernal pools. Elevation: 65–1,085 feet. Blooming period: April–May	No	May occur, there are vernal pool habitats present in the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Shining navarretia *Navarretia nigelliformis* ssp. *radians*	BLMS-A, CRPR 1B.2	Sometimes in clay soils in vernal pools, grassland, and cismontane woodland. Elevation: 210–3,280 feet. Blooming period: March–July	No	May occur, there are vernal pool habitats present in the Proposed Project.
Colusa grass *Neostapfia colusana*	FT, SE, CRPR 1B.1	Large vernal pools with adobe soils. Elevation: 15–655 feet. Blooming period: May–August	No	Not likely to occur, large vernal pools are absent from the Proposed Project and the nearest locations known are over 10 miles away.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT, SE, BLMS-A, CRPR 1B.1	Vernal pools. Elevation: 30–2,475 feet. Blooming period: April–September	No	May occur, there are vernal pool habitats present in the Proposed Project.
hairy Orcutt grass *Orcuttia pilosa*	FE, SE, BLMS-B, CRPR 1B.1	Vernal pools. Elevation: 150–655 feet. Blooming period: May–September	Yes	May occur, there are vernal pool habitats present in the Proposed Project.
eel-grass pondweed *Potamogeton zosteriformis*	CRPR 2B.2	Marshes, ponds, lakes, and streams. Elevation: 0–7,000 feet. Blooming period: June–July.	No	May occur, there are lake and stream habitats present in the Proposed Project.
Hartweg's golden sunburst *Pseudobahia bahiifolia*	FE, SE, CRPR 1B.1	Valley and foothill grassland, cismontane woodland. Clay soils, often acidic. Predominantly on the northern slopes of knolls, but also along shady creeks or near vernal pools. Elevation: 195–660 feet. Blooming period: March–May.	Yes	May occur, there are grassland, cismontane woodland, and vernal pool habitats present in the Proposed Project.
Sanford's arrowhead *Sagittaria sanfordii*	BLMS-A, CRPR 2B.2	Fresh water marshes and swamps that are typically shallow. Elevation: 0–2,132 feet. Blooming period: May–October	No	Not likely to occur, marshes and swamps are not present in the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Keck's checkerbloom *Sidalcea keckii*	FE, CRPR 1B.1	Serpentine or clay soils in cismontane woodland and grassland. Elevation: 245–2,135 feet. Blooming period: April–June	No	Not likely to occur, confirmed collections of this species are more than 50 miles from the project. The nearest records in CNDDB both state that the plants were either severely damaged or that identification could not be fully confirmed.
Green's tuctoria *Tuctoria greenei*	FE, SR, CRPR 1B.1	Vernal pools. Elevation: 95–3,510 feet. Blooming period: May–July (September)	Yes	May occur, there are vernal pool habitats present in the Proposed Project.
Invertebrates				

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Crotch's bumble bee *Bombus crotchii*	SCE	Occurs primarily in California, ranging through most of southwestern California from the coast and Coast Range mountains, adjacent foothills. Historically common throughout through the Central Valley, and to the southern two-thirds of California but now absent from most of this historic range. Known to inhabit open grasslands and shrublands. Requires floral resources and undisturbed nesting and overwintering sites. Known to produce annual colonies and typically nests underground, relying on sufficient availability of rodent or other animal burrows as potential nesting sites. The flight period for Crotch's bumble bee queens in California is from late February to late October. The flight period for workers and males is from late March through September. Mated queens overwinter in soft debris, leaf litter, or disturbed soils and emerge in early spring to feed and search for a new colony site (CDFW 2019). Nests are also sometimes located above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees (ICUN 2023).	No	May occur, there are grassland and scrub habitats present, and there are multiple known occurrences of the species from within five miles of the Proposed Project Boundary.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Conservancy fairy shrimp *Branchinecta conservatio*	FE	Endemic to California vernal pools, almost entirely in the Central Valley, with the exception of one population along the central coast in Ventura County. Majority of sites inhabited by this species are large and turbid pools which remain inundated much longer than typical vernal pools (USFWS 2012).	Yes	May occur, there are vernal pool habitats present in the Proposed Project Boundary, and critical habitat for the species is approximately 0.25 mile southwest of the Proposed Project Boundary. Protection plans will be put in place.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Endemic to the grasslands of the Central Valley and the Central and South Coast Range mountains of California, and the Agate Desert of southern Oregon. Found only in cool water vernal pools and vernal pool-like habitats; does not occur in riverine, marine, or other permanent bodies of water (USFWS 2007).	Yes	CRITICAL HABITAT PRESENT in the Proposed Project. Suitable habitat is present in the Proposed Project in vernal pools. May affect, not likely to adversely affect.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Monarch butterfly *Danaus plexippus*	FC	In the larva stage, monarch butterflies require milkweed host plants, primarily of the genus Asclepias. Adult monarch butterflies require a diverse set of nectaring resources, which would include milkweed for ovipositioning in addition to larval feeding. Monarchs will often also use a variety of roosting trees along their fall migration routes. Overwintering habitats in California include groves of blue gum eucalyptus (Eucalyptus globulus), Monterey pine (Pinus radiata), and Monterey cypress (*Hesperocyparis macrocarpa*) all of which are used as roost trees (USFWS 2020).	No	May occur, there is at least one recorded occurrence of milkweed along the shores of Lake McClure.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Dependent on host plant, elderberry (*Sambucus* spp.), which most commonly grows in riparian woodlands, but also in some upland habitats such as oak savannas and annual grasslands. Current presumed range in Central Valley extends from Shasta County south to Fresno County, including the valley floor and lower foothills up to about 500 feet in elevation (USFWS 2017).	Yes	May occur, there is documented elderberry shrub during 2010/2011 surveys of suitable size to support the species and signs of potential exit holes. No beetles were observed.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	Found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands. Patchily distributed across the Central Valley from Shasta County south to Tulare County with isolated occurrences in the East Bay Area (USFWS 2007).	No	Not likely to occur, Proposed Project is outside of the known range of the species. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Amphibians				

California tiger salamander – central California DPS *Ambystoma californiense* pop. 1	FT ST	Occurs in the San Joaquin-Sacramento River valleys, bordering foothills, and coastal valleys of Central California from sea level in the Central Valley up to 3,940ft in the coast ranges and 1,640ft in the Sierra Nevada foothills. Have been reported to migrate up to 1.3 miles between breeding ponds and upland habitat. Require large tracts of upland habitat occupied by small burrowing mammals, especially California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thommomys bottae*). Upland habitat usually dominated by grassland, oak woodland, or oak savannah. Breed in vernal pools, natural ponds, livestock ponds, and other modified permanent or ephemeral ponds usually free of predatory fish or breeding bullfrog populations. May sometimes breed in ditches containing seasonal wetlands, slow-moving swales, and creeks near other suitable breeding habitat. Also have been documented breeding in sewage treatment ponds. Optimal breeding ponds dry for at least 30 days in the summer to preclude fish and bullfrogs (USFWS	Yes	May occur, there is grassland and seasonal wetland habitats within the Proposed Project Boundary may provide suitable aquatic and upland habitat for the species. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
		2017). Typically, breeding pools have moderate to high levels of turbidity. California tiger salamanders rarely use ponds with clear water. Studies show that 95% of the population is within a 1.16-mile dispersal distance of a breeding pond. While topographic differences between flat areas and rolling hills might not be a factor in dispersal distance, land use and vegetation appear to play a role in dispersal route. Studies have found the species were most likely to successfully traverse chaparral, followed by grassland, and then oak woodland habitat and adults were more abundant.		
Limestone salamander *Hydromantes brunus*	ST, FP	Highly restricted species, known primarily from the mixed chaparral habitats along the Merced River and its tributaries in Mariposa County from 890 to 2,624 feet in elevation. It is sometimes associated with limestone outcrops (CWHR Program Staff 2018).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Thirteen individuals observed by Merced ID at four separate locations around Lake McClure in 2010. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Foothill yellow-legged frog – South Sierra DPS *Rana boylii* pop. 5	FE SE	This DPS ranges from the South Fork American River sub-basin to the transition zone between the Sierra Nevada and the Tehachapi Mountains (USFWS 2021). Generally found in shallow flowing streams and rivers with at least cobble sized substrate. Breeding generally occurs at the margins of wide shallow channels with reduced flow variation near tributary confluences. Specifically, egg masses are placed in low flow locations on or under rocks with preferred substrates being boulders, cobbles, or gravel. Eggs have been found at depths to 34 inches in water velocities of 0 - 0.69 feet per second and at most 40 feet from shore. Maximum water temperature for breeding is 79°F and 48° to 70°F is the preferred range. Tadpoles avoid areas below 55°F and prefer temperatures between 62°F and 72°F (Thomson et al. 2016).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Individuals known from Sherlock Creek and Hell Hollow just outside of the FERC Project Boundary. Protection plans will be put in place.

California red-legged frog *Rana draytonii*	FT SSC	Aquatic breeding habitat is generally found in still or slow-moving water and can have a wide range of edge and emergent cover amounts. In streams and creeks, frogs have been documented in low, moderate, high, and extreme gradients ranging from 0.4 percent to 21.0 percent slopes; however, the most stable populations and the highest breeding densities occur in low and moderate stream gradient types (less than 4 percent) with minimal scouring flows. Breed from November to May and breeding sites typically retain water for a minimum of 20 weeks to allow for tadpole development and metamorphosis. Breeding sites typically also contain shelter such as vegetation, rocks, or other cover and water more than 0.7 m deep. Typically use partially shaded pools and creeks with emergent vegetation as breeding habitat containing shelter such as vegetation, rocks, or other cover and water more than 0.7 m deep but the species can deposit eggs in a large variety of habitats. Also typically deposit egg masses in relatively shallow water (less than 38 cm) on emergent vegetation within 1 meter of shore but can	Yes	Recovery Unit Not likely to adversely affect. Not likely to occur, but protection plans will be put in place for the species.

		deposit eggs on a wide variety of substrates including boulders and cobbled substrate and submerged tips of overhanging branches and up to 12 m from shore in water up to 3.2 m deep. Can successfully breed in ponds with water temperatures up to 30o C. Ponds or streams completely choked with emergent vegetation such as cattails or giant reed (Arundo sp.) are generally considered unsuitable for breeding because the dense vegetation can impede adult movement. Non-breeding aquatic habitat is found in similar aquatic features as breeding habitat, but these features may not hold water long enough for the species to successfully complete its aquatic life cycle. While generally found in freshwater habitats, can survive in saline water for short periods and have been observed in salinities up to 36 ppt. Non-breeding aquatic features provide habitat for foraging, shelter, movement, and other essential behaviors. In addition to the aquatic features used for breeding, aquatic non-breeding habitat may include plunge pools within intermittent creeks, seeps, quiet water refugia during high water		

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
		flows, and springs of sufficient flow to withstand the summer dry period. Readily use disturbed areas such as channelized creeks and drainage ditches as aquatic habitat. Suitable upland habitat for the California red-legged frog includes nearly any terrestrial area within 100 m of breeding or non-breeding aquatic habitat that contains cover features such as dense riparian vegetation, wood or rock debris, burrows, or anthropogenic cover including discarded tires and wooden boards. Dispersal habitat consists of terrestrial areas up to 3.2 km away from breeding and non-breeding aquatic habitat used to move along and between watersheds during long-distance dispersal events (USFWS 2022).		

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Western spadefoot *Spea hammondii*	FPT SSC	Endemic to California and northern Baja California ranging from Redding throughout the central valley and associated foothills, through the South Coast Ranges into southern California west of the Peninsular mountains. Breeding sites include vernal pools, temporary rain pools, cattle tanks, and occasionally pools of intermittent streams typically in turbid water with little to no cover that remain wet for at least 30 days to allow for transformation of larvae (Nafis 2023). Prefers open areas with sandy or gravely soils, in a variety of habitats including grasslands, oak woodlands, coastal sage scrub, chaparral, sandy washes, floodplains, alluvial fans, playas, and alkali flats. Pools with invasive species, such as crayfish (*Pacifasticus* spp.), or bullfrogs (*Lithobates catesbeianus*) often, but not always, exclude this species (Thomson et al. 2016).	Yes	Not likely to occur, but protection plans will be put in place for the species.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Reptiles				
Northwestern pond turtle *Actinemys marmorata*	FPT, SSC	Ranges throughout California except for Inyo and Mono Counties. Generally, occurs in various water bodies including permanent and ephemeral systems either natural or artificial. Upland habitat that is at least moderately undisturbed is required for nesting and overwintering, in soils that are loose enough for excavation (Thomson et al. 2016).	Yes	**CONFIRMED PRESENT within the Proposed Project.** Basking observed in the Hornitos Bridge cove at Merced Falls. Protection plans will be put in place.
Coast horned lizard *Phrynosoma blainvillii*	SSC	Ranges in the southern half of California outside of the desert, along the foothills of the Sierra Nevada Mountains to Butte County, and along the Central Coast ranges up to Contra Costa County. Generally, occurs in sage scrub, dunes, alluvial scrub, annual grassland, chaparral, oak, riparian, and Joshua tree woodland, coniferous forest, and saltbush scrub. Needs loose, fine soils for burrowing, open areas for basking, and dense foliage for cover. Negatively associated with Argentine ants (*Linepithema humi*) (Thomson et al. 2016).	Yes	May occur, suitable habitat does exist within the Proposed Project; however, there are no known occurrences of the species within 5 miles of the Proposed Project Boundary.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Fish				
Green sturgeon – southern Distinct Population Segment (DPS) *Acipenser microstrips*	FT SSC	Green sturgeon is an anadromous and iteroparous species, spending the majority of their life in marine and estuarine environments and periodically migrating into freshwater streams to spawn. Spawning occurs in the spring from March-June. Larval and juvenile green sturgeon typically reside within freshwater for approximately one year prior to outmigrating (Moyle 2002). Water temperatures > 68 °F (20 °C) are harmful to eggs (Van Eenennamm et al. 2005) and resulting deformities in juveniles have been documented where eggs and embryos are subjected to temperatures > 72 °F (22 °C) (Mayfield and Cech 2004). Water temperatures < 52 °F (11 °C) and > 66 °F (19 °C) resulted in reduced growth rates (Poletto et al 2018).	Yes	Not likely to occur. There is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, all of which are downstream of the Proposed Project area. Green sturgeon detections or captures are rare and have not been documented in the Merced River upstream of the confluence with the San Joaquin River. One green sturgeon was captured on the San Joaquin River upstream of the confluence with the Merced River near Hills Ferry on 11 April 2020 (Root et al. 2020). This time coincides with the spawning period. However, green sturgeon observations are rare in the San Joaquin watershed with one previous record near Knight's Ferry on the Stanislaus River in 2017 (Anderson et al. 2018 as cited in Root et al. 2020)

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
White sturgeon – *Acipenser transmontanus*	SSC	White sturgeon is an anadromous and iteroparous species, spending the majority of their life in marine and estuarine environments and periodically migrating into freshwater streams to spawn. Studies indicate a positive correlation of temperature with growth rates (Jay et al. 2020). Sub-lethal temperature for juveniles is 70 °f (21 °C) (Earhart et al 2023; Penman 2021).	No	Not likely to occur. There is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, all of which are downstream of the Proposed Project area. White sturgeon has not been documented in the Merced River upstream of the confluence with the San Joaquin River; however, they do occur in the San Joaquin River. White sturgeon occurs throughout the year in the San Francisco estuary and have been captured in the San Joaquin River as well as its tributaries (Jackson et al. 2016; Diviney and Dahl 2024). Spawning occurs in the San Joaquin River (Jackson et al. 2016).

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Pacific lamprey *Entosphenus tridentatus*	SSC	Pacific lamprey is a widely distributed anadromous species. Spawning typically occurs in gravel riffles at water temperatures between 53.6 and 64.4°F (12.0 to 18.0°C), and embryos hatch in approximately 19 days at 59.0°F (15.0°C) (Moyle, 2002). Ammocoetes bury themselves in shallow eddies and backwaters where they rear in silt, sand, and mud.	Yes	Not likely to occur. There is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, all of which are downstream of the Proposed Project area. However, a total of five of 72 Pacific Lamprey were captured between Merced Falls and Crocker-Huffman during surveys from 2006 to 2008 with all five being ammocoetes (FERC 2015). This indicates that there is some limited passage for adults to spawn in the reach between Crocker-Huffman and Merced Falls Dam. However, there is no recent documentation of this species upstream of Merced Falls Dam.

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Kern brook lamprey *Lampetra hubbsi*	SSC	Kern brook lamprey is a non-anadromous and non-predatory lamprey endemic to the San Joaquin River Basin. Adults spawn in spring in gravel riffles. Ammocoetes are found in sand and mud where water is shallow and slow-moving and summer water temperatures are generally less than 77.0°F (25.0°C).	Yes	Not likely to occur. This species occurs downstream of the Proposed Project Area. There is no documentation of this species upstream of McSwain Dam as well as no passage at the dam. Kern Brook Lamprey ammocoetes have been reported in the Merced River upstream of Merced Falls Dam (FERC 2015), between Merced Falls dam and Crocker-Huffman diversion dam (Stillwater Sciences 2008; PG&E 2011), and downstream of Crocker-Huffman diversion dam (Stillwater 2008).
Hardhead *Mylopharodon conocephalus*	SSC	Generally found in larger low- to middle-elevation streams in the Sacramento and San Joaquin watersheds. Hardhead inhabit deep pools and runs with slow velocities and prefer water temperatures between 75.2 °F (24.0 °C) and 82.4°F (28.0 °C) (Moyle 2002). Spawning occurs in gravel during the spring, and larvae utilize littoral areas and streambanks where vegetation is present (Baird and Girard 1854).	Yes	CONFIRMED PRESENT in the Proposed Project Boundary. The hardhead has been documented in the Merced River upstream of Lake McClure and downstream of Crocker-Huffman diversion dam (Stillwater Sciences, 2008). In the 2006 to 2008 fish surveys, the hardhead was relatively abundant both upstream and downstream of the Proposed Project, comprising 7.8 percent and 8.3 percent of the total fish abundance in the upper Merced River and lower Merced River, respectively.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Steelhead – central valley DPS *Oncorhynchus mykiss irideus*	FT	Includes naturally spawned anadromous steelhead originating below natural and manmade impassable barriers from the Sacramento and San Joaquin Rivers and their tributaries. Spawning habitat includes gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning habitat includes estuarine and marine waters. Spawning occurs in riffles and pool tails with abundant gravel ranging in size from 0.4 to 1.8 inches (median particle size, or D50) and low fine sediment concentrations. Recommended water temperatures are < 64.4 °F (< 18°C) for adult immigration and < 55.4 °F (< 13°C) for spawning, incubation, and emergence. Steelhead fry and juveniles rear in a wide range of hydraulic conditions, generally occupying areas with rocky substrates and overhead cover.	Yes	Not likely to occur. There is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, all of which are downstream of the Proposed Project area. While the resident form of steelhead, known as Rainbow trout, is present in the upper reaches of the Merced, Pearse and Campbell, 2017, concluded that the hatchery-dominated population of *O. mykiss* in the lower Merced River limits the expression of anadromy and that few anadromous salmonids exist in the river's upper reaches (if any, as there is no existing evidence to date).

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Chinook Salmon – Central Valley fall-run Evolutionarily Significant Unit (ESU) *Oncorhynchus tshawytscha*	FSC SSC	Fall-run Chinook enter freshwater during the late summer and fall and spawn shortly after. Chinook build redds in loose gravel, and juveniles rear in the river and floodplains as they move downstream. Water temperatures greater than 80°F (26.7 °C) are lethal to adults.	Yes	Not likely to occur. Historically, fall-run Chinook migrated upstream to spawn in the Merced River at least as far as present-day Lake McClure (Yoshiyama et al., 2001). Today, there is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, and spawning to the lower Merced River downstream of the dam. CDFW supplements Merced River's natural population with fish from the CDFW Merced River Hatchery.
Chinook Salmon – Central Valley spring-run ESU *Oncorhynchus tshawytscha*	FT FXN (in San Joaquin Watershed) ST	Spring-run Chinook migrate upstream as adults, holding in deep cold pools over the summer. The numbers of adults are dependent on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures greater than 80°F (26.7 °C) are lethal to adults.	Yes	Not likely to occur. Historically spring-run Chinook Salmon migrated to the upper Merced River to spawn but were extirpated in the 1940s (Yoshiyama et al. 2001). There is no functional fish passage at Crocker-Huffman Diversion Dam, Merced Falls Dam, or McSwain Dam, all of which are downstream of the Proposed Project area.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Sacramento Splittail *Pogonichthys macrolepidotus*	SSC	A native minnow found in estuarine habitat and low-elevation rivers in the Sacramento-San Joaquin River systems. Adults migrate upstream in winter and spring, spawning in areas of flooded vegetation. Larvae rear in floodplain areas and along shorelines where vegetation is present. Sacramento Splittail are tolerant of high salinity (up to 29 parts per thousand) and low DO (less than 1 mg/L), and typically in water temperatures between 41 and 75°F (Moyle 2002).	Yes	Not likely to occur. This species was observed in the lower Merced River during spring fish surveys in 2007 and 2008 between the San Joaquin River confluence and RM 26.6 (Stillwater Sciences, 2008), it was not observed above the Crocker Huffman Diversion Dam.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Birds				
American goshawk *Accipiter atricapillus*	BLM-S, SSC	Nests in mature and old-growth coniferous forests at high elevations in the Sierra Nevada, Cascade, North Coast, and Transverse Ranges. Prefers stands with Pacific Ponderosa pine (*Pinus ponderosa* var. *pacifica*), Jeffrey pine (*Pinus jeffreyi*), Lodgepole pine (*Pinus contorta*), Douglas-fir (*Pseudotsuga menziesii*), and rarely pinyon-juniper (*Pinus monophylla* and *Juniperus spp.*) or quaking aspen (*Populus tremuloides*). Prefers stands with larger trees, denser canopies, and relatively open understories (Shuford and Gardali 2008).	No	Rare visitor to the Proposed Project Boundary from higher elevations in fall and winter. Would not nest in the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Tricolored blackbird *Agelaius tricolor*	ST, SSC BLM-S	Mostly a year-round resident in California. Common locally throughout Central Valley and in coastal districts from Sonoma County south. Breeds locally in northeastern California. In winter, becomes more widespread along the central coast and San Francisco Bay area, and can be found in portions of the Colorado Desert. Preferred nesting habitat includes cattails (*Typha* spp.), bulrushes (*Schoenoplectus* spp.), Himalayan blackberry (*Rubus armeniacus*), and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 30 feet or more wide but, in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (CWHR Program Staff 2008).	Yes	Not likely to occur, suitable habitat does exist within the Proposed Project. Low potential for the species to nest in blackberry thickets with sedges; however, there are no known occurrences from within 5 miles.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Golden eagle *Aquila chrysaetos*	BGEPA FP BLM-S	Uncommon resident in hills and mountains throughout California, and an uncommon migrant and winter resident in the Central Valley and Mojave Desert. Prefers rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, cliffs, and rock outcrops. (Polite et al. 1990)	Yes	Not likely to occur, suitable habitat exists within the Proposed Project; however, there are no recorded occurrences within 5 miles of the Proposed Project and few that are within 30 miles.
Short-eared owl *Asio flammeus*	SSC	Found in open, treeless areas with elevated sites for perches, and dense vegetation for roosting and nesting. Associated with perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east Sierras from Lake Tahoe to Inyo County and San Joaquin Valley. Winters in the Central Valley, western Sierra Nevada foothills and along the coastline (CWHR Program Staff 2005).	Yes	Not likely to occur, while marginal habitat exists within the Proposed Project, it is unlikely that the area would support breeding populations. There are no recorded occurrences within 5 miles of the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Long-eared owl *Asio otus*	SSC	Widespread but uncommon and local across California year-round, except in the Central Valley where it is a rarely encountered migrant and winter resident. Nests and roosts in dense stands of live oak (Quercus spp.) in riparian thickets with dense canopies near meadow edges. Also nests in dense stands of conifers at higher elevations (CWHR Program Staff 2005).	Yes	May occur, suitable habitat exists at margins of the Proposed Project. Breeding was documented in Mariposa County, and observations in the late 1980s suggest breeding has continued (Shuford and Garbaldi 2008).
Burrowing owl *Athene cunicularia*	SC, SSC BLM-S	Resident in much of the state in open, dry grasslands and various desert habitats. Requires open areas with mammal burrows; especially those of California ground squirrel (Otospermophilus beecheyi) Inhabits rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots, and other open human disturbed lands such as airports and golf courses. Absent from northwest coast and elevations above 5,500 feet (CWHR Program Staff 1999).	Yes	May occur, there are grassland and scrub habitats in the Proposed Project. While there are no known breeding occurrences of the species from the Proposed Project, it is noted in the FEIS that "FWS comments that burrowing owl has been known to occur in the Proposed Project vicinity" and that "because burrowing owls occur in ground squirrel burrows, they are vulnerable to rodent control methods such as burrow fumigation and burrow collapse."

Swainson's hawk *Buteo swainsoni*	ST	Nests in oak savanna and cottonwood riparian areas adjacent to foraging habitat of grasslands, agricultural fields, and pastures where they often follow farm equipment to gather killed and maimed rodents. Increasingly also nests in sparse stands of gum trees (Eucalyptus spp.) and Australian pines (Casuarina equisetifolia) and often forage along roadsides and grassy highway medians. Breeding resident in the Central Valley, Klamath Basin, Northeastern Plateau, and in juniper-sagebrush flats of Lassen County. Limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. Winters primarily in Argentina, with most birds absent from California October through February, though a few overwinter in the Sacramento-San Joaquin River Delta. Prolific migrant through southern California in spring and fall, with large mixed-age groups of birds frequently observed kettling high overhead on thermals or foraging together on freshly cut agricultural fields (CWHR Program Staff 2006). Regulatory buffer of 1,320 feet (¼ mile) from active nests. Buffer should be increased to 1/2 mile if	Yes	May occur, there are oak savanna, cottonwood riparian, and grassland habitats in the Proposed Project, and while there are no known occurrences of the species nesting within the Proposed Project, the species is known to migrate through the Proposed Project Boundary and has been expanding its nesting range in recent years.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
		nesting area is away from urban development (CDFW 1994)		
Vaux's swift *Chaetura vauxi*	SSC	Nests in cavities in a variety of trees and less frequently in artificial structures such as smokestacks. Shows an affinity for old-growth coast redwood (Sequoia sempervirens) and Douglas fir forests with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (Shuford and Gardali 2008).	No	May occur, regular spring and fall migrant through the Proposed Project Boundary, but very unlikely to nest in the Proposed Project, preferring higher elevations with more old-growth forest habitat.
Northern harrier *Circus hudsonius*	SSC	Nests on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in a variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats, and desert sinks (Shuford and Gardali 2008).	Yes	May occur, there are grassland and scrub habitats in the Proposed Project, and weedy borders of waterbodies that provide suitable foraging habitat for the species. While there are multiple known occurrences of the species from throughout the Proposed Project (eBird 2024), the vast majority of these are single individuals during the fall and winter months. The species is not likely to nest in the Proposed Project Boundary.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Bald eagle *Haliaeetus leucocephalus*	BLM, BGEPA SE, FP	Permanent resident in the highest Coast Range mountains, across the Cascade Range, and down the Sierra Nevada to the eastern Transverse Ranges of San Bernardino and Riverside Counties. Uncommon migrant and winter visitor to lowland rivers, lakes, and reservoirs. Nests in large, old-growth, or dominant live trees with open branchwork, especially ponderosa pine (*Pinus ponderosa*). Requires large bodies of water or rivers with abundant fish, and adjacent snags (CWHR Program Staff 1999).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Five sightings observed during protocol surveys in the winter and spring at Merced Falls, Lake McSwain, at Barrett Cove, and on Mack Island. Protection plans will be put in place.
Yellow-breasted chat *Icteria virens*	SSC	Nests in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow borders of streams, creeks, sloughs, and rivers. Often nest in dense thickets of blackberry (Rubus spp.) and willow (Salix spp.) (Shuford and Gardali 2008).	Yes	May occur, there are riparian areas and blackberry thickets in the Proposed Project Boundary, and there is at least one recent documented spring occurrence of the species from Bear Valley near the Proposed Project (eBird 2024).

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Loggerhead shrike *Lanius ludovicianus*	SSC	Shrublands and open woodlands with a fair amount of grass cover and areas of bare ground. Requires tall shrubs or trees, fences, or power lines for hunting perches and territorial advertisement. Also requires open areas of short grasses, forbs, or bare ground for hunting, large shrubs or trees for nest placement, and thorny vegetation or barbed wire fences for impaling prey. Ranges across most of the state but absent from the highest mountains and the northwest forests and coast (Shuford and Gardali 2008).	Yes	May occur, suitable habitat exists where areas of open grasslands intersect the Proposed Project. No occurrences recorded within 5 miles of the Proposed Project Boundary; however, there is at least one occurrence within 10 miles (eBird 2024).
Black-crowned night heron *Nycticorax nycticorax*	BLM-S	Nests in emergent vegetation cover such as densely foliaged trees, shrubbery, or vine tangles, or in freshwater or brackish emergent wetlands (Levengood et al. 2005).	Yes	May occur, suitable habitat may exist near aquatic features of the Proposed Project Boundary.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
American white pelican *Pelecanus erythrorynchos*	SSC	In California, nests almost exclusively in large lakes in the Klamath Basin region. On migration and over winter, occurs across much of the state in open wetlands and sheltered bays and lagoons. Nests on ground on earthen, sandy, and rocky islands or rarely on peninsulas or floating tule mat islands. Nests may be in the open in the sand or interspersed with or adjacent to tall weeds and open, low-stature shrubs. Roosts along water edges, beaches, sandbars, or old driftwood (Shuford and Gardali 2008).	Yes	May occur, suitable habitat exists, and the species may be present within the Proposed Project during migration periods. However, the species does not nest in the region.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Purple martin *Progne subis*	SSC	Present in California from mid-March through late September. Requires concentrations of nesting cavities, relatively open-air space above accessible nest sites, and relatively abundant aerial insect prey. In the coastal mountains, Cascade Range, and Sierra Nevada foothills, inhabits open forests, woodlands, and riparian areas. Extirpated as a breeder from most of the Central Valley except the Sacramento area where it has taken to nesting in hollow-box bridges. In southern California, now only a rare and local breeder on the coast and in interior mountain ranges, with few breeding localities. Absent from higher desert regions except as a rare migrant (Shuford and Gardali 2008).	Yes	May occur, the Proposed Project Boundary is situated outside the known breeding range of the species, and while suitable habitat could occur within riparian areas and blue oak woodlands of the Proposed Project Boundary, the species is much more likely to occur as a migrant or post breeding visitor to the Proposed Project Boundary then to nest there. No recorded occurrences of breeding colonies within 5 miles of the Proposed Project Boundary.
Yellow warbler *Setophaga petechia*	SSC	Usually found in riparian deciduous habitats in summer: cottonwoods (Populus ssp.), willows (Salix ssp.), alders (Alnus ssp.), and other small trees and shrubs typical of low, open-canopy riparian woodland. Also breeds in montane shrubbery in open coniferous forests (CWHR Program Staff 2005).	Yes	May occur, suitable habitat exists within riparian areas of the Proposed Project Boundary where cottonwood and willows occur in high densities. No recorded occurrences within 5 miles of the Proposed Project.

California spotted owl (Sierra Nevada DPS) *Strix occidentalis occidentalis*	FCT, SSC	Range from the western side of the Sierra Nevada from Shasta County to Tehachapi Pass in Kern County and are sparsely distributed in on the eastern side of the Sierra Nevada into western Nevada. Breeding season begins in mid-February and adults typically do not shift territories unless the breeding pair was previously unsuccessful, or habitat is altered. Nest in mature, multi-layer forest with complex structure, larger trees (greater than 24in dbh), high canopy cover, and large amounts of woody debris. Typically occur in mid-elevation ponderosa pine (Pinus ponderosa), mixed conifer, white fir (Abies concolor), and mixed-evergreen forest with few occurring in the oak woodlands of western foothills. Nest in large trees or snags with an average dbh of 49 inches and heigh of 103 feet. Areas with canopy cover greater than 70 percent are optimal for nest sites, but occupancy sharply declines when canopy cover is less than 40 percent. The presence of trees over 157 feet tall and high density of large trees are other good indicators of high-quality habitat. Above approximately 3,937 feet in coniferous forest, the	No	Not likely to occur, suitable habitat is absent from the Proposed Project. There are no known occurrences from anywhere near the Proposed Project.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
		primary prey is Humboldt's flying squirrel (Glaucomys oregonensis) but primarily eat woodrats (Neotoma spp.) at lower elevations (USFWS 2022b).		
Least Bell's vireo *Virea bellii pusillus*	FE, SE	Once occupied much of the Central Valley, but has disappeared from most its former range, and is now restricted to southern California from southern Inyo and Monterey Counties south through the South Coast and Inland Empire regions. Obligate riparian breeder, favoring cottonwood (Populus spp.), willow (Salix spp.), and oak (Quercus spp.) woodlands, and mule fat (Baccharis salicifolia) scrub along watercourses (USFWS 2006).	No	Not likely to occur, the species formerly ranged across much of California but has been extirpated from most of its former range and now only occurs in southern California. Outside known current range of species.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Mammals				
Pallid bat *Antrozous pallidus*	SSC BLM-S	Ranges across all of California in a wide variety of habitats with preference for arid and semi-arid, and rocky, mountainous areas (Miller 2002). Day and night roosts include rocky crevices, caves, mines, trees (snags, exfoliating bark, hollows of larger trees) and anthropogenic structures (WBWG 2005). Common tree species used are coast redwoods; oaks (valley, live, blue); pine (Ponderosa, lodgepole). Pallid bats are documented to have very low roost fidelity and will often switch roosts seasonally or even daily. When hibernating, pallid bats can be found roosting in buildings, caves, or rock crevices; overwintering roosts will typically be found in protected structures out of direct sunlight with stable temperatures (Miller 2002). It is understood that the number of individuals within a maternity roost will be greater than normal, but roost selection does not vary greatly from normal behaviors (WBWG 2005).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics at New Exchequer Powerhouse, McSwain Powerhouse Intake Structure, and Train Tunnel No. 2 Seepage Weir. Documented by capture at Horseshoe Bend RA, Barrett Cove RA, and Lake McSwain RA. Documented roosting in mill ruins by visual assessment. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Sierra Nevada mountain beaver *Aplodontia rufia californica*	SSC	Ranges across the Sierra Nevada Mountains from Shasta and Lassen Counties south to Tulare County. Generally found in dense riparian forests and open shrubscapes around most forest types. Specifically found in forests with open to moderate canopy cover and a dense understory near water. Requires deep friable soils and a cool moist microclimate (Polite and White 1990).	No	Not likely to occur, Proposed Project Boundary is below the elevational range of the subspecies, with the nearest known occurrences over 20 miles east of and over 2,000 feet above the Proposed Project.
Ringtail *Bassariscus astutus raptor*	FP	Occurs in various riparian habitats, and in brush stands of most forest and shrub habitats, at low to middle elevations. Suitable habitat consists of a mixture of forest and shrubland in close association with rocky areas or riparian habitats. Usually not found more than 0.6 mile from permanent water. Hollow trees, logs, snags, cavities in talus slopes and other rocky areas, and other recesses are used for cover. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests (CWHR Program Staff 2005).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Observed during bat surveys at night in switchyard. Protection plans will be put in place.

Townsend's big-eared bat *Corynorhinus townsendii*	SSC BLM-S	This species has a broad range in the western U.S., occupying montane forests dominated by pine, fir, and aspen trees as well as subalpine areas and arid desert habitats (Adams 2003, Kunz and Martin 1982). Roosting commonly occurs in caves and cave-like structures, including anthropogenic mines and buildings, bridges, and hollow trees (WBWG 2005). Abandoned buildings are typically used in summer months, with a preference of caves and mines in the winter (Adams 2003). Maternity colonies are relatively well documented compared to other species. These colonies form between March and June and can hold between a few individuals and several hundred individuals (WBWG 2005). These maternity colonies will almost exclusively be found in caves and cave-like systems. Townsend's big-eared bats are extremely sensitive to disturbance and will relocate roosts at minimal signs of human activity (Kunz and Martin 1982). This species may use different roosting sites for day and night (CWHR Program Staff 2000).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics at New Exchequer Powerhouse, McSwain Powerhouse Intake Structure, Below Exchequer Dam, Horseshoe Bend RA, Barrett Cover RA, McClure Point RA, and Lake McSwain RA. Documented roosting in mill ruins by visual assessment.
Spotted bat *Euderma maculatum*	SSC BLM-S	Ranges across the eastern half of California from the	Yes	**CONFIRMED PRESENT in the Proposed Project**.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
		low foothills and over the Cascade and Sierra Nevada crests to Nevada, as well as all of Southern California except for the lowlands of Orange and Los Angeles Counties. Generally, occurs in desert, mixed coniferous forests, and grassland habitats. Prefers to roost in rock crevices on cliffs but will sometimes use caves and buildings (CWHR Program Staff 2000).		Documented via acoustics.
Western mastiff bat *Eumops perotis californicus*	SSC BLM-S	Ranges throughout all of Southern California, the central coast, and the Sierra Nevada Mountains. Generally, occurs in open, arid, or semi-arid habitats. Roosts in rock crevices and buildings. (Ahlborn and White 1990).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics at New Exchequer Powerhouse, McSwain Powerhouse Intake Structure, Train Tunnel No. 2 Seepage Weir, and Lake McSwain RA. Documented via acoustics at Merced Falls. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Hoary bat *Lasiurus cinereus*	BLM-S	Objectively the most widespread bat of all North American bats (WBWG 2024). In the west, hoary bats are widely regarded as a forest obligate species and find themselves roosting in the foliage of both deciduous and coniferous species. The species is highly migratory and can be acoustically detected by monitors placed offshore over open ocean.	No	May occur, suitable habitat exists within the Proposed Project. Not noted in any acoustic records within the Proposed Project Boundary. Acoustically recorded to the northeast of Lake McClure near Chery Lake (BatAMP 2024). Acoustically recorded in NABat GRTS cells 874, 2922, 40810, and 47722 surrounding the Proposed Project. All calls manually vetted to species level (NABat 2024).

Western red bat *Lasiurus frantzii*	SSC BLM-S	Historically, the range of western red bats extended from southern British Columbia down into Mexico, with a gap in the Great Basin Desert (Solick et al. 2020); however, Solick et al. (2020) show more accurate ranges documenting the species from north-central and coastal California to southeastern Arizona and sparsely up into Utah and southwestern Nevada. The western red bat is a foliage roosting species and finds itself in riparian habitats within arid and semi-arid regions of southwestern U.S.; it almost exclusively roosts within densely foliated trees: willow, cottonwood, sycamore, elder, ash species (Andersen and Geluso 2018, Solick et al. 2020). Day and night roosts are commonly on habitat edges near streams or open fields, hidden away in all directions except for below. Have been documented utilizing fruit trees in orchards (Pierson and Rainey 2004). This species is migratory but will hibernate in leaf litter (WBWG 2005). Recent genetic evidence suggests the western red bat is living in sympatry with the eastern red bat (*Lasiurus borealis*) in California. Acoustically and physically ambiguous.	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics at New Exchequer Powerhouse, McSwain Powerhouse Intake Structure, Train Tunnel No. 2 Seepage Weir, Horseshoe Bend RA, and Barrett Cover RA. Protection plans will be put in place.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Western yellow bat *Lasiurus xanthinus*	SSC BLM-S	Historically believed to range exclusively south of the Transverse Range in southern California. New evidence suggests that the species can be found along the coast, in the Central Valley, and potentially in the Sierra Nevada up to approximately the 37th parallel (Haas 2024). Occurs in riparian, palm oasis, and desert wash habitats where well documented. New evidence could expand on habitat type use.	No	Not likely to occur, however new evidence suggests the potential for species to be present in the general area surrounding the Proposed Project.
Small-footed myotis *Myotis ciliolabrum*	BLM-S	Common in arid uplands in California; in coastal California it occurs from Contra Costa County south to the Mexican border. It also occurs on the east side of the Sierra Nevada and in Great Basin and desert habitats from Modoc, Kern, and San Bernardino Counties. Found from sea level to 8,900 feet in elevation. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges and under bark (Granholm et al. 1990).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Long-eared myotis *Myotis evotis*	BLM-S	Found throughout most of California but it avoids the arid Central Valley and hot deserts. It has been found in nearly all brush, woodland, and forest habitats from sea level to 9,000 feet in elevation. Can roost in buildings, crevices, spaces under bark, snags and caves (Granholm et al. 1990).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics.
Little brown bat *Myotis lucifugus*	BLM-S	One of the most widespread bats of North America. Typically found in mesic temperate forests. In the western U.S., the species is able to be found anywhere but hot, arid lowlands. Little brown bat can utilize a variety of roosting habitats, both natural and anthropogenic. Maternity sites include tree cavities, caves, and transportation structures commonly. Hibernacula sites are not well documented in the western U.S.	No	May occur, suitable habitat exists within the Proposed Project. Not noted on any acoustic records in the FEIS within the Proposed Project. Acoustically recorded to the northeast of Lake McClure near Chery Lake (BatAMP 2024). Acoustically recorded in NABat GRTS cells 874, 2922, 40810, and 47722 surrounding the Proposed Project. All calls manually vetted to species level (NABat 2024).

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Fringed myotis *Myotis thysanodes*	BLM-S	Occurs in much of California except the Central Valley and Colorado and Mojave Deserts. Occurs in a wide variety of habitats; records range in elevation from sea level to 9,350 feet in New Mexico (Barbour and Davis 1969). Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer, generally at 4,000 to 7,000 feet (Polite et al. 2005).	Yes	**CONFIRMED PRESENT in the Proposed Project.** Documented via acoustics. Protection plans will be put in place.
Long-legged myotis *Myotis volans*	BLM-S	Common in California, occurring in coastal ranges from Oregon to Mexico, the Cascade/Sierra Nevada ranges to southern California, most of the Great Basin, and in several Mojave Desert mountain ranges. It is only absent from the Central Valley, lower elevations of the Colorado and Mojave deserts, and from eastern Lassen and Modoc Counties. Most common in woodland and forest habitats above 4000 feet, also forages in chaparral, coastal scrub, Great Basin shrub habitats and early successional stages of woodlands (Alley et al. 1990).	No	May occur, suitable habitat exists within the Proposed Project. Not noted in any acoustic records within the Proposed Project. Acoustically recorded to the northeast of Lake McClure past Chery Lake in the Sierra Nevada (BatAMP 2024). Acoustically recorded in NABat GRTS cells 874, 2922, 40810, and 47722 surrounding the Proposed Project. All calls manually vetted to species level (NABat 2024).

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
Yuma myotis *Myotis yumanensis*	BLM-S	Widespread in California, but uncommon in the Mojave and Colorado Desert regions, except for the mountain ranges bordering the Colorado River Valley. Ranges from sea level up to 11,000 feet, but uncommon above 8,000 feet in elevation. Roosts in buildings, mines, caves, or crevices. Has also been seen roosting in abandoned swallow nests and under bridges (Granholm et al 1990).	Yes	**CONFIRMED PRESENT within the Proposed Project.** Documented via acoustics at New Exchequer Powerhouse, McSwain Powerhouse Intake Structure, and Train Tunnel No. 2 Seepage Weir. Documented by capture at Below Exchequer Dam, Horseshoe Bend RA, Barrett Cover RA, McClure Point RA, and Lake McSwain RA. Protection plans will be put in place.
Fisher – Southern Sierra Nevada ESU *Pekania pennanti* pop. 2	FE ST, SSC	Large areas of mature, dense forest stands with snags and greater than 50% canopy closure. Uncommon permanent resident of the Sierra Nevada, Cascades, and Klamath Mountains; also found in a few areas in the North Coast Ranges (USFWS 2014).	No	Not likely to occur, there is no suitable habitat for the species within the Proposed Project, and the species is not known to occur within the Proposed Project vicinity.
San Joaquin pocket mouse *Perognathus inornatus*	BLM-S	Occurs in dry, open grasslands or scrub areas on fine-textured soils between 1,100 and 2,000 feet in the Central and Salinas Valleys. Digs burrows for cover (Ahlborn and Harvey 1990).	No	May occur, suitable habitat is present (dry, open grasslands with fine-textured soils) in the Proposed Project Boundary, and there are multiple known occurrences as close as within 6 miles west of the Proposed Project in the vicinity of the town of Snelling.

Species	Special-status Designation	Species Habitat Description	Discussed in FEIS (Yes/No)	Occurrence within the Proposed Project Boundary[1J]
American badger *Taxidea taxus*	SSC	Ranges across nearly all of California except northernmost Humboldt and Del Norte Counties. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils (Ahlborn and White 1990).	Yes	May occur, there are grassland and scrub habitats within the Proposed Project that could support the species.
San Joaquin kit fox *Vulpes macrotis mutica*	FE ST	The subspecies historically ranged in alkali scrub and arid grasslands throughout the level terrain of the San Joaquin valley floor from southern Kern County north to Tracy and San Joaquin County, and up into more gradual slopes of the surrounding foothills and valleys of the interior Coast Range. Occurs in desert-like habitats that are characterized by sparse or absent shrub cover, open ground, short vegetative structure, and open, level, sandy substrate for den use (USFWS 2010).	Yes	Not likely to occur, while there is suitable habitat in the general area, any species occurrence this far north of the historic range is unexpected. A single occurrence from 1972 has been documented approximately 8 miles west of the Proposed Project Boundary, noted to be of unknown age. Two documented occurrences the following year with no age comment are also recorded by Endangered Species Recovery Program (ESRP) staff. Protection plans will be put in place.

3.3.3 Environmental Impacts

THRESHOLDS OF SIGNIFICANCE

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and listed below. Except as provided in Public Resources Code Section 21099, impacts on biological resources are considered significant if the Proposed Program would result in any of the following:

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- A substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- 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 wildlife nursery sites?
- 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, Natural Community conservation Plan, or other approved local, regional, or state habitat conservation plan?

IMPACT ASSESSMENT ASSUMPTIONS AND METHODOLOGY

The evaluation of potential impacts on sensitive communities (including riparian areas and wetlands) and special-status species of the Proposed Project was based on a review of the available literature, relicensing study data, and additional data from work performed on the Merced Falls and Merced River FERC Relicensing Projects regarding the status and known distribution of sensitive communities and special-status species in the Proposed Project.

Permanent and temporary direct and indirect impacts on natural communities and special-status species are considered in the analysis. Direct impacts are those effects that result from Proposed Project construction activities and operation. Indirect impacts are Proposed Project effects occurring either later in time or at a distance from the Proposed Project but are reasonably foreseeable. Such indirect impacts are captured within the Proposed Project boundary. Permanent impacts would include, among other, loss of habitat due to the construction of new recreation facilities, and increased potential for disturbance of species due to increased foot traffic at improved recreation facilities. Temporary impacts would include, among others, noise generation during construction, ground disturbance for short-term landings or laydown areas and construction access. Impacts on habitat are generally considered temporary when the habitat is restored to preconstruction conditions within one year.

Permanent impacts on biological resources were quantified using the estimated amount of land cover that would be converted as a result of construction of the new Project facilities compared to existing conditions. Temporary impacts on biological resources were quantified using the estimated amount of land cover that would be temporarily disturbed during Project construction that would be restored to pre-Project conditions within one year of disturbance. Direct impacts on biological resources identified within the Proposed Project Area were determined using GIS software. The Proposed Project Area and associated impact areas were overlaid on the vegetation community, wildlife habitat, and wetland data to quantify the permanent and temporary impacts associated with the construction and operation of the Proposed Project. Impacts on occurrences of special-status plants known to occur in the Project Area were determined by overlaying the Project Area over the mapped occurrences and determining overlap. If information about the presence of a particular special-status species is unknown, but suitable habitat is present, then the impact analysis took the conservative approach by inferring presence of that special-status species.

Implementation of Proposed Project Actions, Prior to or Following Relicensing

In the FEIS findings discussed with each species group in the following sections, FERC selected the *Staff Alternative with Mandatory Conditions* as the preferred alternative; this alternative was based on the current Merced River Hydropower and Merced Falls Hydropower projects, with modifications and additions recommended by FERC; these are described in detail in the 2015 FERC Hydropower FEIS (FERC 2015 Merced ID FEIS) Sections 5.1.1.2 and 5.1.2.1 and incorporated here by reference. In addition to FERC staff's modifications and additions, the final FERC license also would be subject to mandatory conditions submitted by BLM under Federal Power Act section 4(e). The FEIS discusses mandatory 4(e) conditions in section 5.3.2.

For purposes of the Proposed Project as defined in this PEIR, Merced ID assumes that post license acceptance, the Proposed Project would include the new license measures and plans that would protect special-status species, including BLM's Federal Power Act section 4(e) conditions and any other updates made to mandatory conditions during continued consultation with USFWS; as such, FEIS findings would be relevant to the CEQA assessment process. However, as required by CEQA regulations, separate CEQA findings are made for each CEQA question considered below.

Alternatively, some of the Proposed Project-related activities may be initiated before license issuances for the Merced River and Merced Fall FERC Hydropower Relicensing Projects. In consultation with the USFWS during the relicensing process, Merced ID agreed to implement multiple protective measures for federal ESA-listed species *before and during* the new license. However, for those projects that move forward prior to relicensing, Merced's proposed measures, along with the Mandatory Conditions and 4(e) conditions, would not be enforceable.

Therefore, where proposed license measures would not be binding (prior to new licenses being accepted), and as necessary, mitigation measures (MMs) have been included for construction and operations. MMs identified in the next sections have been developed based on the proposed license measures, are anticipated to provide the same protections identified during consultation with USFWS and will reduce the potential for adverse effects to biological resources. These measures are briefly described as they are introduced in analysis of a species; a table of MMs with full descriptions is provided in Section 3.3.4 *Biological Resources Mitigation Measures* following the individual species' assessments. Further, a summary of impacts and applicable MMs is included in Section 3.3.5.

If new FERC licenses are accepted, these MMs would continue to apply only to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Some of the measures proposed in Merced ID's FLA and evaluated in the FERC FEIS are not required to reduce the potential for CEQA impacts under the Proposed Project but were included to provide additional value to vegetation communities and species post-relicensing; as such, these are not included here as MMs for pre-relicensing Proposed Project activities.

To support consideration of projects being implemented prior to and post-relicensure, potential impacts to each of the species discussed below are analyzed under both scenarios- with and without a new license.

IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT

Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Based on the results of the literature review, past surveys, relicensing studies, and other available data and previous surveys as summarized in the FEIS (FERC 2015), numerous special-status species are known or have the potential to occur within the Proposed Project (see Appendix E). The species or species groups identified below were determined to have the potential to occur in areas where there are Proposed Project activities and therefore, potential Proposed Project impacts are further assessed. The species below were included to complete a comprehensive assessment of potentially occurring species; however, their inclusion does not necessarily constitute presence. Additional information on their status within the Proposed Project are included in the significance findings and are based on documented occurrences within the area.

Special-status species are discussed below, in three groups: (1) those species listed under the federal ESA; (2) those species listed under the CESA or as a State FP; and (3) all other special-status species, including those listed by the CDFW as SSC, and the BLM as BLM-S.

FEDERAL THREATENED AND ENDANGERED SPECIES

A total of 15 species listed, proposed, or candidate as threatened or endangered under the federal ESA are known or have the potential to occur in the Proposed Project boundary, including:

- Five plants –
  - fleshy owl's-clover (*Castilleja campestris* var. *succulenta)*, FT, SE, CRPR 1B.2
  - San Joaquin Valley Orcutt grass (*Orcuttia inaequalis)*, FT, SE, CRPR 1B.1
  - hairy Orcutt grass (*Orcuttia pilosa*), FE, SE, CRPR 1B.1
  - Hartweg's golden sunburst (*Pseudobahia bahiifolia*), FE, SE, CRPR 1B.1
  - Greene's tuctoria (*Tuctoria greenei*), FE, SR CRPR 1B.1
- Four invertebrates –
  - Conservancy fairy shrimp *(Branchinecta conservatio),* FE
  - Vernal pool fairy shrimp, FT
  - Monarch butterfly, FPT

    - Valley elderberry longhorn beetle (VELB), FT
- Four amphibians –
    - California tiger salamander, FT, ST
    - foothill yellow-legged frog – South Sierra DPS, FE, SE
    - California red legged frog, FT, SSC
    - Western spadefoot, FPT, SSC
- One reptile –
    - Northwestern pond turtle, FPT, SSC
- One mammal –
    - San Joaquin kit fox, FE, ST

The following subsections discuss each of the federally listed categories of species included in this list.

Plant Species

No federal ESA-listed or candidate plant species are documented within the Proposed Project. However, there is potential habitat for five ESA-listed plant species on or near the Proposed Project. All, except Hartweg's golden sunburst, grow exclusively in or near to vernal pools. Vernal pools are present near the Merced Falls and McSwain Reservoir Recreation Areas, and there is critical habitat for the vernal pool plant species on both sides of Merced Falls. However, the critical habitat in the Proposed Project does not have vernal pool features, and at McSwain Reservoir, the vernal pools are located on the opposite side of the reservoir from the recreation areas. There is potential habitat for Hartweg's golden sunburst at most of the recreation areas with Proposed Project activities.

The 2015 FEIS (page 3-255 to 3-256) analyzed the potential effects of the Proposed Project's construction and recreation activities on ESA-listed plants, assuming acceptance of a new license.

Although there is the potential for 'construction of new facilities…[to] directly affect vegetation through excavation and grading…and recreation activities, such as hiking, [to] affect threatened and endangered plants…', the FEIS determined that the Proposed Project was not likely to adversely affect ESA-listed plants.

Construction Impacts

There is no construction planned at Merced Falls, and the vernal pools at McSwain Reservoir are across the reservoir from the recreation area. Therefore, there will be no impacts to any of the vernal pool species by Proposed Project construction activities.

If Hartweg's golden sunburst or its habitat are present at the Proposed Project recreation sites during construction, individuals may be impacted by compaction, trampling (by foot or vehicle), removal, or degradation of habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during construction.

Although adverse effects on ESA-listed plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in

areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

Implementation of mitigation measures (MM) described in the *Mitigation Measures* section (MM-BIO-1 through MM-BIO-14), would reduce the potential effects of proposed construction on ESA-listed plants and their habitat, if implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Operations Impact

Ongoing Proposed Project operations activities that may affect ESA-listed plants, or their habitat, should they be present, include grading of dirt roads, vegetation management, or ground- disturbing activities that can lead to minor disturbances of habitat. Additionally, recreation activities can affect species if users trample or otherwise disturbs habitat. Most of the recreation areas, which will be subject to more frequent recreation and ongoing maintenance, such as campground and day use areas, are already developed, with activities remaining contained to these developed areas. Occurrences of species growing in developed recreation areas are generally adapted to disturbances from Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less Than Significant** impact on Federal protected plant species during operations.

Although adverse effects on ESA-listed plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related operations activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Further, although Proposed Project operations may impact individuals, O&M is contained primarily within developed recreation areas and is not expected to have an overall impact on species or their habitat, especially with the protective MMs (summarized in the next section) in place. However, there remains a potential for significant impacts to individuals resulting from operations if projects were implemented prior to relicensing.

The 2015 FEIS (page 3-255 to 3-256) analyzed the potential effects of the Proposed Project's construction and recreation activities on ESA-listed plants, assuming acceptance of a new license. Although there is the potential for 'construction of new facilities…[to] directly affect vegetation through excavation and grading…and recreation activities, such as hiking, [to] affect threatened and endangered plants…', the FEIS determined that the Proposed Project was not likely to adversely affect ESA-listed plants.

Implementation of MMs described in the *Mitigation Measures* section, including measures **MM-BIO-1** through **MM-BIO-15**, would reduce the potential for operations effects on ESA-listed plants and their habitat, if implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on ESA-listed plant species resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- MM-BIO-1 requires Merced ID to acquire any and all permits that each of the different construction projects require. These will include protective measures for sensitive species, including ESA-listed plants.

- MM-BIO-2 requires reducing the area of disturbance to the smallest footprint feasible in order to avoid unnecessary encroachment into ESA-listed plant or species habitat.
- MM-BIO-3 will prevent habitat degradation through requiring that construction areas are kept clear of garbage and micro-trash. Clean-up of a work area will occur at the end of each workday.
- MM-BIO-4 will reduce impacts on sensitive species from potential vehicle impacts by mandating that vehicles stay on existing roads and other already disturbed areas, preventing damage to habitat. Additionally, vehicle speeds will not exceed 15 miles per hour, on access roads with no posted speed limit, to avoid collision with special-status species.
- MM-BIO-5 requires the minimization of imported fill for construction activities and, if necessary, the chemical testing of soil brought from off-site, reducing the introduction of non-native invasive species and weeds.
- MM-BIO-6 requires training on proper identification of and impacts avoidance measures for ESA-listed for any ESA-listed species with habitat within the Proposed Project construction area and will monitor the work at appropriate intervals. The training will be provided to contractors, work crews, and any onsite personnel.
- MM-BIO-7 requires flagging/fencing of ESA-listed plants if sensitive habitats are located in or near construction footprints, for avoidance during the course of construction activities.
- MM-BIO-8 will reduce the amount of native vegetation removal to the minimum necessary to complete activities so as to further reduce the potential for impacts to ESA-listed species.
- MM-BIO-9 requires a biological monitor to perform daily clearance surveys before any activities that may impact federal ESA special-status semi-aquatic species, which would indirectly protect ESA-listed plants that utilize similar habitats.
- MM-BIO-10 requires mitigation at a minimum 1:1 ratio to prevent permanent loss of sensitive habitat, such as vernal pools, from construction activities.
- MM-BIO-11 requires that, if determined by a qualified biologist, a biological monitor would be required during ground-disturbing and vegetation removal activities associated with construction in areas of vernal pools, delineated aquatic resources, sensitive communities (as mapped in Appendix E) or known special-status species occurrences identified during pre-construction surveys (MM-BIO-12) to assist in keeping activities away from sensitive occurrences and generally facilitating protection of sensitive resources.
- MM-BIO-12 requires pre-construction surveys for sensitive habitats and sensitive species to determine their presence prior to the start of activities so they can be avoided/protected. If new occurrences of an ESA-listed species are located in any area that may be affected by the Proposed Project, the USFWS must be consulted.
- MM-BIO-13 requires the cleaning of equipment, to reduce the spread of non-native invasive species.
- MM-BIO-14 requires avoidance of any delineated aquatic resources to the extent possible during activities. These features will be flagged and/or fenced prior to commencement of work. If full avoidance is not possible, MM-BIO-10 would be implemented.

- MM-BIO-15 requires fencing a 250-foot buffer around vernal pool habitat when ground-distributing activities occur adjacent. A qualified biologist may approve variances to this buffer distance if deemed appropriate. These provisions will also protect other ESA-listed species that utilize vernal pools.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

Invertebrates

Four ESA-listed invertebrates have the potential to be affected by the Proposed Project- – Conservancy fairy shrimp, vernal pool fairy shrimp, monarch butterfly, and valley elderberry longhorn beetle.

Conservancy fairy shrimp and vernal pool fairy shrimp

Construction Impacts

There are no known occurrences of Conservancy fairy shrimp and or vernal pool fairy shrimp within the Proposed Project area, but there is critical habitat for vernal pool fairy shrimp on both sides of the Merced Falls dam. However, the critical habitat that falls within the Proposed Project area does not contain suitable habitat for vernal pool species. There are known vernal pools on the opposite shore of McSwain Reservoir from the recreation area, but not on the recreation area side of the lake. Further, there is no planned Proposed Project-related construction at Merced Falls dam or on the opposite shoreline across from McSwain Reservoir Recreation Area. Finally, there is no appropriate habitat for these species at any of the other recreation areas.

Given that the Proposed Project has no proposed construction-related activities in or near suitable habitat for these species, the Proposed Project construction would have **No Impact** on Conservancy fairy shrimp and vernal pool fairy shrimp.

Operations Impacts

There are no known occurrences of Conservancy fairy shrimp or vernal pool fairy shrimp in the Proposed Project area, but, as noted above, there is critical habitat for vernal pool fairy shrimp on both sides of Merced Falls dam. However, the critical habitat within the Proposed Project does not provide suitable habitat for vernal pool species.

The 2015 FEIS (page 3-256 to 3-258) analyzed the potential effects of the Proposed Project's recreation activities on Conservancy fairy shrimp and vernal pool fairy shrimp, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the development and implementation of a protection plan. Additionally, the FEIS determined that the Proposed Project would not 'destroy or adversely modify critical habitat' for vernal pool fairy shrimp that is within the Proposed Project boundary.

Given the lack of suitable vernal pool habitat within the Proposed Project, the Proposed Project operations would have **No Impact** on Conservancy fairy shrimp and vernal pool fairy shrimp.

Monarch butterfly

The Proposed Project boundary contains suitable habitat for Monarch butterfly, a candidate for the ESA, including a known occurrence of milkweed (*Asclepias* spp.).

Construction Impacts

If Monarch butterfly or its habitat (milkweed) are present at the Proposed Project construction sites, the plants and Monarch butterfly may be impacted by compaction, trampling (by foot or vehicle), removal, or degradation. Inclusion of new FERC license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected plant species and Monarch butterfly during construction.

Although adverse effects on Monarch butterfly and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

In order to minimize potential adverse effects on ESA-listed plant species due to Proposed Project-related construction, implementation of **MM -BIO-1** through **MM-BIO-14** are required for all project activities and would indirectly protect Monarch butterfly. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, workers trainings, and reporting occurrences to USFWS are all MMs that are required for implementation of projects that are initiated prior to relicensing. Required surveys would also incidentally locate Monarch butterfly and its habitat.

Implementation of **MM-BIO-1** through **MM-BIO-14** would reduce the potential for effects of Proposed Project construction on Monarch butterfly and its habitat, if implemented prior to relicensing, to a **Less Than Significant Impact With Mitigation Incorporated**.

If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Operations Impacts

If Monarch butterfly or milkweed are present at the Proposed Project recreation sites, they may be impacted by compaction, trampling (by foot or vehicle), or degradation during Proposed Project operations. However, most recreation use is not anticipated to be in the area of the milkweed occurrences. Areas subject to more frequent recreation, such as campgrounds and day use areas, are already highly developed and their ongoing use is not anticipated to result in adverse effects to this species or its habitat. Project activities may impact individuals but are not expected to have an overall impact on the species or its habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Monarch butterfly during operations.

Although adverse effects on Monarch butterfly and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS does not specifically analyze Monarch butterfly. However, per the FEIS (page 3-215), 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species,' assuming acceptance of a new license.

However, MMs included previously in the *Construction Impacts* section for Monarch butterfly will also provide protection for the species during operations.

With the small number of known milkweed occurrences and their being unlikely to occur in recreation areas, as well as the proposed MMs, there will be a **Less Than Significant Impact With Mitigation Incorporated** on Monarch butterfly and its habitat, if projects are implemented prior to relicensing.

Valley elderberry longhorn beetle

There are no known occurrences of Valley elderberry longhorn beetle (VELB) within the Proposed Project, but there are documented elderberry shrubs, (that is, VELB habitat,) at Horseshoe Bend Recreation Area, Barrett Cove Recreation Area, and Mack Island Recreation Area.

Construction Impacts

If VELB or its habitat (elderberry shrubs [*Sambucus* spp.]) are present at the Proposed Project construction sites, the shrubs and VELB may be impacted by compaction, trampling (by foot or vehicle), removal, trimming, or degradation. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during construction.

Although adverse effects on VELB and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related activities prior to relicensure may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there could be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-259 to 3-261 and page 3-268 to 269) analyzed the potential effects of the Proposed Project's operations and maintenance (O&M), construction, and recreation activities on VELB, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species.

Some of the MMs described earlier for ESA-listed plant species (**MM-BIO-1** through **MM-BIO-12**) would minimize potential adverse effects on VELB that could result from Proposed Project-related construction if it occurred prior to relicensure. However, additional MMs, based on Merced ID's consultation with the USFWS, will also be put in place to protect VELB and their habitat. These include **MM-BIO-16** through **MM-BIO-19** and are described in the *Mitigation Measures* section.

Implementation of these MMs would reduce the potential effects of Proposed Project construction on VELB and its habitat, if implemented prior to relicensing, to a **Less Than Significant Impact With Mitigation Incorporated**.

If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Operations Impacts

If VELB or elderberry shrubs are present at the Proposed Project recreation sites, they may be impacted by compaction, trampling (by foot or vehicle), trimming, or degradation during Proposed Project operations. However, most recreation use is not anticipated to be in the area of the elderberry shrubs and those individuals growing in areas of recreation activities and operations are adapted to disturbance. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during operations.

The 2015 FEIS (page 3-259 to 3-261 and page 3-268 to 269) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities on VELB, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species.

Although adverse effects on VELB and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

As described previously for construction, **MM-BIO-1** through **MM-BIO-19** would also apply during operations.

With these protections incorporated into the Proposed Project operations and the small number of elderberries with the potential to be impacted, there will be a **Less Than Significant Impact With Mitigation Incorporated on** VELB and its habitat, if projects are implemented prior to relicensing.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on Valley elderberry longhorn beetle resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- **MM-BIO-16** requires all elderberry shrubs will be flagged or fenced with a buffer of 20 feet from their dripline prior to implementation of vegetation management or ground-disturbing activities. A qualified biologist may approve variances to this buffer distance if deemed appropriate. If necessary, the area will be revegetated with native plants once the activity is completed and fencing/flagging removed.
- **MM-BIO-17** requires a qualified biologist to train all project crew prior to work within 165 feet of elderberry shrubs, as well as monitor the work at appropriate intervals.
- **MM-BIO-18** requires elderberry shrubs with stems of over an inch at ground height be considered as potential habitat and subject to protection, which includes an activity-limited restriction period of March 1 to November 1 of each year within 165 feet of elderberry shrubs that meet these criteria, and none may be removed.
- **MM-BIO-19** allows elderberry shrubs with stems of less than an inch to be trimmed between November and February. More broadly, any activities that would occur within 165 feet of these shrubs will be done, to the extent feasible, between August and February.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or

management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by anticipated license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

California tiger salamander

There are no known occurrences of California tiger salamander in the Proposed Project, but there is potential upland habitat around McSwain Reservoir, Merced Falls dam and at the eastern arm and west side of Lake McClure. No breeding habitat was identified ion the Proposed Project.

Construction Impacts

If California tiger salamander or their upland habitat are present at the Proposed Project recreation sites, the habitat and individuals may be impacted during construction activities by compaction, trampling (by foot or vehicle), removal, or degradation. They may also be flushed temporarily or permanently from areas by construction activity noise and/or vibrations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on California tiger salamander during construction.

Although adverse effects on California tiger salamander and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-263 to 3-264) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on California tiger salamander, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the development and implementation of a protection plan that includes protocol level surveys, habitat and migratory route identification and the avoidance of burrow fumigants and rodenticides in California tiger salamander habitat.

Multiple protective measures discussed previously would also benefit California tiger during construction, including **MM-BIO-1** through **MM-BIO-15**. In addition, MMs specific to the protection of California tiger salamander (and other amphibians), will also be required during all Proposed Project construction that may be initiated prior to relicensing.

Implementation of species-specific MMs described in the *Mitigation Measures* section (**MM-BIO-20** through **MM-BIO-24**), in addition to previously described **MM-BIO-1** through **MM-BIO-14**, would reduce the potential effects of proposed construction on California tiger salamander and its habitat, if implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Operations Impacts

If California tiger salamander or their upland habitat are present at the Proposed Project recreation areas, the habitat and California tiger salamander individuals may be impacted during Proposed Project operations by flushing from upland sites permanently or temporarily by noise/vibrations, trampling (by foot or vehicle), or degradation. Herbicide application may also lead to injury or death

of individuals. However, the majority of the recreation use and maintenance will be confined to developed recreation areas, most of which have been in operation for years, and any individuals frequenting recreation areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during construction.

Although adverse effects on California tiger salamander and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-263 to 3-264) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on California tiger salamander, assuming acceptance of a new license. Proposed Project activities that could affect the species include vegetation removal or trampling (by foot or vehicle) that could disturb existing burrows, the application of rodenticides affect[ing] small mammals that create the burrows used by California tiger salamanders, maintenance of recreation areas, road maintenance, and project- related traffic injury or kill of salamanders crossing roads or migrating across project lands. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the development and implementation of a protection plan that includes protocol level surveys, habitat and migratory route identification and the avoidance of burrow fumigants and rodenticides in California tiger salamander habitat.

The same MMs noted above for construction, including both species-specific and general MMs, would be implemented during operations, as appropriate, to continue to protect the species. If new occurrences of the species are located in any area that may be affected by the Proposed Project, the USFWS must be consulted per permitting requirements. All these provisions will benefit California tiger salamander.

Given the majority of Proposed Project operations will be confined to developed areas and with protections incorporated into the Proposed Project operations, there will be a **Less Than Significant With Mitigation Incorporated** impact during operations on California tiger salamander and its habitat.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on California tiger salamander resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- MM-BIO-20 requires that if California tiger salamander are present, rodenticides and/or burrow fumigants cannot be used within 300 feet of the occurrence without consultation for take under the federal ESA with the USFWS.
- MM-BIO-21 mandates that non-routine ground-disturbing activities are not allowed within 300 feet of California tiger salamander suitable breeding or upland habitat without a pre-activity/pre-construction survey. If surveys locate the species or if any new occurrence of California tiger salamander are located where Project activities may affect them, the CDFW and USFWS must be consulted.

- MM-BIO-22 requires that within 100 feet of California tiger salamander known breeding or upland habitat, per pre-construction surveys, fencing will be erected to prevent California tiger salamander and other special-status species from entering the work area. No synthetic netting may be used in the work area. A qualified biologist may approve variances to this buffer distance if deemed appropriate. Prior to the start of work each morning within the disturbed work limits, a qualified person (trained by a qualified biologist) will check for California tiger salamander under equipment and materials to be used that day. The qualified person will also check all excavated steep-walled holes or trenches for CTS. If CTS are located, they will be allowed to move from the area on their own, unless work must continue in the area, in which case, the CDFW and USFWS will be contacted.
- MM-BIO-23 requires that if there are open culverts or pipes, they will be inspected prior to filling or burying, and all equipment and vehicles will be inspected to make sure no federal ESA-listed amphibians or other special-status species are present prior to use each day. Any excavations that will be left open for more than 12 hours will be covered, surrounded by fencing, or have an escape ramp installed, and/or inspected to make sure no amphibians are present before work occurs within them following the break. No synthetic netting may be used in the work area. Any special-status species that are located in the work area will be allowed to leave on their own and all work stopped in an area of 50 feet around them.
- MM-BIO-24 requires that any equipment used in aquatic habitats must be disinfected to prevent the spread of chytrid fungus (Bd and Bsal) and other pathogens, such as ranaviruses, as well as other aquatic invasive species. Decontamination is also required when equipment and gear are being transferred between different watersheds.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by anticipated license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

California red-legged frog

There are no known occurrences of California red-legged frog on or near the Proposed Project, although it is part of a Recovery Unit for the species. Some potential habitat exists within the Proposed Project, but the species is generally considered extirpated from the area.

Construction Impacts

If California red-legged frog or its habitat are present at the Proposed Project recreation sites, the habitat and individuals may be impacted during construction activities by compaction, trampling (by foot or vehicle), flushing from foraging or breeding activities, or habitat loss/degradation. They may also be flushed temporarily or permanently from areas by construction activity noise/vibration. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during construction.

Although adverse effects on California red-legged frog and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-261 to 3-263 and 3-266 to 3-268) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on California red-legged frog, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the implementation proposed protective measures.

Multiple protective measures discussed previously would also benefit California red-legged frog, including **MM-BIO-1** through **MM-BIO-15** and **MM-BIO-20** through **MM-BIO-24**. Additional measures for the protection of California red-legged frog, based in part on conservation measures developed in consultation with the USFWS, will also be implemented during all Proposed Project construction, including **MM-BIO-25** through **MM-BIO-27** described in the *Mitigation Measures* section. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Implementation of the MMs listed above, would reduce the potential effects of proposed construction on California red-legged frog and its habitat, if implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Operations Impacts

If California red-legged frog or its habitat are present at the Proposed Project recreation sites, the habitat and California red-legged frog individuals may be impacted during Proposed Project operations by compaction, trampling (by foot or vehicle), flushing permanently or temporarily by noise/vibration, or loss/degradation. Herbicide application may also lead to injury or death of individuals. However, the majority of the recreation use and maintenance will be confined to developed recreation areas, most of which have been in operation for years, and any individuals frequenting recreation areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on California red-legged frog during operations.

Although adverse effects on California red-legged frog and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related operations activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from operations if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-261 to 3-263 and 3-266 to 3-268) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on California red-legged frog, assuming acceptance of a new license. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the implementation of proposed protective measures.

The same MMs noted previously for construction, would be implemented during operations, as appropriate, to continue to protect the species. If new occurrences of the species are located in any area that may be affected by the Proposed Project, USFWS would be required to be consulted as a permit condition. All these provisions will benefit California red-legged frog during operations.

With these protections incorporated into the Proposed Project during operations and given the low likelihood of species occurrence, there will be a **Less Than Significant With Mitigation Incorporated** impact on California red- legged frog and its habitat.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on California red-legged frog resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- **MM-BIO-25** requires that when application of pesticides is deemed necessary within 500 feet of aquatic habitat suitable for California red-legged frog, adverse effects to individuals and their habitat will be avoided.
- **MM-BIO-26** requires that if Project activities are proposed within 300 feet of suitable habitat for the species, a pre-activity/pre-construction survey for California red-legged frog shall be conducted. If surveys locate the species or if any new occurrence of California red- legged frog are located where Project activities may affect them, the USFWS must be consulted
- **MM-BIO-27** requires that temporary wildlife exclusion fencing to be installed around the Proposed Project work footprint to prevent the frog from gaining access to the active construction area. Any California red-legged frog found in a work area will be allowed to leave of its own volition, with all work stopped within 50 feet.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by anticipated license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

Foothill yellow-legged frog

Foothill yellow-legged frog and its habitat is known to occur at one location associated with Proposed Project activities – Bagby Recreation Area, the proposed construction at Sherlock Creek.

Construction Impacts

If foothill yellow-legged frog or its habitat are present at Sherlock Creek, near or in construction sites, the habitat and individuals may be impacted during Proposed Project construction activities by compaction, trampling (by foot or vehicle), removal, or habitat loss/degradation. They may also be flushed from areas temporarily or permanently by construction activity noise/vibrations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on foothill yellow-legged frog during construction.

Although adverse effects on ESA-listed plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

Given the proposed construction at Sherlock Creek is being assessed in this PEIR at a programmatic level of review (Section 2.3.6.1) due to unknown factors regarding location and design of features, additional evaluation may be required when the proposed new bridge, takeout(s), and access road locations are confirmed and in design. At that time, further analysis on the potential for effects to Foothill yellow-legged frog may also be required at that time.

The 2015 FEIS (page 3-221 to 3-222) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions

and Merced ID Proposed Measures on special-status amphibians, assuming acceptance of a new license.[21] The FEIS determined that the Proposed Project only had the potential to affect the species by development of recreation facilities at Sherlock Creek. The FEIS recommended surveys and monitoring in the area during and following construction at Sherlock Creek.

Multiple protective measures discussed previously would also benefit foothill yellow-legged frog, including **MM-BIO-1** through **MM-BIO-15**, and **MM-BIO-20** through **MM-BIO-27**. One additional species-specific MM, **MM-BIO-28**, is described in the *Mitigation Measures* section and will be required during construction to protect foothill yellow-legged frog, if projects are initiated prior to relicensing. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these measures in place and given the low likelihood of species occurrence, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated impact** on foothill yellow- legged frog and its habitat, if projects are implemented prior to relicensing.

Operations Impact

If foothill yellow-legged frog or its habitat are present at or near Sherlock Creek in Bagby Recreation Area or occur in areas of Proposed Project operations, the habitat and individuals may be impacted by compaction, trampling (by foot or vehicle), flushing from areas temporarily or permanently due to noise/vibrations, removal, or habitat loss/degradation. However, the majority of the recreation use will be confined to developed recreation areas, and individuals frequenting these areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on foothill yellow-legged frog during operations.

Although adverse effects on foothill yellow-legged frog and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on this species, should it be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from operations if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-221 to 3-222) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on special-status amphibians, assuming acceptance of a new license. The FEIS determined that the Proposed Project only had the potential to affect the species was the 'development of recreation facilities at Sherlock Creek.

The same MMs noted previously for construction would be implemented during operations, as appropriate, to continue to protect the species. If new occurrences of the species are located in any area that may be affected by the Proposed Project, the USFWS must be consulted per permitting requirements. All these provisions will benefit Foothill yellow-legged frog and reduce the potential for impacts during operations, if implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

[21] Foothill yellow-legged frog was not federally listed at the time of the FEIS.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on foothill yellow-legged frog resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MM will also be required:

- **MM-BIO-28** requires surveys for foothill yellow-legged frog at Sherlock Creek to reduce mortality of frogs within the Proposed Project boundary.

It is anticipated that this MM would be replaced by license measures and mandatory conditions consistent with Merced ID's FLAs for the Merced River FERC project.

Western spadefoot

There is foraging habitat for the Western spadefoot (toad) at multiple recreation areas, though there are no documented occurrences of the species within the Proposed Project. They use small ponds, including vernal pools, for breeding, and there are also potential breeding locations at several of the recreation areas in the Proposed Project.

Construction Impacts

If Western spadefoot or its habitat are present at the Proposed Project recreation sites during construction, individuals may be impacted by compaction, trampling (by foot or vehicle), temporary or permanent flushing from breeding or foraging activities due to noise/vibrations, and/or loss/degradation of habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Western spadefoot during construction.

Although adverse effects Western spadefoot and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-221 to 3-222) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on special-status amphibians, assuming acceptance of a new license.[22] The FEIS determined that the Proposed Project had "limited potential for project effects on [the] species."

Multiple protective measures discussed previously would also benefit Western spadefoot, including **MM-BIO-1** through **MM-BIO-15**, **MM-BIO-20**, **MM-BIO-23**, and **MM-BIO-27**.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

[22] Western spadefoot was not proposed for listing on under the federal ESA at the time of the FEIS.

With these MMs in place, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** impact on Western spadefoot and its habitat, if projects are implemented prior to relicensing.

Operations Impacts

Ongoing Proposed Project operations activities that may affect Western spadefoot individuals, or their habitat, should they be present, include grading of dirt roads, vegetation management, or other ground-disturbing activities that can lead to minor disturbances of habitat.

Additionally, recreation activities can also potentially affect this species if it tramples or otherwise disturbs habitat. Most of the recreation areas, which will be subject to more frequent recreation and ongoing maintenance, such as campground and day use areas, are already developed, and individuals frequenting recreation areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Federal protected species during construction.

Although adverse effects on Western spadefoot and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related operations activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from operations if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-221 to 3-222) analyzed the potential effects of the Proposed Project's O&M, and recreation activities on special-status amphibians, assuming acceptance of a new license.[23] Potential Project activities that might affect Western spadefoot included '… vegetation maintenance, pest control and road maintenance that occur in proximity to vernal pool habitat…'. The FEIS determined that the Proposed Project had 'limited potential for project effects on [the] species.'

The same MMs noted above for construction would be implemented during operations, as appropriate, to continue to protect the species. If new occurrences of the species are located in any area that may be affected by the Proposed Project, the USFWS must be consulted in compliance with permits. All these provisions will benefit Western spadefoot.

With these protections incorporated into the Proposed Project operations and given the relatively small area of the Proposed Project operations in undisturbed areas, the Proposed Project's operations would have a **Less Than Significant With Mitigation Incorporated** impact on Western spadefoot and its habitat.

Fishes

While unlikely, potentially occurring federal ESA fish species in the Merced River downstream of Crocker-Huffman Diversion Dam include Central Valley spring-run Chinook salmon Evolutionary Significant Unit (ESU;), Central Valley Distinct Population Segment (DPS) steelhead, and green sturgeon. Essential fish habitat for Chinook salmon and designated critical habitat for steelhead both occur downstream of Crocker Huffman Diversion Dam.

As no work is proposed downstream of Merced Falls Dam, and there is no available fish passage for fisheries to move above Merced Falls Dam, these species would not be present in the Proposed

[23] Western spadefoot was not proposed for listing on the ESA at the time of the FEIS.

Project area. Therefore, the Proposed Project's construction and operations would have **No Impact** on federal ESA-listed fish species.

Reptiles

Northwestern pond turtle

Northwestern pond turtles are known to bask at various locations on all three reservoirs in the Proposed Project and may utilize various recreation areas for upland activities, including nesting.

Construction Impacts

If Northwestern pond turtle or its habitat are present at the Proposed Project recreation sites during construction, individuals may be impacted by compaction, trampling (by foot or vehicle), nest destruction, temporary or permanent flushing from breeding or foraging activities due to noise/vibration, and/or loss/degradation of habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Northwestern pond turtle during construction.

Although adverse effects on Northwestern pond turtle and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-222 to 3-223) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities on Northwestern pond turtle, assuming acceptance of a new license.[24] The activities that were analyzed as potentially impacting the species were '…traffic associated with project maintenance and recreation, and maintenance activities such as pesticide applications…' The FEIS determined that the Proposed Project might affect the species but '…proposed measures…would minimize project effects on [north]western pond turtles…'

In order to minimize potential adverse effects on Northwestern pond turtle due to Proposed Project-related construction potentially occurring pre-relicensing, implementation of **MM-BIO-1** through **MM-BIO-4**, **MM-BIO-9** through **MM-BIO-14**, and **MM-BIO-22** through **MM-BIO-25**, described previously, will be required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, fencing work areas, and allowing for movement of own volition, are all MMs that will benefit Northwestern pond turtle. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including Northwestern pond turtle, to move from an area of their own volition. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these MMs in place, the Proposed Project's construction activities would have a **Less Than Significant Impact With Mitigation Incorporated** on Northwestern pond turtle and its habitat, if projects were to be implemented prior to relicensing.

[24] Northwestern pond turtle was not proposed for listing on the ESA at the time of the FEIS.

Operations Impacts

If Northwestern pond turtle or its habitat are present at recreation areas during operations, the habitat and individuals may be impacted during Proposed Project operations by compaction, trampling (by foot or vehicle), nest destruction, removal, or loss/degradation. They may also be flushed temporarily or permanently from areas by construction activity noise and/or vibrations. However, the majority of the recreation use and maintenance will be confined to developed recreation areas, most of which have been in operation for years, and individuals frequenting the recreation areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on Western pond turtle and its habitat during construction.

Although adverse effects on Northwestern pond turtle and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-222 to 3-223) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on Northwestern pond turtle, assuming acceptance of a new license.[23] The FEIS determined that the Proposed Project might affect the species but '…proposed measures…would minimize project effects on [north]western pond turtles…'

The same MMs noted previously for construction would be implemented during operations, as appropriate, to continue to protect the species. All of these provisions will benefit Northwestern pond turtle.

With these protections incorporated into the Proposed Project operations and given the relatively small undeveloped area that will be impacted by the Proposed Project operations, the Proposed Project would, have a **Less Than Significant With Mitigation Incorporated** impact on Northwestern pond turtle and its habitat during operations.

Mammals

San Joaquin Kit Fox

While there is suitable habitat in the general area, any occurrence of San Joaquin kit fox this far north of the historic range is unexpected. If any are in the area, they would be visitors, not anticipated to breed, but merely to forage and/or pass through.

Construction Impacts

If San Joaquin kit fox or its habitat are present at the Proposed Project recreation sites during construction, individuals may be impacted by compaction, temporary or permanent flushing from foraging activities due to construction noise/vibration, and/or loss/degradation of foraging habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on San Joaquin kit fox and its habitat during construction.

Although adverse effects on ESA-listed plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in

areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-258 to 3-259 and 3-265 to 3-266) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on San Joaquin kit fox, assuming acceptance of a new license. The FEIS determined that the Proposed Project 'with the development and implementation of a protection plan…is not likely to adversely affect the San Joaquin kit fox…'

In order to minimize potential adverse effects on San Joaquin kit fox due to Proposed Project-related construction occurring prior to relicensing, implementation of previously described MMs (**MM-BIO-1** through **MM-BIO-6**, **MM-BIO-8**, **MM-BIO-9**, **MM-BIO-11**, **MM-BIO-12**, and **MM-BIO-20** through **MM-BIO-23**) will be required for all project activities. These MMs will all benefit San Joaquin kit fox.

In addition, **MM-BIO-29** and **MM-BIO-30** would be required to be implemented, based on Merced ID's consultation with the USFWS, if construction were to be initiated prior to relicensing. Finally, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including San Joaquin kit fox, to move from an area of their own volition. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these MMs in place and given the unlikelihood of species occurrence, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** impact on San Joaquin kit fox and its habitat during construction.

Operations Impacts

If San Joaquin kit fox or its habitat are present at recreation areas during Proposed Project operations, the habitat and individuals may be impacted by compaction, trampling (by foot or vehicle), temporary or permanent flushing away from foraging activities due to noise/vibrations, and/or habitat loss/degradation. However, the majority of the recreation use and maintenance will be confined to developed recreation areas, most of which have been in operation for years. Species frequenting recreation areas would be adapted to the Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on San Joaquin kit fox and its habitat during operations.

Although adverse effects on San Joaquin kit fox and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-258 to 3-259 and 3-265 to 3-266) analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on San Joaquin kit fox, assuming acceptance of a new license. The FEIS determined that the Proposed Project 'with the development and implementation of a protection plan…is not likely to adversely affect the San Joaquin kit fox…'

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the

relicensing conditions. If new occurrences of the species are located in any area that may be affected by the Proposed Project, the USFWS must be consulted to comply with permitting requirements. All these provisions will benefit San Joaquin kit fox.

With these measures in place and given the unlikelihood of species occurrence, the Proposed Project's operations activities would have a **Less Than Significant With Mitigation Incorporated** impact on San Joaquin kit fox and its habitat, if implemented prior to relicensing.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on San Joaquin kit fox and its habitat resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- **MM-BIO-29** requires preconstruction surveys prior to Project-related non-routine ground disturbance in suitable habitat for the species. Impacts to suitable habitat subject to permanent and temporary construction disturbances and other types of ongoing Project-related disturbance activities would be minimized by adhering to the construction and on-going operational requirements as described in Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox (USFWS 2011 or as updated).
- **MM-BIO-30** requires avoidance measures for any occupied dens. Any proposed rodenticide use or burrow fumigation in suitable denning habitat would require pre-use surveys, and avoidance must be implemented for any occupied dens during ground-disturbing activities. Occupied dens may not be disturbed or destroyed without USFWS necessary take authorization/permit.

As stated previously, if new FERC licenses are accepted, these MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by anticipated license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

CALIFORNIA ENDANGERED AND THREATENED SPECIES AND FULLY PROTECTED SPECIES

Excluding fleshy owl's-clover, Hartweg's golden sunburst, California tiger salamander, foothill yellow-legged frog and San Joaquin kit fox, which are listed under both the federal ESA and CESA, eight species are listed under CESA as FP or are fully protected (FP) under California law. These species are: Bogg's Lake hedge-hyssop (*Gratiola heterosepala*; State Endangered), Crotch's bumble bee (*Bombus critchii*; State Candidate), limestone salamander (*Hydromantes brunus*; State Threatened), golden eagle (*Aquila chrysaetos*; State FP), Swainson's hawk (*Buteo swainsoni*; State Threatened), bald eagle (*Haliaeetus leucocephalus*; State Endangered), Western burrowing owl (*Athene cunicularia*; State Candidate), and ringtail (*Bassariscus astutus*; State FP). Potential effects of the Proposed Project on these eight remaining CESA or FP species are discussed below.

Bogg's Lake hedge-hyssop

Suitable habitat for the Bogg's Lake hedge-hyssop includes vernal pool habitats. Vernal pools are present near the Merced Falls and McSwain Reservoir Recreation Areas, but not within the recreation areas themselves.

Construction Impacts

There is no construction planned at Merced Falls, and the vernal pools at McSwain Reservoir are across the reservoir from the recreation area. Therefore, there will be no impacts to any of the vernal pool species by construction activities, including Bogg's Lake hedge-hyssop.

Given that the Proposed Project has no known occurrences of Bogg's Lake hedge-hyssop and no proposed construction-related activities at the only potential suitable habitat for the species, the Proposed Project construction would have **No Impact** on Bogg's Lake hedge-hyssop.

Operations Impacts

There are no known occurrences of Bogg's Lake hedge-hyssop on the Proposed Project, but there are vernal pools present near the Merced Falls and McSwain Reservoir Recreation Areas. However, the vernal pools are all outside of the recreation areas themselves, where there would be minimal to no operations activities.

Given that the Proposed Project has no known occurrences of Bogg's Lake hedge-hyssop and no proposed operations-related activities at the only potential suitable habitat for the species, the Proposed Project operations would have **No Impact** on Bogg's Lake hedge-hyssop.

Crotch's bumblebee

The Proposed Project boundary contains suitable habitat for Crotch's bumblebee, a Candidate for the CESA. Although there are no known occurrences of the species within the Proposed Project, there are documented occurrences within five miles.

Construction Impacts

There are grassland and scrub habitats present within the Proposed Project construction areas, which Crotch's bumblebee could use for foraging, as well as nesting, if there are suitable rodent burrows. The species sometimes nests aboveground in tufts of grass, old bird nests, rock piles, or tree cavities.

Proposed Project-related construction activities may impact Crotch's bumblebee and/or habitat through compaction, trampling (by foot or vehicle), flushing from habitat permanently or temporarily by noise/vibrations, nest destruction, removal, and/or degradation. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on Crotch's bumblebee and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

Implementation of **MM- BIO-1** through **MM-BIO-13** are required for all project activities. Limiting vegetation removal, requiring pre-construction surveys, workers trainings, among others, are all MMs that will also benefit Crotch's bumblebees. Required surveys would also incidentally locate Crotch's bumblebee nests. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including Crotch's bumblebee, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue. If new FERC licenses

are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these MMs in place, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** impact on Crotch's bumblebee and its habitat.

Operations Impacts

Ongoing Proposed Project operations activities that may affect Crotch's bumblebee include grading of dirt roads, vegetation management, herbicide application, or other ground-disturbing activities that can lead to minor disturbances of habitat, including underground burrows, should they be present. Fumigation of burrows may also impact the species. Additionally, recreation activities can also potentially affect this species if it tramples or otherwise disturbs habitat. However, the recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed and less likely to be suitable nesting habitat for the species. Individuals that frequent recreation areas would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on Crotch's bumblebee and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS does not specifically analyze this species. However, the 2015 FEIS assumes Merced ID accepts the new license and states (page 3-215) that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species, assuming acceptance of a new license.

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

This would reduce the potential effects of proposed construction on Crotch's bumblebee and its habitat, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Limestone salamander

The salamander is known to occur along the Merced River arm of Lake McClure in mixed chaparral habitats. There were 13 individuals observed during 2010 FERC relicensing studies. A portion of the BLM-administered Limestone Salamander Area of Critical Environmental Concern (ACEC) is also located along the Merced River arm of Lake McClure.

Limestone salamander habitat only intersects with one Proposed Project construction area: the proposed Sherlock Creek construction at the Bagby Recreation Area.

Construction Impacts

Proposed Project-related construction activities on the trail may impact limestone salamander and/or habitat through compaction, flushing from habitat permanently or temporarily by noise/vibrations, trampling (by foot or vehicle), removal, and/or degradation. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on limestone salamander and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumed Merced ID would accept the new license and analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on limestone salamander (page 3-218 to 3-220). Proposed Project activities that could affect the species include invasive weed control, vegetation management, road or trail maintenance, and recreation activities. The FEIS determined that the Proposed Project was not likely to adversely affect the species with the development and implementation of a protection plan that included surveys, habitat identification, operating periods for invasive weed control, and the use of general BMPs.

Implementation of **MM- BIO-1** through **MM-BIO-14** and **MM-BIO-22** through **MM-BIO-24** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, workers trainings, and implementation of pre-construction surveys, among others, are all MMs that will also benefit limestone salamander. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including limestone salamander, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue. Finally, if new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these MMs in place and given the small area of potential habitat that would be impacted, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** impact on limestone salamander and its habitat.

Operations Impacts

Ongoing Proposed Project operations activities that might impact limestone salamander will be limited to the use and maintenance of the proposed Sherlock Creek construction at Bagby Recreation Area, once it is built. Maintenance could include some grading of and vegetation management along the edge of parking areas and access roads. These activities could lead to minor disturbance of habitat, and trampling (by foot or vehicle) or flushing of individual salamanders temporarily or permanently from its habitat due to noise/vibration. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

The 2015 FEIS assumed Merced ID accepts the new license and analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on limestone salamander (page 3-

218 to 3-220). Proposed Project activities that could affect the species include invasive weed control, vegetation management, road or trail maintenance, and recreation activities.

The same MMs noted above for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species.

Given the limited intersection of Proposed Project recreation facilities and activities with potential limestone salamander habitat, any impacts would be limited to a few individuals and are not expected to have an overall impact on the species or its habitat. Therefore, the Proposed Project activities would have a **Less Than Significant With Mitigation Incorporated** impact on limestone salamander and its habitat.

STATE THREATENED, ENDANGERED, AND FULLY PROTECTED AVIAN SPECIES

There is suitable nesting, wintering, and/or foraging habitat for four CESA-listed and/or FP bird species - golden eagle, Swainson's hawk, bald eagle, and Western burrowing owl. Of these, only bald eagles are known to occur at following locations within the Proposed Project: (1) at Merced Falls dam at Lake McSwain, (2) in area of proposed trail between Lake McClure and Lake McSwain, (3) on Mack Island, (4) at Barrett Cove Recreation Area, and (5) at the location for proposed Sherlock Creek facilities in Bagby Recreation Area.

Construction Impacts

Raptors may be affected by construction activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as through habitat loss and fragmentation.

Ground disturbance, as well as vegetation and tree clearing, could result in direct effects on roosting or nesting birds, should they be present in construction or O&M, disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present near a Proposed Project work area. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on CESA-listed and/or FP bird species and their habitat would be avoided would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumed Merced ID accepts the new license and analyzed the potential effects of the Proposed Project's O&M, construction, recreation activities and proposed FERC License Article, BLM 4(e) Conditions and Merced ID Proposed Measures on bald eagle. Per the FEIS (page 3-216 to 3-218), 'Merced ID's proposed buffer distances and timing restrictions are consistent with the National Bald Eagle Management Guidelines (USFWS 2007).[25] These measures would provide protection for nesting bald eagles and would reduce potential effects related to project operation and maintenance activities…overall, implementing the [Bald Eagle Management Plan] with the specific measures required by FWS would result in an eagle protection plan that affords more protection to

[25] U.S. Fish and Wildlife Service (USFWS). (2007). National Bald Eagle Management Guidelines. May 2007. 23 pp.

bald eagles, thereby minimizing project effects on bald eagles nesting, wintering, and roosting in the project area.'

The FEIS does not analyze in much detail the Proposed Project effects on other special-status birds, including CESA-listed and FP birds. The FEIS assumes Merced ID accepts the new license and (page 3-215) states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.'

Implementation of **MM- BIO-1** through **MM-BIO-15** and **MM-BIO-21** through **MM-BIO-24** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, workers trainings, and implementation of protocol surveys, among others, are all MMs that will also benefit CESA-listed and FP bird species. Required surveys would also incidentally locate CESA-listed and FP bird species nests, if they were to occur in or near disturbance areas. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including CESA-listed and FP bird species, to move from an area of their own volition. One additional species-specific MM, **MM-BIO-32**, is described in the *Mitigation Measures* section and will be required during construction to protect CESA-listed and FP bird species, if projects are initiated prior to relicensing. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue. If new FERC licenses are accepted, the MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Species-Specific Mitigation Measures

To minimize the potential for adverse effects on CESA-listed and FP bird species and their habitat resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MMs will be required:

- **MM-BIO-32:** If clearing and/or construction activities occur during the migratory bird nesting season (February 1 – August 31), then preconstruction surveys to identify active migratory bird and/or raptor nests will be conducted by a qualified biologist within 7 days prior to construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500 ft buffer, where feasible.

With these measures in place, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** impact on CESA-listed and/or FP bird species and their habitats.

Operations Impacts

Raptors and other bird species may be affected by Proposed Project operations through direct impacts, such as mortality or injury, during vegetation management and recreation traffic. Ground disturbance, as well as vegetation and tree clearing during the nesting season, could result in direct effects on raptors and nesting birds should they be present in O&M disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present near an area of Proposed Project operations. The majority of recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed. Individuals

frequenting recreation areas, including nesting birds, would be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on CESA-listed and/or FP bird species and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS analyzed the potential effects of the Proposed Project's O&M, construction, recreation activities and proposed FERC License Article, BLM 4(e) Conditions and Merced ID Proposed Measures on bald eagles, assuming acceptance of a new license. Per the FEIS (page 3-216 to 3-218), 'Merced ID's proposed buffer distances and timing restrictions are consistent with the National Bald Eagle Management Guidelines (USFWS 2007). These measures would provide protection for nesting bald eagles and would reduce potential effects related to project operation and maintenance activities…overall, implementing the [Bald Eagle Management Plan] with the specific measures required by FWS would result in an eagle protection plan that affords more protection to bald eagles, thereby minimizing project effects on bald eagles nesting, wintering, and roosting in the project area.'

The FEIS does not analyze in much detail the Proposed Project effects on special-status birds, including CESA-listed and FP birds during operations. With the new license in place, the FEIS (page 3-215) states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.'

Merced ID will follow all federal and state regulations pertaining to the protection of nesting birds during Proposed Project O&M. Additionally, the majority of Proposed Project operations will occur at already developed recreation areas, where species are adapted to them. Project activities may impact individuals but are not expected to have an overall impact on CESA-listed and/or FP bird species or their habitats. Finally, the same MMs noted above for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Therefore, the Proposed Project activities would have a **Less Than Significant Impact with Mitigation Incorporated** on CESA-listed and/or FP bird species and their habitats.

Ringtail

Suitable habitat for ringtail consists of a mixture of forest and shrubland in close association with rocky areas or riparian habitats, as well as utilizing human structures. The species is usually not found more than 0.6 mile from permanent water. Most of the Proposed Project recreation areas have suitable habitat for ringtail, although the species has only been observed at the switchyard.

Construction Impacts

Ringtails may be affected by Proposed Project-related construction activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree clearing, could result in

direct effects on nesting ringtails, should they be present in construction areas. Furthermore, noise and other human activity may result in temporary or permanent flushing if ringtails are present near a work area. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on ringtails and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS does not specifically analyze ringtail. The FEIS (page 3-215) states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species, assuming acceptance of a new license.

Implementation of **MM- BIO-1** through **MM-BIO-8, and MM-BIO-10** through **MM-BIO-12** are required for all project activities. Limiting vegetation removal, requiring pre-construction surveys, workers trainings, and implementation of protocol surveys, among others, are all MMs that will also benefit ringtail. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including ringtail, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these measures in place, the Proposed Project's construction activities would have a **Less Than Significant Impact with Mitigation Incorporated** on ringtail and its habitat.

Operations Impacts

Ringtail may be affected by Proposed Project-related operation activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree clearing, could result in direct effects on nesting ringtails, should they be present in construction areas. Furthermore, noise and other human activity may result in temporary or permanent flushing if ringtails are present near a work area. Ringtail may also be impacted by the Proposed Project by way of injury or death due to interaction with facility equipment and entrapment in Proposed Project facilities. However, most of the recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed, and species frequenting recreation areas will be adapted to Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on ringtails and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS does not specifically analyze ringtail. The FEIS (page 3- 215) states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.' assuming acceptance of a new license.

The majority of Proposed Project operations will occur at already developed recreation areas, where species, including ringtails, are adapted to them. Project activities may impact individuals but are not expected to have an overall impact on ringtail or its habitat. Finally, the same MMs noted above for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species.

Therefore, the Proposed Project activities would have a **Less Than Significant Impact with Mitigation Incorporated** on ringtail and its habitat.

OTHER SPECIAL-STATUS SPECIES

An additional 41 special-status species not listed on or as a candidate for the ESA or CESA are known or have the potential to occur within the Proposed Project boundary. Of these there are 13 plants, one reptile, 3 aquatic species, 10 bird species, 12 bat species, and 2 other mammal species.

Other Special-Status Plants

There were five special-status plant species observed during the botanical inventory of the Proposed Project. In total, 274 occurrences of the following five special-status plant species were observed during field surveys in the recreation areas:

- Rawhide Hill onion (Allium tuolumnense), BLMS-A, CRPR 1B.2
- Mariposa clarkia (Clarkia biloba ssp. australis), BLMS-A, CRPR 1B.2
- Beaked clarkia (Clarkia rostrata), BLMS-A, CRPR 1B.3
- Mariposa cryptantha (Cryptantha mariposae), BLMS-A, CRPR 1B.3
- Shaggyhair lupine (Lupinus spectabilis), BLMS-A, CRPR 1B.2

An additional eight special-status plant species have potential habitat but have not been observed on the Proposed Project.

Construction Impact

If these special-status plants or their habitat are present at the Proposed Project recreation sites during construction, individuals may be impacted by compaction, trampling (by foot or vehicle), removal, or degradation of habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on special-status plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS (page 3-213 to 3-215) analyzed the potential effects of the Proposed Project's O&M, construction, recreation activities and proposed FERC License Article, BLM 4(e) Conditions and Merced ID Proposed Measures on sensitive plants, assuming Merced ID accepts the new license.

Per the FEIS, the 'Implementation of…proposed Vegetation Management Plan, Invasive Weed Management Plan, and Recreation Facilities Plan would reduce potential for adverse effects on sensitive plants…' and '…BMP[s]…referenced in the…plans would provide protection for sensitive species.'

Implementation of **MM- BIO-1** through **MM-BIO-14 -30** are required for all project activities. Limiting vegetation removal, requiring pre-construction surveys, and worker trainings, among others, are all MMs that will also benefit other special-status plants. Further, if impacts are unavoidable to other special-status plants, the proper resource agencies must be consulted/permits obtained before activities may continue. Implementation of these avoidance and minimization measures would reduce effects of proposed construction on other special-status plants and their habitat to **Less Than Significant With Mitigation Incorporated**.

Operations Impact

Ongoing Proposed Project operations activities that may affect special-status plants, or their habitat, should they be present, include grading of dirt roads, vegetation management, or other ground-disturbing activities that can lead to minor disturbances of habitat. Additionally, recreation activities can also potentially affect these species if it results in tramples or otherwise disturbs habitat. Most of the recreation areas, which will be subject to more frequent recreation and ongoing maintenance, such as campground and day use areas, are already developed, so new habitat or occurrences would not be impacted. Occurrences growing within recreation areas would be adapted to disturbance from Proposed Project operations. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on other special-status plants and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumed Merced ID accepts the new license and analyzed the potential effects of the Proposed Project's O&M, construction, recreation activities and proposed FERC License Article, BLM 4(e) Conditions and Merced ID Proposed Measures on sensitive plants (page 3-213 to 3-215). Per the FEIS, the 'Implementation of…proposed Vegetation Management Plan, Invasive Weed Management Plan, and Recreation Facilities Plan would reduce potential for adverse effects on sensitive plants…' and '…BMP[s]…referenced in the…plans would provide protection for sensitive species.

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. This would reduce the potential effects of proposed construction on other special-status plants and their habitat, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Coast Horned Lizard

Most of the recreation areas contain potential habitat for coast horned lizard (*Phrynosoma blainvillii*), though no occurrences are known within 5 miles of the Proposed Project.

Construction Impacts

If coast horned lizard or its habitat is present at the Proposed Project recreation sites, the habitat and individuals may be impacted during construction activities by compaction, flushing from habitat permanently or temporarily by noise/vibrations, trampling (by foot or vehicle), removal, or degradation. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on coast horned lizard and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should they be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS assumes Merced ID accepts the new license and states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.' (page 3-215)

Implementation of **MM- BIO-1** through **MM-BIO-8** and **MM-BIO-10** through **MM-BIO-13**, and **MM-BIO-22** through **MM-BIO-23** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, workers trainings, and implementation of protocol surveys, among others, are all MMs that will also benefit coast horned lizard. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including coast horned lizard, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue.

With these MMs in place, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** on coast horned lizard and its habitat.

Operations Impacts

Proposed Project operations that lead to disturbance of habitat, and recreational activities within and immediately adjacent to suitable habitat, may affect this species. This would include trampling (by foot or vehicle) and permanent or temporary flushing from foraging or breeding habitat due to noise/vibrations. Individuals frequenting recreation areas would be adapted to Proposed Project operations. Project activities may impact individuals but are not expected to have an overall impact on coast horned lizard or its habitat, due to the limited undeveloped areas where they will occur. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on coast horned lizard and its habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS assumes Merced ID accepts the new license and states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.' (page 3-215)

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. This would reduce the potential effects of proposed construction on coast horned lizard and its habitat, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Other Aquatic Species

Hardhead

Hardhead (*Mylopharodon conocephalus*) are a California SSC. Hardhead have been documented in the Proposed Project area, however, hardhead are susceptible to predation by non-native predatory fish, such as black bass, which may reduce or eliminate hardhead from otherwise suitable habitat (Moyle 2002). In addition, populations have been fragmented by project and non-project dams, effectively isolating historical populations into sub-populations upstream and downstream of the dams. Fish surveys in 2006 and 2008 found hardhead to be relatively abundant both up- and down-stream of the Proposed Project.

All standard MMs (**MM-BIO-1** through **MM-BIO-14**) will be required for all project activities. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Therefore, the Proposed Project would have a **Less Than Significant Impact with Mitigation Incorporated** on hardhead.

Sacramento Splittail

Sacramento Splittail (*Pogonichthys macrolepidotus*) are a California SSC. Sacramento Splittail have been observed in the Merced River but not above the Crocker-Huffman diversion dam. Sacramento splittail have not been documented in the Proposed Project area.

Therefore, the Proposed Project would have **No Impact** on Sacramento Splittail.

Lamprey

Pacific Lamprey (*Entosphenus tridentatus*) and Kern Brook Lamprey (*Lampetra hubbsi*) are both California SSC. Suitable habitat for lamprey is present in the Project area. A large number of assumed Pacific lamprey ammocoetes were found in the Merced River, the majority of which were below the Crocker-Huffman diversion dam, however, no adults were identified making positive identification difficult. The majority of identified Kern brook lamprey adults and juveniles found in the Merced River were found in the lower reaches below Crocker-Huffman diversion dam. Both species rely on gravel riffles for spawning and would be impacted by loss of gravel substrate entrapped behind the dams. Kern brook lamprey also require temperatures less than 77°F (25°C) in summer for spawning. Impacts to lamprey would be mitigated by the water temperature monitoring plan and gravel augmentation plan as outlined in the 2015 FEIS.

Therefore, the Proposed Project would have a **Less Than Significant** impact on Pacific lamprey and Kern brook lamprey.

Other Avian Species

There is suitable nesting, wintering, and/or foraging habitat for 10 special-status avian species, as well as other migratory birds within the Proposed Project boundary, although none have been observed in the Proposed Project area.

Construction Impacts

All native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under FGC § 3503. Birds may be affected by construction activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree removal, could result in direct effects on roosting or nesting birds, should they be present in construction or O&M, disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present near a work area. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on migratory bird species and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS does not analyze in much detail the Proposed Project effects on special-status birds, including CESA-listed and FP birds. The FEIS assumes Merced ID accepts the new license and states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.' (page 3-215)

Implementation of **MM- BIO-1** through **MM-BIO-16** and **MM-BIO-21** through **MM-BIO-30** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, workers trainings, and implementation of protocol surveys, among others, are all MMs that will also benefit other avian species. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including other avian species, to move from an area of their own volition. Finally, **MM-BIO-32** requires nesting bird surveys if any vegetation clearing, or construction activities, are scheduled to occur during the nesting bird season. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue.

If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these measures in place, the Proposed Project's construction activities would have a **Less Than Significant With Mitigation Incorporated** on other avian species and their habitat.

Operations Impacts

Migratory birds may be affected by Proposed Project operations through direct impacts, such as mortality or injury, during vegetation management and recreation traffic. Ground disturbance, as well as vegetation and hazard tree management during the nesting season, could result in direct effects on nesting birds should they be present in O&M disturbance areas. Furthermore, noise and other human activity may result in nest abandonment if nesting birds are present near an area of

recreation use or Project O&M. The majority of recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed, and individuals frequenting recreation areas, including migratory birds, would be adapted to Proposed Project operations. Project activities may impact individuals but are not therefore expected to have an overall impact on migratory bird species or their habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on migratory bird species and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The FEIS does not analyze in much detail the Proposed Project effects on migratory birds. The FEIS assumes Merced ID accepts the new license and states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.' (page 3-215)

Merced ID will follow all federal and state regulations pertaining to the protection of nesting birds during Proposed Project O&M. Additionally, the majority of Proposed Project operations will occur at already developed recreation areas, where species are adapted to them.

Further, the same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species.

This would reduce the potential effects of proposed construction on other avian species and their habitat during operations, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

SPECIAL-STATUS BATS

Suitable habitat for 12 special-status bats occurs in the Proposed Project, with nine of the of species observed within the Proposed Project, including:

- Pallid bat (*Antrozous pallidus*): SSC, BLM-S
- Townsend's big-eared bat (*Corynorhinus townsendii*): SSC, BLM-S
- Spotted bat (*Euderma maculatum*): SSC, BLM-S
- Western mastiff bat (*Eumops perotis californicus*): SSC, BLM-S
- Western red bat (*Lasiurus frantzii*): SSC, BLM-S
- Small-footed myotis (*Myotis ciliolabrum*): BLM-S
- Long-eared myotis (*Myotis evotis*): BLM-S
- Fringed myotis (*Myotis thysanodes*): BLM-S
- Yuma myotis (*Myotis yumanensisi*): BLM-S

These species may utilize a variety of habitats and structures for roosting and foraging throughout the Proposed Project, as well as in adjacent areas.

Construction Impacts

Special-status bats could be impacted by construction activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree removal, could result in direct effects on roosting bats, should they be present in construction disturbance areas. Furthermore, noise and other human activity may result in roost abandonment if roosts are present near a work area. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on special-status species and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumes Merced ID accepts the new license and analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on special-status bats (page 3-223 to 3-224). Pre the FEIS, the main potential effect on bats is from '…human presence and noise caused by human activity around Project facilities.' The FEIS determined that the Proposed Project, with implementation of the proposed measures to protect bats, '…would protect bats, including those with special status, by excluding them from project facilities, and, as a result, roosting bats would not be disturbed by Project staff entering the facility or visiting other project structures on a regular basis.'

Implementation of **MM-BIO-1** through **MM-BIO-8,** and **MM-BIO-10** through **MM-BIO-12,** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, and workers trainings, among others, are all MMs that will also benefit special-status bats. Required surveys would also incidentally locate special-status bats and their roosts. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including special-status bats, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue.

One additional species-specific MM for bats (**MM-BIO-33**) is included and includes pre-construction surveys.

With these measures in place, if the Proposed Project's construction activities would have a **Less Than Significant Impact With Mitigation Incorporated** on special-status bats and their habitat during construction.

Operations Impacts

Special-status bats could be impacted by Proposed Project operations through direct impacts, such as mortality or injury, during vegetation management and recreation traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree management, could result in direct effects on roosting bats, should they be present in operations disturbance areas. Furthermore, noise and other human activity may result in roost abandonment if roosts are present near an area of operations or recreation use. However, most of the recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed, and individuals frequenting recreation areas, including migratory bat species, would be adapted to Proposed Project

operations. Project activities may impact individuals but are not expected to have an overall impact on special- status bats or their habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on special-status bats and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumed Merced ID accepts the new license and analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures on special-status bats (page 3-223 to 3-224). Per the FEIS, the main potential effect on bats is from '…human presence and noise caused by human activity around Project facilities.' The FEIS determined that the Proposed Project, with implementation of the proposed measures to protect bats, '…would protect bats, including those with special status, by excluding them from project facilities, and, as a result, roosting bats would not be disturbed by Project staff entering the facility or visiting other project structures on a regular basis.'

Most of the Proposed Project operations will occur at already developed recreation areas, where bat species are adapted to them or where they have been, or will be, humanely excluded from facilities. Further, the same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species.

This would reduce the potential effects of proposed construction on special-status bat species and their habitat, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Mitigation Measures

To minimize the potential for adverse effects on ESA-listed plant species and its habitat resulting from Proposed Project implementation, if projects are initiated prior to new license acceptance, the following MM will be required:

- **MM-BIO-32** requires pre-construction surveys in Proposed Project structures and humane exclusion devices placed with enough time for all bats to clear a facility prior to any work being done.

As stated previously, if new FERC licenses are accepted, MMs would continue to apply to those construction and operations activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions. Alternatively, they would be replaced by license measures and mandatory conditions consistent with Merced ID's FLAs for Merced River and Merced Falls FERC projects.

Other Mammals

Two other special-status terrestrial mammal species have the potential to occur within the Proposed Project boundary: American badger (*Taxidea taxus*; SSC) and San Joaquin pocket mouse (BLM- S). Neither of these two special-status terrestrial mammal species has been observed within the Proposed Project, but there is appropriate habitat in most of the Proposed Project recreation areas.

Construction Impacts

Special-status terrestrial mammals could be impacted by construction activities through direct impacts, such as mortality or injury, during vegetation management and construction traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree removal, could result in direct effects on special-status terrestrial mammals, should they be present in construction disturbance areas. Furthermore, noise and other human activity may result in temporary or permanent flushing from foraging activities or burrows due to noise/vibration, if they are present near a work area. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on special-status terrestrial mammals and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumes Merced ID accepts the new license and states (page 3-215), 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.'

Implementation of **MM- BIO-1** through **MM-BIO-9,** and **MM-BIO-10** through **MM-BIO-12** are required for all project activities. Limiting vegetation removal, requiring pre-construction and daily clearance surveys, and workers trainings, among others, are all MMs that will also benefit other special-status mammals. In addition, **MM-BIO-31**, would require allowing any detected special-status wildlife species, including other special-status mammals, to move from an area of their own volition. Further, if impacts are unavoidable to habitats that served protected species, the proper resource agencies must be consulted/permits obtained before activities may continue. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

With these measures in place, the Proposed Project's construction activities would have a **Less Than Significant Impact With Mitigation Incorporated** on special-status terrestrial mammals and their habitat.

Operations Impacts

Special-status terrestrial mammals could be impacted by Proposed Project operations through direct impacts, such as mortality or injury, during vegetation management and recreation traffic, as well as habitat loss and fragmentation. Ground disturbance, as well as vegetation and tree management, could result in direct effects on special-status terrestrial mammals, should they be present in operations disturbance areas. Furthermore, noise and other human activity may result in temporary or permanent flushing and/or burrow abandonment if present near an area of operations or recreation use. However, most of the recreation areas, which will be subject to more frequent recreation, such as campground and day use areas, are already developed, and individuals frequenting recreation area would be adapted to Proposed Project operations. Project activities may impact individuals but are not expected to have an overall impact on special-status terrestrial mammals or their habitat. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on special-status terrestrial mammals and their habitat would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The 2015 FEIS assumes Merced ID accepts the new license and states (page 3-215) states that 'BMP manuals referenced in the final versions of the [Vegetation Management and Invasive Species Management Plans] would provide protection for sensitive species.'

Most of the Proposed Project operations will occur at already developed recreation areas, where special-status mammals are adapted to them. Further, The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species.

This would reduce the potential effects of proposed construction on other mammals and their habitat, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Two sensitive natural communities were identified in the recreation areas with Proposed Project construction-related activities, as well as ongoing Proposed Project operations. These communities are Red Willow Riparian Forest and Woodland, and Valley Oak Riparian Forest and Wetland, both of which are also considered riparian habitats (Appendix E, Sensitive Communities). There are 2.27 acres of Red Willow Riparian Forest and Woodland and 2.73 acres of Valley Oak Riparian Forest and Woodland in the vicinity of the Merced Falls Recreation Area. There are also 1.35 acres of Red Willow Riparian Forest and Woodland in the footprint of Horseshoe Bend Recreation Areas.

Construction Impacts

No new construction or upgrades are proposed at the Merced Falls Recreation Area, while there are multiple Proposed Project-related construction activities at Horseshoe Bend Recreation Area.

The area of Red Willow Riparian Forest and Woodland at Horseshoe Bend Recreation Area is in an area of proposed existing road improvements. However, inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction. After license implementation, assuming the license is accepted, the Integrated Vegetation Management Plan would also provide some protections to these communities.

Although adverse effects on riparian habitat and other sensitive natural communities would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

Riparian habitat and other sensitive natural communities will be protected by implementation of **MM-BIO-1** through **MM-BIO-15**. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Also, the road that crosses the Merced Falls Dam is not part of the Proposed Project, so road maintenance would not be covered under the license.

Application of the MMs would reduce the potential for impacts of the Proposed Project on riparian habitat and other sensitive natural communities to a **Less Than Significant Impact With Mitigation Incorporated**.

Operations Impact

Operation of the recreation areas may impact sensitive resources by way of habitat damage/ degradation (littering, trampling (by foot or vehicle), vegetation management, road management, etc.) during recreation use and Proposed Project operations. However, the developed recreation areas at Merced Falls and Horseshoe Bend are not near the mapped sensitive communities, outside of the existing road at Horseshoe Bend which runs in part near the Red Willow Riparian Forest and Woodland, so recreation-related activities would be minimal at those sites. Additionally, after license implementation, any potential impacts would be further reduced by the implementation of the Integrated Vegetation Management Plan, which the 2015 FEIS notes, "…implementing Merced ID's plan for vegetation management would reduce Project-related effects on terrestrial vegetation…" (page 3-208 to 3-209). Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during operations.

Fluctuations in the reservoir level may also impact riparian areas that grow at and near the shoreline. In support of the FLA, in 2022, Merced ID filed an updated Riparian Vegetation Monitoring Plan, which requires Proper Functioning Condition assessments to be completed at four sites: Sherlock Creek, upstream of Bagby Recreation Area, Maxwell Creek, and Piney Creek West Fork. These assessments will determine the condition of the four areas in the first full calendar year after license issuance and every seven years thereafter. These monitoring events will allow Merced ID to detect changes in the condition of the riparian areas over the course of the license and inform the need for new or modified measures/plans for the protection of riparian areas subject to impacts from the water level fluctuations of Lake McClure.

Although adverse effects on riparian habitat and other sensitive natural communities would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect the species. This would reduce the potential effects of proposed construction on riparian habitat and other sensitive natural communities, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The NWI identified wetlands at all of the Proposed Project recreation areas (Appendix E, NWI Maps).

Construction Impacts

If any federally protected wetlands are present at the Proposed Project recreation sites during construction, they may be impacted by compacting, trampling (by foot or vehicle), fill, or other degradation. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction. Further, after license implementation, if license is accepted, the Integrated Vegetation Management Plan would also provide for specific protections to state or federally protected wetlands.

Although adverse effects on state or federally protected wetlands would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

However, state and federally protected wetlands will be protected by implementation of **MM-BIO-1** through **MM-BIO-15**. If new FERC licenses are accepted, these MMs would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Application of the MMs would reduce impacts of the Proposed Project on riparian habitat and other sensitive natural communities to a **Less Than Significant Impact With Mitigation Incorporated** during construction.

Operations Impact

Operation of the recreation areas may impact wetlands by way of damage/degradation (littering, trampling (by foot or vehicle), vegetation management, and road management. However, the majority of identified wetlands are already in areas of developed recreation, where the only change in operations will be some projected higher use. At Mack Island and the new trails, developed areas are not proposed in the areas of NWI mapped wetlands, nor would recreation use, or maintenance activities be anticipated in or near them. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on state or federally protected wetlands would be avoided to the greatest extent possible, implementation of Proposed Project-related operations activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect species. This would reduce the potential effects of proposed construction on state or federally protected wetlands, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Impact BIO-4: 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 wildlife nursery sites?

Construction and Operations Impacts

Proposed Project-related construction at existing recreation areas and new recreation facilities may temporarily hinder or divert terrestrial wildlife movement through specific sites. However, none of these Proposed Project features represent major impediments or expose wildlife to risk by forcing them into more dangerous alternative routes, either through their use or their maintenance.

Additionally, there is no proposed work in the reservoir or other waters that would hinder aquatic species movement and there are no known wildlife nurseries in the areas of the Proposed Project that would be impacted.

Therefore, Proposed Project construction and operations will have a **Less Than Significant** impact on wildlife movement and nurseries.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction Impacts

There are no local ordinances protecting biological resources, but the Mariposa County Wide General Plan[26] contains a provision that development should "…minimize the removal of native trees and groves of trees…" The Proposed Project primarily includes rehabilitation of and construction on existing developed recreation areas, but there are several new recreation areas proposed. Construction of recreation areas at undeveloped sites are more likely to require the removal of native vegetation, including trees. Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on trees and other resources protected by Mariposa County Wide General Plan would be avoided to the greatest extent possible, implementation of Proposed Project-related construction activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

However, native trees and other biological resources will be protected by implementation of **MM-BIO-1** through **MM-BIO-33**. Implementation of these MMs would minimize any conflicts with the Mariposa General Plan to a **Less Than Significant Impact With Mitigation Incorporated**.

Operations Impacts

Vegetation management at the recreation areas would be the only planned operational activity that might impact native trees or groves of trees. However, tree removal at recreation areas would be limited to hazard trees, and trees are anticipated to be planted, as well, to provide shade and improve visual resources at the recreation areas. Removing only hazard trees meets the provision of the Mariposa General Plan to '…minimize the removal of native trees and groves of trees…"

[26] County of Mariposa. 2022. Mariposa County Wide General Plan. https://www.mariposacounty.org/458/General-Plan. Accessed: September 2024.

Inclusion of the license measures and mandatory conditions following acceptance of a new license, would result in a **Less than Significant** impact on protected species during construction.

Although adverse effects on trees and other resources protected by Mariposa County Wide General Plan, implementation of Proposed Project-related operations activities prior to relicensing may result in direct and/or indirect effects on these species, should individuals be present in areas proposed for disturbance. Therefore, there would be potentially significant impacts resulting from construction if projects are implemented prior to relicensing.

The same MMs noted previously for construction, including species-specific and other MMs, would be implemented during operations, as appropriate, to continue to protect species.

This would reduce the potential effects of proposed construction on trees and other resources, if projects are implemented prior to relicensing, to **Less Than Significant With Mitigation Incorporated**.

Impact BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no adopted Habitat Conservation Plans or Natural Community Conservation Plans within the Proposed Project boundary (CDFW 2024b); therefore, there would be **No Impact**.

3.3.4 Biological Resources Mitigation Measures

Multiple MMs will be implemented during the Proposed Project-related construction and O&M activities, if projects are initiated prior to relicensing, to reduce the potential for impacts to federal and non-federal-listed and other protected biological resources to Less than Significant.

However, if new FERC licenses are accepted during the Proposed Project-related construction or O&M activities, some of the MMs will be fulfilled, in part or in full, by the measures and plans that would be mandated by the new licenses.

Table 3.3-4, below, details the MMs for the Proposed Project-related construction and O&M activities and notes which of the proposed MMs would be covered by measures and plans incorporated into the proposed FERC license applications after license implementation, assuming acceptance of the license.

Table 3.3-4. Mitigation Measures To Be Implemented If Projects Are Initiated Prior to Relicensing

Mitigation Measure Description	Post License Acceptance
MM-BIO-1: Permits. Merced ID will consult with the applicable Federal, State, and local agencies to obtain necessary permits and will comply with these permits during all construction activities.	Regulatory requirement and measure included in FLA
MM-BIO-2: Project Footprint. Work area footprints will be confined as much as reasonably practicable. All parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities will be confined, to the greatest extent possible, to previously disturbed areas. Additionally, the site footprint/area will be clearly defined and marked to avoid working in areas outside of the approved area. Fences and flagging will be installed by the contractor in a manner that does not impact habitats and other sensitive areas to be avoided and that is clearly visible to personnel on foot and operating heavy equipment.	Fully covered by: • Vegetation Management Plan • Measure included in FLA
MM-BIO-3: Garbage and Microtrash. Work areas will be kept clear of garbage, including microtrash (small pieces of trash or smaller, broken-down pieces of trash). Trash and food will be stored in closed containers and removed daily to reduce attractiveness to opportunistic predators such as coyotes, domestic and feral dogs and cats, opossums, skunks, and raccoons. Littering of trash and food waste will be prohibited. Upon completion of a decommissioning activity, the work site will be inspected to ensure it is free of garbage and microtrash. If garbage or microtrash is detected at the site, it will be removed.	Measure is included in FLA
MM-BIO-4: Vehicular Controls. All proposed project-related vehicle traffic will be confined to established roads, staging areas, and parking areas. Vehicle speeds will not exceed 15 miles per hour, on access roads with no posted speed limit, to avoid collision with special-status species or habitats. Additionally, maintenance or refueling of vehicles or equipment must occur in designated areas and/or a secondary containment, located away from wetted areas.	Fully covered by: • vehicle refueling covered by Hazardous Material Management Plan • Measure included in FLA
MM-BIO-5: Clean Fill. To reduce the introduction of non-native invasive species and weeds, imported fill will be minimized to the extent possible. If required, any imported fill will come from clean sites (soils will be chemically tested as needed) and be weed-free.	Measure is included in FLA
MM-BIO-6: Worker Environmental Awareness Program (WEAP). A WEAP will be established and implemented prior to the start of work activities in the field and cover biological and cultural resources. The program will be presented by a qualified biologist and a qualified archaeologist to all construction crew members. If new employees join the crew, they will receive formal, approved training prior to working on site. Upon completion of the orientation, employees will sign a form stating they attended the program and understand all protection measures. A fact sheet containing the presented information will also be prepared and distributed. For biological resources, the WEAP will cover special-status wildlife species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, penalties for violating Federal laws, reporting requirements, environmental commitments, and protective measures to implement in the event that the species is found during activities.	Measure is included in FLA

Mitigation Measure Description	Post License Acceptance
MM-BIO-7: Flagging Sensitive Resources. Prior to any work occurring, any known sensitive resources, which include, but are not limited to, cultural resources, special-status species, sensitive habitats, targeted nonnative invasive plants and other predetermined areas with significant sensitive resources within or near the proposed work area will be flagged/fenced to ensure that no activities are conducted in those areas.	Fully covered by: • Vernal Pool Fairy Shrimp Protection Measure • Vegetation Management Plan • Invasive Species Management Plan • Measure included in FLA
MM-BIO-8: Minimization of Vegetation Removal. Disturbance or removal of vegetation will be kept to the minimum necessary to complete project related activities, including riparian vegetation removal and trimming. No native riparian trees with a trunk diameter at breast height in excess of 4 inches will be removed without prior consultation and approval from CDFW. To prevent unintended or unnecessary removal or trimming of riparian vegetation, orange barrier fencing, or flagging, will be erected to clearly define the habitat to be avoided during work activities.	Fully covered by: • Vegetation Management Plan • Invasive Species Management Plan • Measure included in FLA
MM-BIO-9: Special-status Semi-Aquatic Species Protections. Prior to the commencement of any project-related activities or utilization of any project facilities (e.g., staging or parking areas, laydown areas, etc.) that may directly affect special-status semi-aquatic species or their associated habitat, a qualified biologist will perform clearance surveys to locate any semi-aquatic species that may be present. Further, if there is an occurrence, species will be allowed to leave the area of its own volition.	Fully covered by: • Special-status Frog Protection Plan • Limestone Salamander Sensitive Areas Management Plan • California Tiger Salamander Protection Measure • Measure included in FLA
MM-BIO-10: No Net Loss of Sensitive Communities. Mitigation for permanent adverse effects on sensitive communities (seasonal wetlands/riparian habitat) will be provided at a minimum 1:1 ratio. Mitigation can include onsite restoration, in-lieu fee payment, or purchase of mitigation credits at an agency approved mitigation bank. Mitigation as required in regulatory permits issued through CDFW, the USFWS, and/or USACE, as well as the revegetation described in the Project Description, may be applied to satisfy this measure.	Fully covered by: • MID Merced River Hydroelectric Project: Riparian Vegetation Monitoring Plan • Measure included in FLA
MM-BIO-11: Biological Monitor. If determined necessary by a qualified biologist, a biological monitor will be on site during all ground-disturbing and vegetation removal activities associated with construction in areas of vernal pools, delineated aquatic resources, sensitive communities (as mapped in Appendix E) or known special-status species occurrences identified during pre-construction surveys (MM-BIO-12).	Fully covered by: • Special-status Frog Protection Plan • San Joaquin Kit Fox Protection Plan • Measure included in FLA
MM-BIO-12: Pre-construction Surveys. Prior to the start of activities not already covered under existing license measures or plans that may impact biological resources, pre-construction surveys for sensitive habitats and sensitive species will be conducted. Surveys will be conducted by qualified biologists and during the appropriate timeframe for detection of target species, within the given period for the activity (e.g., nesting bird surveys will not be performed for activities that will take place completely outside of the nesting bird season).	Fully covered by: • Vegetation Management Plan • San Joaquin Kit Fox Protection Plan • Special-status Frog Protection Plan • Limestone Salamander Sensitive Areas Management Plan • California Tiger Salamander Protection Measure • Measure included in FLA

Mitigation Measure Description	Post License Acceptance
MM-BIO-13: Equipment Cleaning. Off-road equipment brought into construction areas from outside the FERC Project Boundary or from sites known to contain invasive weeds occurrences will be free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of invasive weeds. All construction equipment, earth moving equipment, and vegetation management equipment, excepting chainsaws, will be thoroughly inspected and cleaned before entering the proposed project, to reasonably prevention introduction of invasive weeds.	Fully covered by: • Limestone Salamander Sensitive Areas Management Plan • Special-status Frog Protection Plan • California Tiger Salamander Protection Measure • Invasive Species Management Plan • Measure included in FLA
MM-BIO-14: Avoidance of Aquatic Habitat Impacts to delineated aquatic resources will be limited to the amount necessary to successfully complete all work activities. To prevent unintended or unnecessary impacts, orange barrier fencing or flagging will be erected to clearly define the aquatic habitat to be avoided. Further, no heavy equipment will operate, or any excavation take place, in the portion of the stream where flowing water is present.	Measure included in FLA
MM-BIO-15: Vernal Pool Fairy Shrimp Protection. A 250-foot buffer will be flagged around vernal pool habitat when ground-disturbing activities occur adjacent to habitat. A qualified biologist may approve variances to this buffer distance if deemed appropriate. Provision will also protect other species that inhabit vernal pools.	Fully covered by Vernal Pool Fairy Shrimp Protection Plan
MM-BIO-16: Elderberry Shrubs Fencing/Flagging. All elderberry shrubs will be flagged or fenced with a buffer of 20 feet from their dripline prior to implementation of vegetation management or ground-disturbing activities. A qualified biologist may approve variances to this buffer distance if deemed appropriate. If necessary, the area will be revegetated with native plants once the activity is completed and fencing/flagging removed.	Fully covered by Vegetation Management Plan
MM-BIO-17: Elderberry Shrubs Training. A qualified biologist will provide training to project crew prior to work within 165 feet of elderberry shrubs, as well as monitor the work at appropriate intervals. This will be integrated into the WEAP (MM-BIO-7).	Fully covered by Vegetation Management Plan
MM-BIO-18: Potential Valley Elderberry Longhorn Beetle Habitat. Elderberry shrubs with stems of over an inch at ground height will be considered as potential habitat and subject to protection. An activity restriction period of March 1 to November 1 of each year within 165 feet of elderberry shrubs that meet this criterion. No elderberry shrubs may be removed during the restriction period.	Fully covered by Vegetation Management Plan
MM-BIO-19: Smaller Elderberry Shrubs Restrictions. Elderberry shrubs with stems of less than an inch can be trimmed between November and February. More broadly, any activities that would occur within 165 feet of these smaller shrubs will be conducted, to the extent feasible, between August and February.	Fully covered by Vegetation Management Plan
MM-BIO-20: Use of Rodenticides or Fumigants. If California tiger salamander are present, rodenticides and/or burrow fumigants cannot be used within 300 feet of the occurrence without consultation for take under the federal ESA with the USFWS.	Fully covered by California Tiger Salamander Protection Measure

Mitigation Measure Description	Post License Acceptance
MM-BIO-21: California Tiger Salamander Protocol Surveys. Non-routine ground-disturbing activities are not allowed within 300 feet of California tiger salamander suitable breeding or upland habitat without a pre-activity/pre-construction survey. If surveys locate the species or if any new occurrence of California tiger salamander are located where Project activities may affect them, the CDFW and USFWS must be consulted.	Fully covered by California Tiger Salamander Protection Measure
MM-BIO-22: Project Work Area Fencing. Within 100 feet of California tiger salamander known breeding or upland habitat, per pre-construction surveys, fencing will be erected to prevent California tiger salamander and other special-status species from entering the work area. No synthetic netting may be used in the work area. A qualified biologist may approve variances to this buffer distance if deemed appropriate. Prior to the start of work each morning within the disturbed work limits, a qualified person (trained by a qualified biologist) will check for California tiger salamander under equipment and materials to be used that day. The qualified person will also check all excavated steep-walled holes or trenches for CTS. If CTS are located, they will be allowed to move from the area on their own, unless work must continue in the area, in which case, the CDFW and USFWS will be contacted.	Fully covered by California Tiger Salamander Protection Measure
MM-BIO-23: Work Area Inspections. If there are open culverts or pipes, they will be inspected prior to filling or burying, and all equipment and vehicles will be inspected to make sure no federal ESA-listed amphibians are present prior to use each day. To the extent feasible, excavations will not be left open at the end of the day and will be covered after confirming absence of trapped individuals. For any activities requiring an excavation, if excavations are to be left open and unattended for more than 12 hours, they will either be covered, surrounded with exclusion fencing, or an escape ramp will be constructed to the bottom of the pit with less than a 2:1 slope, to provide an escape route to prevent small wildlife species (e.g., amphibian, lizards, rodents) in the area from getting trapped in the excavation. Prior to commencement of work activity each day, staff will check excavations to ensure no animals are trapped. Before backfilling or permanently closing any excavation, it will be checked to ensure no wildlife are present within the excavated area. If wildlife has become trapped, it will be removed prior to closure or backfilling.	Fully covered by California Tiger Salamander Protection Measure
MM-BIO-24: Equipment Disinfected For Use In Aquatic Habitats. Any equipment used in aquatic habitats must be disinfected to prevent the spread of chytrid fungus (*Bd* and *Bsal*) and other pathogens, such as ranaviruses, as well as other aquatic invasive species. Decontamination is also required when equipment and gear are being transferred between different watersheds.	Fully covered by a variety of management plans: • Limestone Salamander Sensitive Areas Management Plan • Special-status Frog Protection Plan • California Tiger Salamander Protection Measure •
MM-BIO-25: Pesticides Use Near California Red-legged Frog. When application of pesticides is deemed necessary within 500 feet of aquatic habitat suitable for California red-legged frog, adverse effects to individuals and their habitat will be avoided.	Fully covered by Special-status Frog Protection Plan
MM-BIO-26: California Red-legged Frog Surveys. If Project activities are proposed within 300 feet of suitable habitat for the species, a pre-activity/pre-construction survey for California red-legged frog will be conducted. If surveys locate the species or if any new occurrence of California red- legged frog are located where Project activities may affect them, the USFWS must be consulted.	Fully covered by Special-status Frog Protection Plan

Mitigation Measure Description	Post License Acceptance
MM-BIO-27: California Red-legged Frog Fencing. Temporary wildlife exclusion fencing will be installed around the Proposed Project work footprint to prevent the frog from gaining access to the active construction area. Any California red-legged frog found in a work area will be allowed to leave of its own volition, with all work stopped within 50 feet.	Fully covered by Special-status Frog Protection Plan
MM-BIO-28: Foothill Yellow-legged Frog Surveys. Surveys for foothill yellow-legged frog at Sherlock Creek will be conducted prior to any construction to reduce mortality of frogs within the Proposed Project boundary.	Fully covered by Special-status Frog Protection Plan
MM-BIO-29: San Joaquin Kit Fox Protection. Preconstruction surveys will be performed prior to Project-related non-routine ground disturbance in suitable habitat for the species. Impacts to suitable habitat subject to permanent and temporary construction disturbances and other types of ongoing Project- related disturbance activities will be minimized by adhering to the construction and on- going operational requirements as described in Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox (USFWS 2011 or as updated).	Fully covered by San Joaquin Kit Fox Protection Plan
MM-BIO-30: Occupied San Joaquin Kit Fox Dens and Suitable Denning Habitat. Avoidance measures must be implemented at any occupied dens. Any proposed rodenticide use or burrow fumigation in suitable denning habitat will require pre-use surveys, and avoidance must be implemented for any occupied dens. Occupied dens may not be disturbed or destroyed without a USFWS necessary take authorization/permit.	Fully covered by San Joaquin Kit Fox Protection Plan
MM-BIO-31: Special-Status Wildlife Species. If special-status wildlife species are detected, those individuals will be allowed to move from the area of their own volition. If impacts to special-status species cannot be avoided, the agency(ies) with jurisdiction will be consulted and any necessary permits or approvals will be acquired prior to the commencement of construction. Damage or injury to special-status species will be reported immediately to the agency(ies) with jurisdiction. Any siting of a special-status species will be reported immediate to the USFWS and/or CDFW.	Fully covered by: • Limestone Salamander Sensitive Areas Management Plan • Special-status Frog Protection Plan • California Tiger Salamander Protection Measure • San Joaquin Kit Fox Protection Plan • Bald Eagle Management Plan • Measure included in FLA
MM-BIO-32: Migratory Bird and Raptor Surveys. If clearing and/or construction activities occur during the migratory bird nesting season (February 1 – August 31), then preconstruction surveys to identify active migratory bird and/or raptor nests will be conducted by a qualified biologist within 7 days prior to construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500 ft buffer, where feasible.	Fully covered by: • Bald Eagle Management Plan • Measure included in FLA
MM-BIO-33: Bat Protections. If bat exclusion measures are not already in place or bat surveys have not occurred the year of construction, all Proposed Project buildings (including powerhouses, storage buildings, dams, recreation facilities or other structures), will need to be surveyed for bats, roosts and/or signs of roosts/use. If bats are determined to be utilizing a facility, humane exclusion devices will need to be placed during the appropriate time (November 1-February 28) with construction occurring after confirmation that all bats have been excluded from the facility.	Fully covered by: • Bat Protection Plan • Measure included in FLA

3.3.5 Summary of Impacts

Relicensing Status at Time of Project Initiation	Following Relicensure	Prior to New License	Prior to New License	Prior to New License
Impact	**Level of Significance**	**Level of Significance Before Mitigation**	**Mitigation**	**Level of Significance with Mitigation Incorporated**
Impact BIO-1: 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	Less than Significant	Significant Impact	MM-BIO-1 through MM-BIO-33	Less than Significant
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CFW or USFWS	Less than Significant	Significant Impact	MM-BIO-1 through MM-BIO-33	Less than Significant
Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands	Less than Significant	Significant Impact	MM-BIO-1 through MM-BIO-33	Less than Significant
Impact BIO-4: 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 wildlife nursery sites	Less than Significant	Less Than Significant	N/A	Less than Significant
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	Less than Significant	Significant Impact	MM-BIO-1 through MM-BIO-33	Less than Significant
Impact BIO-6: Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	No Impact	No Impact	N/A	No Impact

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3.4 Cultural Resources

This section describes the regulatory and environmental setting related to cultural resources in the Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the Proposed Project Area, which includes five existing recreation areas: McSwain, McClure Point, Barrett Cove, Horseshoe Bend, and Bagby; the proposed Mack Island recreation area; and certain additional trails, including a bike trail from the McSwain Recreation Area to the McSwain Dam, a trail from the McSwain Recreation Area to the New Exchequer Dam at the base of Lake McClure, and improvements on a trail from Bagby to Sherlock Creek. Previously identified cultural resources within or immediately adjacent to each area are discussed below.

As described in Section 2.3, the Proposed Project also includes continued operations and maintenance at the Merced Falls Recreation Area. No new construction or upgrades are proposed at the Merced Falls Recreation Area. Merced ID will continue to operate and maintain the existing recreation facilities, including the River's Edge Fishing Access area, the Merced Falls Fishing Access area, restroom, informal Angler Trail along northern shoreline, the two informal parking areas on either side of Hornitos Road County Bridge, and the car-top boat launch at Merced Falls Fishing Access area. Directional and safety signage would be posted at the informal canoe portage trail at the south end of Merced Falls Dam. As no new construction or upgrades are proposed, the Proposed Project has no potential to impact historical resources under CEQA. Several previously recorded linear cultural resources which pass through the Merced Falls Recreation Area are discussed in associated with the McSwain Recreation Area.

3.4.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential cultural resources impacts and identifying mitigation. The cultural resources standards within the Study Area are regulated by the federal government and the state of California.

Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal undertakings to consider the effects of the action on historic properties. Historic properties are defined by the Advisory Council on Historic Preservation (ACHP) regulations (36 Code of Federal Regulations [CFR] Part 800) and consist of any prehistoric or historical archaeological site, building, structure, historic district, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the National Register criteria (36 CFR Part 800.16[l]).

To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP.

For projects involving a lead federal agency, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must be at least 50 years old and meet the criteria for evaluation set forth in 36 CFR Part 60.4.

The quality of significance in American history, architecture, archaeology, engineering, and culture must be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. They must also meet one or more of the four criteria for inclusion in the NRHP:

- Criterion A: Association with events that have made a significant contribution to the broad patterns of history;
- Criterion B: Association with the lives of persons significant in the past;
- Criterion C: Embodiment of distinctive characteristics of a type, period, or method of construction; the work of a master; high artistic values; or a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: History of yielding, or the potential to yield, information important in prehistory or history.

If a cultural resources professional meeting the Secretary of Interior's Qualification Standards determines a particular resource meets one of these criteria, it is considered as a historic property eligible for listing in the NRHP. Among other criteria considerations, a property that has achieved significance within the last 50 years is generally not considered eligible for inclusion in the NRHP unless it is deemed exceptionally significant.

Resources listed in, or eligible for listing in, the NRHP are automatically eligible for the CRHR and are considered historical resources for the purposes of CEQA.

Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 25 U.S.C. 3001)

Under the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001) and implementing regulations 43 CFR Part 10, federal agencies are responsible for the protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered on lands under the agency's jurisdiction. All human remains and potential human remains must be treated with respect and dignity at all times.

State

California Register of Historical Resources: Public Resources Code Section 5024

Resources eligible for listing in the California Register of Historical Resources (CRHR) are considered historical resources. The term historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of public resource code (PRC) (PRC Section 5020.1[j]).

Historical resources may be designated as such through three different processes:

1. Official designation or recognition by a local government pursuant to local ordinance or resolution (PRC Section 5020.1[k]);
2. A local survey conducted pursuant to PRC Section 5024.1(g); or
3. The property is listed in or eligible for listing in the NRHP (PRC Section 5024.1[d][1]).

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR, which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

It is associated with events that have made a significant contribution to the broad patterns of:

1. California's history and cultural heritage;
2. It is associated with the lives of persons important in our past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or may be likely to yield, information important in prehistory or history. (CCR 14 Section 4852).

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (CCR 14 Section 4852[c]).

Unique Archeological Resources

The PRC also requires the Lead Agency to determine whether or not a project would have a significant effect on unique archaeological resources (PRC Section 21083.2[a]).

The PRC defines a unique archaeological resource as follows.

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
    - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
    - Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
    - Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2).

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of a historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR.

California Public Resources Code Section 5097.98 and 5097.99

PRC Section 5097.98 (and reiterated in CEQA Guidelines Section 15064.5 [e]) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. PRC Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains which are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any such

artifacts or human remains is guilty of a felony which is punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell of dissect or with malice or wantonness is also guilty of a felony which is punishable by imprisonment.

California Health and Safety Code Section 7050.5

Regarding the discovery of human remains on non-federal lands, Section 7050.5 of the California Health and Safety Code (CHSC) states the following:

a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the [PRC]. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the [PRC] or to any person authorized to implement Section 5097.98 of the [PRC].

b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the California Government Code [CGC]), that the remains are not subject to the provisions of Section 27491 of the CGC or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the PRC. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) (CHSC Section 7050.5).

Of particular note to cultural resources is subsection (c). After notification, NAHC would follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants (MLD), if possible, and recommendations for treatment of the remains. The MLD would have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains, or artifacts taken from a grave or cairn is a felony under State law (PRC Section 5097.99).

California Graves Protection and Repatriation Act of 2001

Section 8010 and 8011 of the CHSC also address the protection of Native American human remains and cultural items and state:

- 8010. This chapter shall be known and may be cited as the California Native American Graves Protection and Repatriation Act (CALNAGPRA) of 2001.
- 8011. It is the intent of the Legislature to do all of the following:

(a) Provide a seamless and consistent state policy to ensure that all California Indian human remains, and cultural items be treated with dignity and respect.

(b) Apply the state's repatriation policy consistently with the provisions of the Native American Graves Protection and Repatriation Act (25 U.S.C. Sec. 3001 et seq.), which was enacted in 1990.

(c) Facilitate the implementation of the provisions of NAGPRA with respect to publicly funded agencies and museums in California.

(d) Encourage voluntary disclosure and return of remains and cultural items by an agency or museum.

(e) Provide a mechanism whereby lineal descendants and culturally affiliated California Indian tribes that file repatriation claims for human remains and cultural items under the Native American Graves Protection and Repatriation Act (25 U.S.C. Sec. 3001 et seq.) or under this chapter with California state agencies and museums may request assistance from the commission in ensuring that state agencies and museums are responding to those claims in a timely manner and in facilitating the resolution of disputes regarding those claims.

(f) Provide a mechanism whereby California tribes that are not federally recognized may file claims with agencies and museums for repatriation of human remains and cultural items.

3.4.2 Environmental Setting

This section presents an overview of information on the local prehistory and history of the Proposed Project area and vicinity. Understanding local cultural history is critical in defining important local, state, and/or regional events, trends, or patterns in prehistory and history by which the significance of prehistoric and historical cultural resources may be evaluated and their significance may be established.

Archaeological Context

The following subsection is excerpted from the Merced ID's relicensing *Amended Cultural Resources Inventory Report* prepared by HDR for the Merced ID relicensing (Flint et al. 2015).

Rosenthal's (2011) synthesis of the archaeological record for the north-central Sierra Nevada proposes five temporal sequences. This work suggests that human occupation during the Early Archaic Period (11,500-7000 before present [B.P.]) is evidenced by a small quantity of stone artifacts (flake tools and percussed debitage) and dated materials (i.e., hydration readings and radiocarbon analysis) found buried in late Pleistocene soils (Rosenthal et al. 2011:82). Evidence for Middle Archaic (7000-3000 B.P.) sites is more common and associated with gentle spur ridges or hill slopes. Rosenthal et al. (2011:82) notes that most of these are temporary camp and task sites found in buried soils, and that most of the artifact assemblages from this period have not been found intact and, therefore, have not provided the data needed to define the temporal indicators associated with the Middle Archaic Period. One exception is a residential site noted as "…containing in-filled house pits, storage pits, and related artifact caches and scatters (Meyer 2008)" (Rosenthal et al. 2011:82).

Late Archaic (3000-1100 B.P.) sites were found in buried contexts on ridges, hill slopes, fans, and footslopes (Rosenthal et al. 2011:83). They represent camps and task sites generally associated with fire-affected rock, milling tools and other tools not identified by Rosenthal et al.

There is a gap in the data analyzed by Rosenthal et al. for the Recent Prehistoric I Period (1100-610 B.P.), which lacks evidence (Rosenthal et al. 2011:83-84). Rosenthal suggests that this may reflect a response to the "Medieval Climatic Anomaly" responsible for drought conditions found throughout western North America at that time, likely requiring a change in settlement and use patterns (Rosenthal et al. 2011:84).

Archaeological evidence for occupation during the Recent Prehistoric II Period (610-100 B.P.) is expressed as surface manifestations associated with midden and bedrock milling stations (Rosenthal et al. 2011:83). Materials from this period are diverse and representative of residential occupation, and include artifact caches, refuse scatters, hearths and structural remains, and tools and dietary evidence.

Ethnohistory

The following ethnography is excerpted from the Merced ID's relicensing *Technical Memorandum 13.1, Native American Traditional Cultural Properties*, and Traditional Cultural Property Report (TCP) report prepared by McCarthy (2014) for the Merced ID relicensing.

Little ethnographic information pertains directly to the Southern Sierra Miwok, the primary tribal representatives in the Project Area, as most information gathered by Twentieth Century ethnographers focused on the Miwok of Yosemite Valley. That being considered, much is known about the general patterns of the Sierra Miwok and some basic cultural patterns emerge that can be applied to the Southern Sierra Miwok.

Many accounts of the Sierra Miwok were recorded during the early development of California, after the Gold Rush. These include documentation of the Miwok from the latter part of the Nineteenth Century and the first quarter of the Twentieth Century primarily by Powers (1976 [1877]), Barrett (1908), Kroeber (1908, 1976 [1925]), and Merriam (1907). Powers was the first to describe the Sierra Miwok (McCarthy 2014).

Kroeber (1976 [1925]), using linguistic data, wrote that the Sierra Miwok territory extended from the Cosumnes River to the Fresno River. The Southern Sierra Miwok group is part of the Eastern Miwok and has two dialect areas; one along the Merced River and the other along Mariposa Creek and the Chowchilla and Fresno rivers (Levy 1978). It is thought that the occupation of the Sierra Foothills by the ancestral Miwok likely began around 800 years ago (Levy 1978).

The main political unit of the Miwok was the tribelet, which included political lineage localities that made up the permanent settlements. There was an average population estimated to be around 25 persons. Habitation occurred in semi-permanent settlements and numerous seasonally occupied campsites that were used at various times throughout the year for gathering, hunting, and fishing activities (Levy 1978). Ethnographic literature points to the presence of a chief or an assembly house in the community at the capital or principal settlement (Levy 1978).

The preference for Miwok settlements was along water ways, "typically along streams or on ridges or knolls with a southern exposure" (Moratto 1984:290). House types among the Miwok included the semi-subterranean dance house, the sweat house, and the kocha or living house. The dance house, or hanji, was the largest of the three structure types and consisted of two rows of two posts, with the door of the house facing east. Sweat houses were smaller structures but were built in a similar fashion to the dance house. The kocha, or living houses, were "ruder, earth-covered" houses and were thought to only have been lived in for part of the year (Kroeber 1976 [1925]:447). Barrett and Gifford (1933) described Miwok dwellings as being conical and consisting of both above ground and semi-

subterranean structures. They also discuss house types not mentioned by Kroeber, which include a ceremonial brush structure, a ceremonial rectangular structure, also of brush, and a grinding booth (Barrett and Gifford 1933). Other structures built and used by the Sierra Miwok included caches and granaries for the storage of goods, in particular acorns (Barrett and Gifford 1933; Kroeber 1976 [1925]).

The Sierra Miwok made baskets using twined and coiled techniques for storing and processing acorns, seed beating and burdening, cradles, and winnowing (Barrett and Gifford 1933; Kroeber 1976 [1925]; Levy 1978). For cooking, hot stones were placed in baskets to boil acorn meal.

Miwok technology also included the production of ground stone items, such as mortars and pestles, important in the processing of plant material, and in particular acorns. Kroeber (1976 [1925]:448) wrote, "[t]he Miwok pound acorns with pestles in holes in granite exposures; on flat slabs laid on or sunk into the ground without a basket hopper…" Handstones and bedrock mortars (BRM) were used to grind the acorn meal into flour (Levy 1978).

Lithic technology produced a range of tool types, including both flaked and ground stone tools, including projectile points; knives, scrapers, and expedient tools like hammer stones and choppers made from various materials, such as chert and obsidian (Levy 1978). Moratto (1984:287-88) notes that there are many "Sierran mineral resources of archaeological interest" found in the central Sierra which include: "alabaster, steatite, quartz crystals, basalt, rhyolite, slate, clay, hematite, chert, chalcedony and granite bedrock." These materials, in addition to the obsidian obtained from several quarries located at Bodie Hills, Mono Craters, Mono Glass Mountain, Casa Diablo, Mt. Hicks, Queen, Fish Springs and Coso Hot Springs (Moratto 1984), were the toolstone of choice for the manufacture of flaked and ground stone implements, and for the production of rock art.

Bow and arrow, as well as stone tools used in the manufacture of the bows and arrows, were noted by Levy (1978) and described as the preferred implement for hunting and war. He notes that a variety of types of projectile points were made by the Miwok, also for hunting and war, and that the foreshaft of the arrows was "designed to remain implanted in the victim even when the main shaft was removed or broken off" (Levy 1978: 405). The points were manufactured with a concave base, and on occasion side-notches were added (Levy 1978), which likely helped to better anchor the points to the arrow shafts.

Flora and fauna located on the western side of the Sierra run in north-south bands, which would have provided easier access to the Miwok for valley, foothill, and mountain resources within their area of occupation (Moratto 1984). The Sierra Miwok traveled to higher or lower elevations during various seasons of the year to obtain subsistence resources unavailable in the vicinity of their permanent settlements. In general, alpine resources were only accessed during the summer months and foothill and valley resources were accessed throughout the year (Moratto 1984). The inhabitants occupying the transition zone forest moved to elevations above 800 ft during the summer months in pursuit of deer. Those in the foothill areas would occasionally visit the plains of the central valley to hunt pronghorn and tule elk, which were unavailable in the mountains (Levy 1978).

The Miwok hunted large game, with an emphasis on deer. Grizzly bear, black bear, elk, antelope, rabbits, and birds were also hunted. Large game animals were hunted and eaten communally. Meat consumption was at its greatest in the winter months when plant resources were limited to stored foods (Levy 1978). Gathering of plant foods varied seasonally, as greens were gathered in the spring and were used to supplement the diet of acorns stored from the previous fall. Seeds were gathered

from May to August. Pine nuts were collected after August, when the land was burned. In the late fall and early winter, acorns were gathered (Levy 1978).

The Miwok also fished in the many available water ways and collected a large variety of plant materials that included berries and other fruits, nuts, roots, bulbs, wild greens and grass seeds (Levy 1978; Moratto 1984). Barrett (1908), Kroeber (1908), and Merriam (1907) all recorded temporary habitation and fishing villages along the Merced River between Merced Falls and Bagby. Chinook salmon, among other fishes, were caught with nets and harpoons. The Sierra Miwok fished in groups during the seasons when the salmon ran the river (McCarthy 2014). The salmon runs and the fishing were eventually disrupted and prevented by mining activities and the building of dams. The construction of Benton Mills in particular prevented access to upstream salmon spawning grounds and likely disturbed nearby ethnographic villages (McCarthy 2014:16).

McCarthy (2014:16) notes the difficulty in accurately identifying the villages described by Barrett, Kroeber, and Merriam due to the small scale of their maps, the severe alterations to the landscape resulting from historic mining, and the inundation of the area through construction of the original and new Exchequer Dams. Based on archival research, however, she estimates the locations of villages within the Project Area (McCarthy 2014:16).

The population of the Southern Sierra Miwok before European contact is estimated to have been approximately 2,700 (Levy 1978). The Eastern Miwok were first contacted by Spanish explorers in the second part of the eighteenth century in the Sacramento-San Joaquin Valley (Levy 1978). From that time on, dramatic cultural changes developed, including the transformation of previously independent tribelets into unified militias resisting the violence of forced labor, forced missionization, and displacement that was intensified by virulent epidemics and genocide, which killed many thousands of Miwok persons in the first half of the nineteenth century (Levy 1978).

During the 1840s, European and North American fur trappers, gold miners, and settlers arrived in droves, creating hostile relations between miners and the Sierra Miwok. For a brief time, Southern Sierra Miwok supplied labor for J.D. Savage's gold mining operations in the Big Oak Flat district, but as the number of miners increased, large mining operations were shut down and Miwok participation decreased (Levy 1978). Records indicate that at least 200 Miwok were killed by the miners during the years 1847 to 1860 (Levy 1978).

A policy of confiscation of Indian lands was implemented with the annexation of California by the United States (Levy 1978). Although treaties were signed by several members of the tribelets, they were never ratified by the U.S. Senate (Levy 1978). A few groups of Sierra Miwok were relocated to the Fresno area but most of the Sierra Miwok population remained in rancherias scattered throughout the Sierra Nevada foothills (Levy 1978). Reliance on wage labor steadily increased and dependence on gathering and hunting diminished throughout the end of the nineteenth century and early twentieth century. No reservations were established in Southern Sierra Miwok territory, and rancherias there received no official recognition by the federal government (Levy 1978).

Historic Context

Historical Overview

The first permanent European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated the majority of the California

region during this period. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. This included the forced conversion of the aboriginal population to Spanish colonial society and Catholicism, which often consisted of subjugating Native Americans into a life of servitude to Spanish citizens. The nearest missions to the Merced River and San Joaquin River confluence were Missions Santa Clara, San Jose, and San Juan Bautista (Castillo 1978; Cleland 1941).

The subsequent Mexican Period (1821 to 1848) followed the Mexican Revolution in 1821; however, changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos (Castillo 1978). John C. Fremont was on his third expedition to California for the United States government in 1847 when the Mexican-American War began. He served as a captain in the army to help the United States defeat Mexico. That same year, Fremont purchased Ranchos Las Mariposas from Mexican Governor Juan Alvarado; the rancho was a 44,386-acre tract of land located along the south shore of the Merced River. Rancho Las Mariposas become prominent during the American Period (1848-present) and the California Gold Rush of 1849, when Fremont discovered important gold deposits on his land. At the same time, others were seeking mining opportunities along the Merced River drainage (Grossman 1993).

Establishment of the Merced Irrigation District

Ranchers and farmers have adapted to the arid summer climate of the San Joaquin Valley by constructing irrigation systems along the Merced River and throughout the region. In the 1860s, these systems began as small-scale projects that modified and expanded existing natural waterways. The Robla Canal Company and Farmer's Canal Company were early irrigation systems that preceded more ambitious projects in the 1880s (McSwain 1978). In 1883, local landowner and grain farmer, C. H. Huffman, enticed Charles C. Crocker into purchasing the Farmer's Canal Company, which then reorganized as the Merced Canal and Irrigation Company (McSwain 1978:5). Crocker was best known as one of the four businessmen responsible for building the western portion of the transcontinental railroad. Between 1883 and 1888, the Merced Canal and Irrigation Company made many improvements to the existing irrigation facilities that had been acquired and constructed new facilities, culminating at a new reservoir at Yosemite Lake (McSwain 1978:7). In 1888, the Crocker-Huffman Land and Water Company was incorporated to include land owned by Huffman.

Lead Design Engineer M. M. O'Shaughnessy designed a diversion dam on the Merced River, which was then considered an engineering innovation (McSwain 1978:9). O'Shaughnessy later became the City Engineer for San Francisco and built the dam at Hetch Hetchy that bears his name. By 1914, the Crocker-Huffman Company had purchased 20,000 acres of land for what had been the Dry Creek Reservoir, three miles north of Snelling (McSwain 1978:15). At this time, intense opposition prevented formation of the Merced Irrigation District (Merced ID). Three years later, in 1917, the Merced County Farm Bureau renewed efforts to create an irrigation district. In 1919, a public vote led to the Merced ID's formation on December 8, 1919 (McSwain 1978:18).

Upon its organization, Merced ID set out to design the new irrigation system to include the purchase of the Crocker Huffman Land and Water Company in addition to building new facilities and relocating the reservoir from Dry Creek to Exchequer (McSwain 1978:19, 24). Construction on the new system at Exchequer began in 1922 and required the relocation of the Yosemite Valley Railroad.

After selling bonds totaling $16 million in 1926, Merced ID completed the Exchequer Dam, and extended the canal system and power facilities. On June 23, 1926, President Calvin Coolidge, from his desk at the White House, started the generators at Exchequer for the first time (Merced ID 2023).

The original Exchequer Dam was one of the largest concrete gravity arch dams at the time, measuring 326 feet tall and backing water for a run of 14 miles with a storage capacity of 281,000 acre-feet. Merced ID's power facilities consisted of two generators each with a rated capacity of 15,625 kilowatts (Merced ID 2023).

The Merced River Project

The Great Depression of the 1930s and 1940s strained the finances of Merced ID's customers, primarily agricultural entities, and decreased the overall demand for water. Individuals such as D. K. Barnell, who served on the Board of Directors from 1925 to 1945, guided Merced ID through the economically challenging times. During World War II, Merced ID had to delay most of its capital improvement projects due to lack of funding or material shortages. By the 1950s, the U.S. economy had recovered, which increased the demand for water. This led Merced ID to search for a way to increase its storage, power output, and flood control capabilities (Merced ID 2023). In 1964, Merced ID was granted a license from the Federal Power Commission (now FERC) to expand the irrigation and power facilities on the Merced River (Merced ID 2023).

To accomplish the expansion, Merced ID entered into a contract with the Pacific Gas and Electric Company (PG&E), a neighboring hydropower generator, where Merced ID would sell all electric energy produced by the expansion project to PG&E at a price that would allow Merced ID to finance the expansion project at no cost to district taxpayers or growers (Merced ID 2023). In 1964, construction began on the McSwain and New Exchequer dams and the accompanying powerhouses and spillways. McSwain Dam was named in recognition of Kenneth McSwain, known as "Mr. Merced ID," the Chief Engineer and Manager who helped Merced ID successfully overcome economic adversities during the Great Depression (Merced ID 2023).

Recreation

OVERVIEW

The impetus for the recreation facilities began with Merced ID's search for a solution to meet the rising demands for water in the post-World War II period. In 1964, the Federal Power Commission granted Merced ID a license to expand the irrigation and power facilities to meet the rising demand (Flint et al. 2015). Included in the license was a provision that Merced ID was "not to exceed $2,146,000" for construction costs of four recreation areas surrounding the McClure and McSwain reservoirs (California, State of 1967:8). The original four recreation areas, completed in 1969 and 1970, were Lake McSwain Recreation Area, McClure Point Recreation Area, Barrett Cove Recreation Area, and Horseshoe Bend Recreation Area. The Bagby Recreation Area at Lake McClure was acquired by Merced ID in 1995 (*Merced Sun-Star* 1995).

The four original recreation facilities were funded by the Davis-Grunsky Act (a California legislative act), which is administered by the California Department of Water Resources and was authorized in 1960 as part of the Burns-Porter Act (formally known as the California Water Resources Development Bond Act). The goal of the act was to provide publicly funded recreational opportunities at reservoirs developed in California. The main purpose of the reservoirs was to store and transmit water but, as demand for additional recreational sites grew, these new water features became lucrative (DWR 2022). An $8 million grant from the act for recreation development and facility maintenance enabled the Merced ID recreation facilities to be completed and maintained (*Merced Sun-Star* 1973)

By 2019, 33 hydropower-related recreation facilities had been funded wholly or in part by the Davis-Grunsky Act. Four are located in Northern California, 20 in Central California, and nine in Southern California. Most of these facilities were developed in the 1960s and 1970s and reflect a common association between recreation and water storage in California. The majority of these facilities are under private ownership and provide a variety of amenities. Nearly every facility has water sports, fishing, and camping, though some are designated for day use only (DWR 2019, 2024).

While the Act expanded reservoir recreation by providing public funding, recreation around reservoirs had been well established by the 1960s. For example, Big Bear Lake in San Bernardino County, CA was established as a reservoir in 1911, and the growing availability of automobiles helped the reservoir become a popular recreation destination. Another example, the Big Sage Reservoir in Modoc County, CA, was completed in 1921 and, from the beginning, offered a variety of recreation opportunities. Many of California's nearly 200 reservoirs have associated recreation facilities (DWR 2019).

RECREATION AREA CONSTRUCTION

Once the construction on New Exchequer Dam and McSwain Dam was complete in 1967, planning efforts began for the recreation facilities that would accompany the expanded reservoirs. Plans were drawn by Merced ID consulting engineers Tudor Engineering Company of San Francisco (*The Modesto Bee* 1968). No specific date for the opening of the recreation areas was initially set, and construction lasted three years, from 1967 to 1970. The timetable was delayed once in 1968 to accommodate the construction of "minimum use" facilities at McSwain's McClure Point, which was already a popular public recreation destination that lacked infrastructure (*The Modesto Bee* 1968).

The first completed recreation area was the Lake McSwain Recreation Area, which officially opened to the public on April 19, 1969. At that time, temporary boat launch facilities had been completed at what would become McClure Point Recreation Area, which was scheduled to open in July 1969. Fees were $2.50 for overnight camping at the Lake McSwain Recreation Area and $1.00 for day use at both recreation areas (*The Modesto Bee* 1969).

The project was completed in several stages, with the construction of Barrett Cove and Horseshoe Bend recreation areas to follow completion of the Lake McSwain and McClure Point recreation areas. Merced ID issued contracts to construction firms throughout the Central Valley for different aspects of project construction. A Fresno firm, The Thomas Construction Company, was awarded the contract for the recreation facilities at McClure Point and "minimum use" facilities at Barrett Cove (*The Fresno Bee* 1968).

McClure Point officially opened to the public for the July 4th weekend in 1969 (*The Fresno Bee* 1969). The recreation area opened with 89 campsites available but expanded in 1970 to its current capacity of 101 campsites. Work was underway at both Barrett Cove and Horseshoe Bend, and those were opened in early 1970.

As a part of the 1984 California Parks Bond Act, the state gave Merced ID $1 million in grants for recreation improvements. Merced ID used the funding to make a series of extensive improvements to all four recreation areas. At Lake McSwain Recreation Area, Merced ID used a $290,000 grant for a picnic area, playground, and swimming facility improvements (*The Fresno Bee* 1985). Improvements at Barrett Cove, located at the west side of Lake McClure, included an overhaul of the swim lagoon and installation of new playground equipment and picnic areas (*Merced Sun-Star* 1988).

In 1995, Merced ID acquired the Bagby Recreation Area, located at the eastern terminus of Lake McClure. The recreation area was in use as early as 1971; however, it was previously owned and operated by the Usona Corporation. Following the acquisition, Merced ID made a series of improvements including reconstructing the road to the campground and rebuilding the concession area (*Merced Sun-Star* 1995).

Merced ID has conducted ongoing construction and improvement projects at all its recreation areas. Based on a 2022 survey, including a review of available historic aerial imagery, the recreation facilities have been substantially altered since their original construction (NETR 2024).

LAKE MCSWAIN FACILITY ALTERATIONS

Using funds from the 1984 grant, Merced ID made numerous alterations at the Lake McSwain Recreation Area between 1984 and 1998. The Marina Shop was added west of the main parking lot and the boat launch was reconstructed. North of the main parking lot, Merced ID added Loop G, which contains 22 recreational vehicle (RV) campsites, an octagonal picnic/barbeque area, and an RV dump/cleanout station. Merced ID also added new concrete staircases to connect the RV area to the main parking and marina areas, as well as multiple concrete retaining walls. A Merced ID office was constructed northwest of the main parking area. A large picnic canopy, play structure, and two parking areas were developed further west from the Merced ID office at the western terminus of Lake McClure Road. Multiple picnic shelters were also added at the swimming area between the main parking and new picnic areas (NETR 2024).

Between 1998 and 2005, Merced ID installed a concrete restroom at the main parking lot, as well as new landscaping and additional paved parking areas (NETR 2024). Loop 'DC', added between 2016 and 2018, features six modular cabins with running water, electricity, and metal roofs. The cabins within Loop DC were carved from a section of Loop D and required multiple campsites to be removed from existing Loop D (NETR 2024). Multiple campsites within Loops A through F have non-historic electrical and water hookups, shade canopies, and picnic tables.

LAKE MCCLURE FACILITY ALTERATIONS

Non-historic alterations have also occurred at the four Lake McClure recreation facilities. At McClure Point, most of the restroom shower facilities have been decommissioned through the partial-to-full removal of shower stalls, piping, and stall dividers, and most of the restroom doors are non-functional. Most of the restroom drinking fountains have been removed. The off-lake swimming area is open seasonally from Memorial day to Labor Day, approximately. The north boat ramp and marina were extensively altered in 2015 by paving the parking area; installing sidewalks, curbs, and lighting; installing a restroom facility; and constructing the current two-lane concrete boat ramp (*Merced Sun-Star* 2015).

As with McClure Point, the Barrett Cove restroom facilities have also been decommissioned through the partial-to-full removal of restroom and shower facilities. All original dock and marina facilities have been removed, and the abandoned office has deteriorated. The off-lake swim area was renovated in 1988 with the installation of 12 metal canopies and a large play structure. That swim area is open seasonally, from Memorial Day to around Labor Day. Adjacent to the main parking lot west of the original office, a restroom and five wood canopies were added between 1984 and 1998. At Loop K, a large group picnic/barbeque area was added between 1984 and 1998 and three modular cabins with running water, electricity, and metal roofs were added between 2012 and 2014 (NETR 2024). Non-historic electrical hookups, shade canopies, and picnic tables were present at multiple campsites within Loops A – L, indicating replacement as needed over time. Loop I was

converted into a downhill, non-technical bicycle trail and associated day use parking area. As a result, all infrastructure within Loop I has been removed and camping is prohibited. Lastly, the boat ramp at the Barret Cove Launching Facility has been extended eastward into the lake multiple times to reach receding waters (NETR 2024).

Similarly, the Horseshoe Bend Recreation Area restroom facilities have been decommissioned through the partial-to-full removal of restroom and shower facilities. A commemorative plaque indicates that in 1973 a stone wall was built around the swimming area; however, the lake has receded a substantial distance from the swimming area, rending it non-functional. A separate plaque indicates that, in 1979, a stone bridge was built at the campground. Two other similar bridges at the campground were likely installed in the 1970s as well. Loop G was developed between 1984 and 1998 to provide 20 additional campsites, a large hexagonal picnic/barbeque area, and a restroom (NETR 2024). Multiple campsites within Loops A – F contained non-historic electrical hookups, shade canopies, and picnic tables. Lastly, the boat ramp at the main boat launch parking area has been extended multiple times to reach receding waters (NETR 2024). During the 2022 survey, the field crew observed visitors using the ramp to get closer to the water; however, they were launching from unmaintained, sandy points along the water's edge.

At Bagby Recreation Area, Merced ID conducted extensive alterations shortly after acquiring the site in 1995. Merced ID constructed a concrete block restroom; upgraded camping sites with wood canopies, electrical hook-ups, and picnic tables; constructed a water treatment building in the main boat launch parking area; and, based on commemorative signage and materials, upgraded the boat launch facility ca. 2006 with a new concrete restroom, new sidewalks and railings, a new facility sign, a fish cleaning station, and an extended and widened boat ramp.

3.4.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on cultural resources The thresholds used to evaluate potential cultural resources impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and are listed below. Except as provided in PRC Section 21099, impacts on cultural resources are considered significant if the Proposed Program would result in any of the following:

- Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.
- Disturb any human remains, including those interred outside of dedicated cemeteries.

Impact Assessment Assumptions and Methodology

Archaeological Resources Assumptions

Archaeological resources can include historical resources according to CEQA Guidelines Section 15064.5 as well as unique archaeological resources as defined in CEQA Guidelines Section

21083.2(g). The significance of most prehistoric and historical archaeological sites is usually assessed under National Register and California Register Criteria D/4. These criteria stress the importance of the information potential contained within the site, rather than its significance as a surviving example of a type or its association with an important person or event. Although it is less common, archaeological resources may also be assessed under California Register Criteria 1, 2, and/or 3.

Impacts to unique archaeological resources or archaeological resources that qualify as historical resources are assessed pursuant to Section 21083.2 of the CEQA statute, which states that the lead agency shall determine whether the Project may have a significant effect on archaeological resources. As with architectural resources above, whether the impacts of the Project would "cause a substantial adverse change in the significance" of the resource must be determined (CEQA Guidelines Section 15064.5[b]).

Architectural Resources Assumptions

Potential impacts on architectural resources are assessed by identifying any activities (either during construction or operations) that could affect resources that have been identified as historical resources for the purposes of CEQA. Once a resource has been identified as a CEQA historical resource, it then must be determined whether the impacts of the Project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of an historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired" (CEQA Guidelines Section 15064[b][1]). An historical resource is considered materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in the California Register (CEQA Guidelines Section 15064.5[b][2][A]).

Where potential impacts on historical resources are identified, CEQA Guidelines Section 15126.4(b) states that compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings will generally reduce potential impacts to a less than significant level. In addition, "in some circumstances, documentation of an historical resource…as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur" (CEQA Section 15126.4(b)(2)).

Human Remains Assumptions

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified above in the Regulatory Setting. Specifically, CEQA Guidelines Section 15064.5(d) requires a lead agency to work with Native Americans to develop an agreement for treating, with appropriate dignity, human remains, and any items associated with the burials. Upon discovery of human remains that the County Coroner determines to be Native American in origin, the Native American Heritage Commission identifies the person or persons it believes to be the most likely descended from the deceased Native American. This analysis considers impacts on human remains including intentional disturbance, mutilation, or removal of interred human remains.

Impact Assessment Methodology

The location and eligibility status of previously recorded archaeological, ethnographic, and built environment resources were identified using:

- Records searches data of previously conducted cultural resource studies and previously recorded cultural resources on file with the California Historical Resources Information System (CHRIS) housed at the Central California Information Center (CCIC) at California State University, Stanislaus, the BLM Mother Lode Field Office in El Dorado Hills, and the BLM California headquarters – database searches conducted in 2008-2010, and augmented in 2012, 2015, and 2022.
- Maps, site records, and other files in the *Final: Amended Cultural Resources Inventory Report for the Merced River Hydroelectric Project Relicensing (FERC No. 2179), Mariposa County, California* (Flint et al. 2015).
- Maps, site records, and other files in the *Traditional Cultural Properties Study: Native American Presence in the Merced River Hydroelectric Project Relicensing (FERC No. 2179), Mariposa County, California* (McCarthy 2014).
- Significance assessments and management recommendations in the *Amended Historic Properties Management Plan, Merced River Hydroelectric Project, FERC Project No. 2179* (Merced Irrigation District 2015).
- Listings of the National Register of Historic Places (NRHP).
- Listings of the California Register of Historical Resources (CRHR).
- Listings of the California Office of Historic Preservation's (OHP) Build Environment Resources Directory (BERD).
- California Points of Historical Interest (1992).
- California State Landmarks (1996).
- California Inventory of Historic Resources (1988).
- Caltrans Historic Bridge Survey.
- Historic aerials and topographic maps available at (www.historicaerials.com).

The records search data revealed the entirety of the Proposed Project Area was previously subject to intensive cultural and Tribal resource studies in support of Merced ID's environmental compliance work for the Merced River Hydroelectric Project Relicensing Project. The results of these studies form the basis for the resource summary and impact analysis noted below.

Identification of Historic Resources

ARCHAEOLOGICAL RESOURCES

The records searches and relicensing studies identified 61 previously recorded archaeological resources within the seven recreation areas. These are summarized in Table 3.4-1.[27] These sites

[27] The remains of the Yosemite Valley Railroad (P-22-1019) are located in five of the recreation areas (Bagby, Barretts Cove, Mack Island, McClure Point, and McSwain), hence the table total of 65 resources.

consist of 42 historic-era resources, 9 precontact sites, and 10 multicomponent sites containing both precontact and historic-era constituents.

Out of the 42 total historic-era archaeological resources, sufficient data was collected during the intensive pedestrian survey to determine that 23 of the historic-era sites to do not contain significant associations or data potential and are considered ineligible for the CRHR. The remaining 19 historic-era sites require further archival research and/or fieldwork to determine their eligibility and, for the purposes of this analysis, remain unevaluated.

Eight (8) of the 9 precontact sites are also unevaluated pending further fieldwork to determine the data potential at each. One precontact site, P-22-0739 at the McSwain recreation area, is a precontact habitation site and is eligible for CRHR listing. All 10 of the multicomponent sites require further investigation and also remain unevaluated for the CRHR.

One multicomponent site at the Bagby recreation area and one precontact site at the Sherlock Creek recreation area are both directly within the proposed area of impact for the recreation area improvements. Per the pre-construction measures described below in **MM-CUL-1A** that will be required for those projects initiated prior to relicensure, both sites require further fieldwork and analysis to determine the full breadth of the archaeological components, the location (if any) of significant archaeological remains, and the development of site-specific avoidance measures. These sites include:

P-22-0593	P-22-3635

Two precontact sites, 11 historic-era sites, and five multicomponent sites are within 50 feet of a proposed project element and are likely to be impacted, to some degree, by ground-disturbance absent site-specific avoidance measures per **MM-CUL-1B** that will be required for those projects initiated prior to relicensure,. These sites include:

P-22-3407	P-22-3409
P-22-3563	P-22-3564
P-22-3629	P-22-3561
P-22-3629	P-22-3250
P-22-3386	P-22-0002
P-22-3345	P-22-3569
P-22-3581	P-22-3582
P-22-3583	P-22-0739
P-22-3216	P-22-3217

The remaining 18 unevaluated archaeological resources consist of 6 precontact sites, 8 historic-era sites, and 4 multicomponent sites. Although within the recreation areas, the defined boundaries of each of these sites is at least 50 feet away from any project-related improvement including ground disturbance. As such, absent further refinement of the proposed project, there is minimal potential for impacts to these 18 sites:

P-22-0734	P-22-3621
P-22-3356	P-22-3429
P-22-3615	P-22-3616

P-22-3622	P-22-3423
P-22-3620	P-22-3235
P-22-3228	P-22-3253
P-22-3372	P-22-3427
P-22-3233	P-22-3379
P-22-3528	P-22-3381

See Appendix E for the California Department of Parks and Recreation (DPR) forms for all documented archaeological sites listed below.

Table 3.4-1. Archaeological Resources within the Project Area and Applicable Mitigation Measures

Count	Site Number (Primary/Trinomial)	Age	Type	NRHP/CRHR Eligibility	Applicable Mitigation Measures
Bagby Recreation Area					
1	P-22-0593	M	Bagby townsite, precontact BRM and artifact concentration	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
2	P-22-0734	P	BRM	Unevaluated	None Required
3	P-22-1019	H	remains of the historic Yosemite Valley Railroad	Ineligible	N/A
4	P-22-2667	H	remnants of a portion of historic California Highway 49 (P-22-2667) at the abandoned town of Bagby, CA (P-22-00593).	Ineligible	N/A
5	P-22-3407	H	Waste rock piles	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
6	P-22-3408	H	dry-laid rock retaining wall and a concrete spring box	Ineligible	N/A
7	P-22-3409	H	Placer mining features	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
8	P-22-3563	H	Historic habitation and placer mining site	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
9	P-22-3564	M	BRM and mining features	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
10	P-22-3591	H	road	Ineligible	N/A
11	P-22-3617	H	historic utility line corridor	Ineligible	N/A
12	P-22-3621	M	BRM and mining features	Unevaluated	None Required
13	P-22-3629	H	Ditch	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
14	P-22-3561	H	Foundation pads	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
15	P-22-3406	H	Refuse concentration	Ineligible	N/A
16	P-22-3356	H	Gray's Flat placer mine	Unevaluated	None Required
17	P-22-3429	H	Placer mine	Unevaluated	None Required
18	P-22-3615	M	BRM, ditch	Unevaluated	None Required
19	P-22-3616	P	BRM	Unevaluated	None Required

Count	Site Number (Primary/Trinomial)	Age	Type	NRHP/CRHR Eligibility	Applicable Mitigation Measures
20	P-22-3622	H	Mining features	Unevaluated	None Required
21	P-22-3635	P	BRM	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
22	P-22-3629	H	Placer mine	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
23	P-22-3423	P	BRM	Unevaluated	None Required
Barretts Cove Recreation Area					
24	P-22-3250	M	BRM and residential property	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
25	P-22-3385	H	Road	Ineligible	N/A
26	P-22-3386	P	BRM and artifact concentration	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
27	P-22-3389	H	Road	Ineligible	N/A
28	P-22-3539	H	Spoils pile	Ineligible	N/A
29	P-22-3638	H	Utility poles	Ineligible	N/A
30	Barrett's Bridge	H	(Remains of Yosemite Valley Railroad)	Ineligible	N/A
31	P-22-3538	H	Road and rusted cable	Ineligible	N/A
32	P-22-1019	H	Remains of Yosemite Valley Railroad	Ineligible	N/A
33	P-22-3384	H	Rock retaining wall	Ineligible	N/A
Horseshoe Recreation Area					
34	P-22-0002	H	Segment of State Route 132	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
35	P-22-3345	M	BRM, artifact concentration, historic townsite along State Route 132	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
36	P-22-3569	M	BRM, mining complex	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
37	P-22-3577	H	Refuse concentration	Ineligible	N/A
38	P-22-3578	H	Road	Ineligible	N/A
39	P-22-3579	H	Refuse concentration	Ineligible	N/A
40	P-22-3581	M	BRM, precontact artifact concentration, historic road, historic rock piles, historic refuse.	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
41	P-22-3582	H	Historic homestead	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
42	P-22-3583	H	Refuse scatter and concentrations, retention ponds, depression	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
43	P-22-3620	H	Mining prospect pits and waste rock	Unevaluated	None Required
44	P-22-3585	H	Road	Ineligible	N/A
Mack Island					
45	P-22-3235	M	BRM and mining features	Unevaluated	None Required
46	P-22-3638	H	Utility poles	Ineligible	N/A

Count	Site Number (Primary/Trinomial)	Age	Type	NRHP/CRHR Eligibility	Applicable Mitigation Measures
47	P-22-1019	H	Yosemite Valley Railroad remnants	Ineligible	N/A
48	P-22-3385	H	Road	Ineligible	N/A
McClure Point Recreation Area					
49	P-22-1019	H	Yosemite Valley Railroad remnants	Ineligible	N/A
50	P-22-3228	P	BRM	Unevaluated	None Required
51	P-22-3234	H	"staircase-like feature"	Ineligible	N/A
52	P-22-3253	P	BRM	Unevaluated	None Required
53	P-22-3372	H	Mining features	Unevaluated	None Required
54	P-22-3380	H	Road segments, ditch	Ineligible	N/A
55	P-22-3427	H	Prospect pit and waste rock	Unevaluated	None Required
56	P-22-3233	H	Rock wall, prospect pit	Unevaluated	None Required
57	P-22-3379	P	BRM	Unevaluated	None Required
58	P-22-3528	H	Rock wall	Unevaluated	None Required
59	P-22-3249	H	Water conveyance features	Ineligible	N/A
60	P-22-3381	M	Precontact village site, historic-era mining site	Unevaluated	None Required
McSwain Recreation Area					
61	P-22-1019	H	Remains of Yosemite Valley Railroad	Ineligible	N/A
62	P-22-3218	H	Refuse concentration	Ineligible	N/A
63	P-22-0739	P	BRM, artifacts, midden	Eligible	MM-CUL-1 MM-CUL-2 MM-CUL-3
64	P-22-3216	H	Foundation, refuse concentration	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3
65	P-22-3217	H	Foundations	Unevaluated	MM-CUL-1 MM-CUL-2 MM-CUL-3

Age: P = Precontact, H = Historic-era, M = Multicomponent
BRM = bedrock milling feature
CRHR = California Register of Historical Resources
N/A = Not Applicable
NRHP = National Register of Historic Places

HISTORIC BUILT ENVIRONMENT RESOURCES

There are no previously recorded built environment resources located within the Proposed Project Area.

Five potential historical resources were identified in the Proposed Project Area, those include the five recreation areas associated with the Merced River Hydroelectric Project: Lake McSwain, McClure Point, Barrett Cove, Horseshoe Bend, and Bagby (Table 3.4-2). The Lake McSwain and McClure Point recreation areas were both completed in 1969, Barrett Cove and Horseshoe Bend were both completed in 1970, and Bagby was completed ca. 1971; however, Bagby was separately owned until 1995 when Merced ID acquired the facility.

Table 3.4-2. Built Environment Resources within the Project Area

Count	Name	Year Built	NRHP/CRHR Eligibility	Impact Potential
1	Lake McSwain Recreation Area	1969	Not Eligible	None
2	McClure Point Recreation Area	1969	Not Eligible	None
3	Barrett Cove Recreation Area	1970	Not Eligible	None
4	Horseshoe Bend Recreation Area	1970	Not Eligible	None
5	Bagby Recreation Area	1971	Not Eligible	None

All five of the recreation areas were evaluated for CRHR and NRHP eligibility. All five were found to have association with recreation in California, as well as the Davis-Grunsky Act (except for Bagby), and thus have association with historical events under CRHR Criterion 1 and NRHP Criterion A. However, due to a lack of integrity as a result of extensive alterations over time, all five facilities have been recommended not eligible for listing under Criterion 1/A.

None of the five recreation areas were found to have significance under Criterion 2/B for association with significant persons. Under Criterion 3/C for significant architecture, engineering, or design, all five recreation areas were determined to lack sufficient integrity for listing in the CRHR and NRHP. Lastly, none of the five facilities appear to have information potential under Criterion 4/D. Thus, all five recreation areas are recommended not eligible for listing in the CRHR and NRHP. See Appendix E for the California Department of Parks and Recreation (DPR) forms for those five recreation areas. The DPR forms provide detailed architectural descriptions, historic context, assessments of integrity, and CRHR/NRHP eligibility determinations.

Impacts Associated with the Proposed Project

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.

CONSTRUCTION IMPACTS

The Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 because no cultural resources located in or near the Project area that qualify as CEQA historical resources would be affected by the Proposed Project. There would be **No Impact**, and no mitigation measures are required.

OPERATION IMPACTS

Operation of the Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 because no cultural resources located in or near the Project area that qualify as CEQA historical resources would be affected by operation of the Proposed Project. There would be **No Impact**, and no mitigation measures are required.

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

CONSTRUCTION IMPACTS

The Proposed Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. Twenty (20) unevaluated and CRHR eligible

archaeological resources have been identified within, and in proximity to, a ground disturbing element of the Proposed Project. Previously unrecorded archaeological resources as well as unknown elements of known sites may be inadvertently exposed during construction. Construction-related disturbances would be a potentially significant impact. Further analysis and site-specific protection and avoidance measures required by **MM-CUL-1, Archaeologically Sensitive Areas – Pre-Construction Measures** and **MM-CUL-2, Archaeological Resources and Tribal Cultural Resources – Discovery During Construction** would reduce impacts to significant archaeological resources to Less Than Significant if projects are initiated prior to relicensing.

As part of the relicensing effort, Merced ID developed a Historic Properties Management Plan (HPMP) (Merced Irrigation District 2015) to guide the management of precontact and historic-period properties that are listed in, eligible for listing in, or that are unevaluated for listing in the NRHP, during the term of the proposed new license. The HPMP provides the procedures required to comply with federal and state laws and regulations and to conduct consultation with tribes, agencies, and SHPO for the continued management of historic properties under the proposed new license. These measures include avoidance, protection, monitoring, and mitigation measures. Properties that have not been evaluated for listing on the NRHP or CRHR are to be managed as if they are eligible in the same manner as listed or eligible properties that have been formally evaluated. The HPMP was developed in consultation with Native American tribes, BLM, and SHPO. As such, **MM-CUL-1** and **MM-CUL-2** are no longer necessary, as the same protective measures will be required under new license. With implementation of these mitigation measures, potential impacts would be **Less Than Significant with Mitigation Incorporated**.

OPERATION IMPACTS

Operation of the Proposed Project would not cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 because no significant archaeological resource would be located within the areas of operation following construction. There would be **No Impact**, and no mitigation measures are required.

Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.

CONSTRUCTION IMPACTS

Based on a review of site distribution and environmental context, there are no previously recorded human remains in any of the Proposed Project sites and the Project sites have a low-to-moderate potential to uncover previously undiscovered human remains. While unlikely, the inadvertent discovery of human remains would be a potentially significant impact. However, if initiation of a project occurs prior to accepting a new license, implementation of **MM CUL-3, Human Remains – Discovery During Construction**, would reduce impacts to human remains by requiring that work halt in the vicinity of a find and by coordinating with the County Coroner, the Native American Heritage Commission (if necessary), and the landowner. Post-relicensing, the measures provided in Section 4.3.11 (*Treatment of Human Remains*) of the HPMP to address the discovery and protection of human remains, in accordance with applicable state and federal laws, will be employed if human remains are encountered, and as such, **MM-CUL-3** would no longer be required. With implementation of this mitigation measure, the impact would be **Less Than Significant with Mitigation Incorporated**.

OPERATION IMPACTS

Operation of the Proposed Project would not disturb any human remains. There would be **No Impact**, and no mitigation measures are required.

3.4.4 Mitigation Measures

Following is a description of the mitigation being proposed as part of the Proposed Project:

- **MM-CUL-1: Archaeologically Sensitive Areas – Pre-Construction Measures**
    - **Pre-construction Measure MM-CUL-1A: Intensive Pre-Construction Study.** Merced ID shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by Merced ID prior to soil-disturbing activities occurring on the Project site. The purpose of the site-specific, intensive archaeological resource study is to build upon the data collected during the relicensing studies and confirm the boundaries of previously identified resources vis-à-vis the Proposed Project ground-disturbing activity and to make further assessments, as necessary, regarding the presence of archaeological resources on the Project site. At a minimum, the study shall include:

        d. Pedestrian survey, site documentation, and subsurface presence/absence studies, where necessary, of the Project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.

        e. A summary report disseminating the results of this research.

        f. Recommendations for any additional measures, including avoidance measures if feasible, that could be necessary to mitigate any adverse impacts to previously recorded and/or inadvertently discovered cultural resources.

        If the results of the study indicate presence of precontact or historic-period archaeological resources on the Project site, or a resource is discovered, Merced ID shall hire a qualified archaeologist to monitor any ground disturbing activities on the Project site during construction and prepare a worker information sheet pursuant to Measure B below that details what could potentially be found at the Project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the worker training and information sheet, required per Measure C below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.

    - **Pre-Construction Measure MM-CUL-1B: Implementation of Avoidance Measures During Construction.** Based on the results of the archaeological resources analysis noted above under **MM-CUL-1A**, any archaeological resource not previously determined ineligible for CRHR and/or NRHP listing and within 50 feet of ground disturbing activity will be protected by site-specific measures. These measures may include re-routing access routes and staging areas, avoiding vegetation removal, installing exclusion or protective fencing, periodic monitoring,

and post-construction damage assessments. If, during construction, it is determined that the site cannot be avoided, the resource will be treated as an inadvertent discovery during construction and **MM-CUL-2** will be implemented.

- **Pre-Construction Measure MM-CUL-1C: Construction Worker Training and Information Resources.** Merced ID shall prepare a construction worker training and information sheet developed by a qualified archaeologist for review and approval prior to soil-disturbing activities occurring on the Project site. The worker training and information sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the Project site. Training by the qualified archaeologist shall be provided to the Project's prime contractor, any Project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil-disturbing activities within the Project site.

  The training and information sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop within 50 feet of the discovery and Merced ID contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains; clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the worker training and information sheet is circulated to all field personnel, including machine operators, field crew, and supervisory personnel. The worker and information sheet shall also be posted in a visible location at the Project site.

- **MM-CUL-2: Archaeological Resources and Tribal Cultural Resources – Discovery During Construction**

  During construction, pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic-era or precontact subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and Merced ID will consult with a qualified archaeologist, as applicable, to assess the significance of the find. Resources inadvertently discovered during construction are defined as either a newly discovered archaeological, built environment, or Tribal resource or as an unidentified or unknown component of a previously recorded archaeological, built environment, or Tribal resource.

  If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by Merced ID must be followed unless avoidance is determined unnecessary or infeasible by Merced ID. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the Project site while measures for the cultural resources are implemented.

In the event of data recovery of archaeological resources, Merced ID's consultant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the Proposed Project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. Merced ID shall implement the ARDTP at their expense.

Archaeological monitoring and/or data recovery programs required by this measure could suspend Project operations in the vicinity of the discovery for up to 4 weeks. At the direction of Merced ID, the suspension of construction can extend beyond 4 weeks only if such suspension is the only feasible means to reduce potential effects on a significant archaeological resource, as defined in CEQA Guidelines Section 15064(a) and 15064.5(c) to less than significant with mitigation.

- **MM-CUL-3: Human Remains – Discovery During Construction**

  Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the Project site during construction activities, all work shall immediately halt and the Project sponsor shall notify Merced ID and the appropriate County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, Merced ID shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of Merced ID.

3.4.5 Summary of Impacts

The mitigation measures included in this table are further described in the *Mitigation Measures* section and is in addition to those commitments already made by Merced ID. These measures would be in effect with or without relicensure.

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	No Impact	N/A	No Impact
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	Significant Impact	MM-CUL-1; MM-CUL-2	Less than Significant with Mitigation Incorporated
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.	Significant Impact	MM-CUL-3	Less than Significant with Mitigation Incorporated

3.4.6 References

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3.5 Geology and Soils

This section describes the regulatory and environmental setting related to geology and soils in the Proposed Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the Proposed Project footprint.

3.5.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential geology and soils impacts and identifying mitigation, as necessary. The geology and soils standards within the Study Area are regulated by the local policies and regulations of Mariposa County (County) as well as state and federal policies.

Federal

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act was passed on March 30, 2009. The Paleontological Resources Preservation Act is intended to preserve, manage, and protect paleontological resources on Federal lands administered by the Bureau of Land Management, the Bureau of Reclamation, the National Parks Service, and the USFWS. It generally forbids the collection or taking of paleontological resources, with the exception of casual collecting of a reasonable amount of common invertebrate and plant paleontological resources for non-commercial personal use. A permit may be granted to allow excavation and collection of such resources by the Secretary of the Interior or the Secretary of Agriculture, depending on which agency manages the site where the resource is located.

State

California Building Code and California Health and Safety Code

California provides minimum standards for building design through the California Building Code (CBC, California Code of Regulations [CCR], Title 24). The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC identifies seismic factors that must be considered in structural design, as well as regulates the excavation of foundations and retaining walls, construction on unstable soils such as expansive soils and areas subject to liquefaction, and regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Sections 2621 to 2630) was enacted in 1972 to reduce the hazard of surface faulting to structures designed for human occupancy. The Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and issue appropriate maps, which are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the permitting agency must require a geologic investigation to demonstrate that buildings intended for human habitation would not be constructed on active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690 to 2699.6) directs the DOC to identify and map areas prone to earthquake liquefaction hazards, earthquake-induced landslides, and amplified ground shaking. The act requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps). These maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling construction and development.

General Permit for Construction Activities

Under the National Pollutant Discharge Elimination System (NPDES), the State of California adopted the Construction General Permit (CGP), Order No. 2012-0006-DWQ, amending Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ, effective July 17, 2012. The CGP regulates construction site stormwater management. Projects that disturb one or more acres of soil, or projects that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the CGP for discharges of stormwater associated with construction activity.

Permit applicants are required to submit a Notice of Intent to the State Water Resources Control Board (SWRCB) and to prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP identifies Best Management Practices (BMPs) that will be implemented to reduce construction effects on receiving water quality based on pollutants. The BMPs identified are directed at implementing both sediment and erosion control measures and other 'good housekeeping' measures to control chemical contaminants.

Paleontological Resources

CEQA includes in its definition of historical resources "…any object [or] site …that has yielded or may be likely to yield information important in prehistory…" (14 CCR Section 15064.5[a][3]), which is typically interpreted as including fossils and other paleontological resources. More specifically, destruction of a "…unique paleontological resource or site or unique geologic feature…" constitutes a significant impact under CEQA, pursuant to CEQA Guidelines Appendix G. Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring, data recovery excavation, and/or avoidance.

Public Resources Code Section 5097.5

PRC Section 5097.5 states that no person will knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violations of this statute are misdemeanors punishable by up to a fine of ten thousand dollars and/or up to a year in jail. Those convicted will also be ordered to pay restitution at fair commercial value for the resource, including associated costs (i.e., potential examination, analysis, stabilization, reconstruction, research, and protective devices for the protection or restoration of the resource).

Society of Vertebrate Paleontology

The Society of Vertebrate Paleontology has guidance for assessing and mitigating paleontological resources that could potentially be impacted from land development. This guidance is included in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (Society of Vertebrate Paleontology 2010). As part of the assessment process for paleontological resources, the Society of Vertebrate Paleontology's guidance groups rock units into a high, undetermined, low, or no potential category for containing significant paleontological resources. These categories then determine the level of mitigation required, or further assessment prior to construction, for adequate protection or salvage of paleontological resources within a project area.

Local

Mariposa County Grading Ordinance

The Mariposa County Code requires a grading permit from the Chief Building Inspector prior to the initiation of any grading, excavation, or dredging activities that:

- Disturbs more than 5,000 square feet in surface area or more than 800 cubic yards total cut area;
- Disturbs more than 2,500 square feet in surface area or more than 800 cubic yards total cut area in a Flood Hazard or Erosion Hazard area;
- Is more than two feet deep; or
- Creates a cut slope more than five feet high and steeper than two horizontal to one vertical.

A grading permit is also required prior to the initiation of any fill activities that:

- Exceeds fifty cubic yards on any one lot;
- Exceeds twenty-five cubic yards in a Flood Hazard or Erosion Hazard area;
- Has unsupported height more than five feet;
- Is more than one foot deep and is placed on natural terrain with a slope greater than two horizontal to one vertical;
- Is more than three feet deep and is intended to support structures; or
- Obstructs a natural or man-made drainage course which carries a significant amount of storm runoff to the extent that increased erosion and siltation will occur.

Exceptions exist for several types of activities (Mariposa County 1979).

Mariposa County Wide General Plan

The Mariposa County Wide General Plan sets forth goals, policies, and implementation measures for soils and erosion. The following goals and policies are applicable to the Proposed Project (Mariposa County 2006).

- Goal 11-5: Avoid erosion and loss of soils due to development activities.
- Policy 11-5a: Minimize impacts of grading activities.

- Goal 16-8: Protect life and property endangered by seismic activity.
- Policy 16-8a: Develop and enforce standards to reduce risk of injury or property damage by seismic activity.
- Policy 16-8b: Avoid seismic dangers for public facility construction.
- Goal 16-9: Engineer and locate development in areas not endangered by secondary seismic effect to protect life and property.
- Policy 16-9a: Develop and enforce standards to reduce risk of injury or property damage by secondary effects of seismic activity.

Mariposa County Local Hazard Mitigation Plan

To meet requirements set by the Disaster Mitigation Act of 2000, the Mariposa County Office of Emergency Services prepared a Local Hazard Mitigation Plan (LHMP) to assess risks from natural hazards and to develop a mitigation action plan to reduce those risks within the county. The LHMP was most recently updated in 2020. The LHMP describes the planning area, including population, development trends, and critical facilities. It identifies and assesses risks within Mariposa County for climate change, droughts, earthquakes, flooding, landslides, fires caused by downed electrical lines and associated public safety power shutoffs, wildfires, and winter storms. The Mariposa County LHMP addresses the county's authorities, policies, programs, and resources available for hazard mitigation and discusses the mitigation strategy. This strategy is made up of three main parts, mitigation goals, potential mitigation actions, and a prioritized mitigation plan. The LHMP also includes administrative records that demonstrate the development, evaluation, implementation, and adoption of the plan (Mariposa County 2020). The LHMP includes a discussion of earthquakes and landslides that is relevant to geological resources within the study area.

3.5.2 Environmental Setting

Regional Geology

In the Mesozoic Era (65 to 225 million years ago), the Pacific tectonic plate began sliding under the North American plate. This subsidence resulted in the deposition of thick sequences of pillow basalts, chert and slate. Deep within the earth, extreme heat and pressure caused the Pacific plate to melt into molten rock, or magma. The magma rose upward within the Earth's crust and crystallized below the surface to form granitic rock along a linear belt that was to become the future Sierra Nevada. Some of the magma broke through to the surface, creating a string of volcanoes. Because of the high elevation of the Sierra Nevada, however, the volcanic and other rocks covering the granite were subject to rapid erosion and by Late Cretaceous time, about 70 million years ago, the granitic rocks became exposed at the Earth's surface (Mariposa County 2006b).

The Proposed Project area is situated in and surrounded by Mesozoic metavolcanic rocks, Jurassic marine sedimentary and metasedimentary rocks, and Mesozoic plutonic rocks (DOC 2015). The Mesozoic metavolcanic rocks include undivided Mesozoic volcanic and metavolcanic rocks including andesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks. Some of these rocks are strongly metamorphosed. These rocks include volcanic rocks of the Franciscan Complex including basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks. The Jurassic marine sedimentary and metasedimentary rocks include shale, sandstone, minor conglomerate, chert, slate, limestone and minor pyroclastic rocks. The Mesozoic plutonic rocks

include ultramafic rocks (mostly serpentine) and minor peridotite, gabbro, diabase, granite, quartz monzonite, granodiorite, and quartz rocks (DOC 2015).

Fault Rupture

The Proposed Project is not located in a fault zone (CGS 2023). Two pre-Quaternary faults pass through Lake McClure that are part of the Foothills Fault System (DOC 2015). The probability of an earthquake occurrence on the Foothills Fault System is rated as low – the fault zone is classified as a "C" zone under the Universal Building Code (UBC). From the two known historic earthquakes that have occurred in Mariposa County, indications are that the area could experience rare earthquakes up to magnitude 6.5 on the Richter scale in the future (Mariposa County 2006a).

Seismicity and Ground Shaking

The probability of an earthquake occurrence on the Foothills Fault System is rated as low – the fault zone is classified as a "C" zone under the Universal Building Code (UBC). From the two known historic earthquakes that have occurred in Mariposa County, indications are that the area could experience rare earthquakes up to magnitude 6.5 on the Richter scale in the future (Mariposa County 2006a). More recent earthquakes in the County have been less powerful. In January 2023, an earthquake of magnitude 3.5 shook the Mariposa area, with its epicenter approximately 12 miles south-southwest of the community.

Soils

A range of silt, clay, and sandy soils are present in the Proposed Project area (NRCS 2019). Most soils are part of the Auburn-Daulton association. This association has well-drained and somewhat excessively drained, gently sloping to very steep loams and stony loams formed in material weathered from schist and slate. The area near Merced Falls has soils that are part of the Loamy alluvial land-Clayey alluvial land association. The association consists of well-drained to somewhat poorly drained, gently sloping to strongly sloping sandy loams to clays formed in alluvium from a variety of materials (SCS 1974).

In the steeper areas to the north and east of Lake McClure, soils of the Trabuco-San Andreas-Coarsegold Association and the Blasingame-Las Posas Association have been identified. These soil associations are found on gently sloping to steep slopes throughout the County (Mariposa County 2006). While the majority of the soils in Mariposa County have low to moderate shrink-swell potential, both associations contain clay loams associated with high shrink-swell potential (Mariposa County 2006b). "Shrink-swell" or "expansive" soils are soils that expand with moisture and contract when dry. These soils, which generally have a high clay content, are a concern in the construction of buildings and the installation of roads and pipelines.

Subsidence and Liquefaction

The Proposed Project is not located in a liquefaction zone (CGS 2023). Liquefaction is the sudden temporary loss of soil cohesiveness and can occur in fine-grained, water-saturated valley sediments having high water tables. Liquefiable soils occur both in relatively small lenses as well as in more extensive areas (Mariposa County 2006a).

Landslide, Slope Failure and Lateral Spreading

The Proposed Project is not located in a landslides zone (CGS 2023). Areas of steep slopes could exist in the Proposed Project area. Landslides and rockfalls on steep, unstable slopes can be initiated by earthquakes, heavy rainfall, new excavation in areas of active or inactive sliding, in isolated pockets of steep slopes, or in otherwise instable slope areas. Human-related landslide activity generally involves disturbance or excavation of the toe or overloading the head of a slope or slide during foundation preparation, road construction, or utility trenching (Mariposa County 2006a).

3.5.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on geology and soils. The thresholds used to evaluate potential geology and soils impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and listed below. Impacts on geology and soils are considered significant if the Proposed Project would result in any of the following:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?
- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking?
- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction?
- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving landslides?
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
- Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Assessment Assumptions and Methodology

Approach to Analysis

The adverse effects on geology, soils, and paleontological resources are evaluated in the context of criteria listed in the section *Thresholds of Significance*.

Permanent impacts would include, among others, loss of habitat due to the construction of new recreation facilities, and increased potential for erosion due to increased foot traffic at improved recreation facilities. Temporary impacts would include, among others, ground disturbance for short-term landings or laydown areas and construction access, as well as the possible unearthing or disturbance of a unique paleontological resource during construction. Impacts are generally considered temporary when the habitat is restored to preconstruction conditions within one year. For this analysis, impacts were identified qualitatively based on the Proposed Project's potential to result in geologic, seismic, and soil-related hazards, as well as potential impacts to paleontological resources.

GEOLOGY AND SOILS

The methods used for analyzing impacts on geology and soils included review of information from published maps as well as county and state publications and reports pertaining to geology and soils in the study area. The primary data sources for impact analysis include:

- Maps from the Department of Conservation
    - California Geological Survey Earthquake Zones of Required Investigation (CGS 2023)
    - Department of Conservation, Geological Map of California (DOC 2015)
- Mariposa County General Plan (Mariposa County 2006a, 2006b, 2006c)
- Mariposa County Local Hazard Management Plan (Mariposa County 2020)

PALEONTOLOGICAL RESOURCES

Most of Mariposa County is undeveloped and may have a high sensitivity for paleontological resources. No studies on the County's paleontological resources are available and there may be potential to unearth important paleontological resources during construction activities (Mariposa County 2006a).

Impacts Associated with the Proposed Project

Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project is not located in a fault zone and construction is not anticipated to increase the risk of any potential earthquake fault rupturing. Therefore, the Proposed Project would have **No Impact** on potential substantial adverse effects involving the rupture of a known earthquake fault during construction or operations.

Impact GEO-2: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking?

CONSTRUCTION AND OPERATION IMPACTS

As discussed in Seismicity and Ground Shaking, historical earthquakes establish the potential for rare earthquakes up to 6.5 on the Richter scale. The fault under lake McClure was last active more than 1.6 million years ago and has no recent history of activity. Construction activities under the Proposed Project would not exceed excavation depths of about 10 feet and operation of the Proposed Project would comply with the CBC regulations and protections relating to earthquakes and seismic safety. Therefore, the Proposed Project would have **No Impact** during construction or operations.

Impact GEO-3: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project is not located in a liquefaction zone. No soil in the Proposed Project area is prone to liquefaction and Proposed Project activities are not expected to alter that. Therefore, the Proposed Project would have **No Impact** during construction or operations.

Impact GEO-4: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving landslides?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project is not located in a landslide zone. The Mariposa County LHMP recognizes the possibility of landslides in the county; however, these are located in the mountainous eastern half of Mariposa County, closer to Yosemite Valley. Since the Proposed Project is not in an area prone to landslides and Project excavation would not be significant enough to change that there would be **No Impact** during construction or operations.

Impact GEO-5: Result in substantial soil erosion or the loss of topsoil?

CONSTRUCTION AND OPERATION IMPACTS

Topsoil disturbance and erosion caused by construction of the Proposed Project would be minor; however, Mariposa County has many areas with slopes of 15 percent or greater, some exceeding 50 percent as shown in Figure 8.5 of Volume 3 of the Mariposa County General Plan. The County is concerned about erosion being accelerated by human activities, including construction and recreation. Since the Proposed Project area contains significant water features and significant slopes, erosion may be caused by construction and/or operation of the Proposed Project.

Construction activities will conform to the federal, state, and local regulations related to soils described in the *Regulatory Setting* section. As part of the Proposed Project, Merced ID will obtain coverage under a Construction General Permit (CGP) from the State Water Resources Control Board (SWRCB) for activities that disturb one or more acres of soil or activities that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Merced ID will be required to prepare a SWPPP to comply with the SWRCB's CGP. The SWPPP will identify BMPs to be implemented on-site to minimize soil erosion during construction, including sediment and erosion control measures and other measures to control chemical

contaminants. The SWPPP will also contain a visual monitoring program to be implemented if there is a failure of BMPs, and a sediment monitoring plan. In addition, the Proposed Project will be required to comply with the grading permit requirements of Mariposa County. The grading permit process would ensure that erosion control measures are incorporated into the Project plans and implemented during construction.

Some of the Proposed Project-related recreation projects may occur before license issuance for the Merced River and Merced Falls FERC Relicensing Projects, while others would be expected to occur after FERC issues a new license. For those Proposed Project-related activities that would happen after license issuance, the required license measures and plans that protect soils would be in effect, and the analysis from FERC's 2015 FEIS would be relevant. For those projects that may be implemented prior to acceptance of new FERC licenses, if necessary, Mitigation Measures are included in the *Mitigation* section. Therefore, potential impacts are analyzed under both scenarios- with and without a new license.

The 2015 FEIS analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures, assuming acceptance of a new license. BLM condition G&S-1 from the FEIS requires the development and implementation of a Recreation Facilities Construction Erosion Control and Reforestation Plan, assuming acceptance of the new licenses. The FEIS determined that the Proposed Project was not likely to adversely affect topsoil with the development and implementation of Proposed Measure G&S-1 *Development and Implementation of Recreation Facilities Construction Erosion Control and Restoration Plans*.

Further, as previously discussed in 3.3, Biological Resources, in consultation with the USFWS, Merced ID agreed to implement multiple protective measures for ESA-listed species before and during the new license, including some that would indirectly reduce the potential for soil erosion or loss of vegetation. In order to minimize potential adverse effects on ESA-listed species due to Proposed Project-related construction, implementation of all MMs (**MM-BIO-1** through **MM-BIO-16**) are required for all project activities. Specifically, acquisition of any and all permits for each construction project (**MM-BIO-1**), reducing area of disturbance (**MM-BIO-2**), vehicular limitations (**MM-BIO-4**), workers trainings (**MM-BIO-6**), minimization of vegetation removal (**M-BIO-8**), no net loss of sensitive communities (**MM-BIO-10**), and avoidance of aquatic habitat (**MM-BIO-14**) are all MMs that will also benefit geology and soils.

Finally, with implementation of **MM-HYD-1 Stormwater Management and Treatment Plan**, described in Section 3.8, Hydrology, *Mitigation Measures* section, would also be required during construction and operations and will reduce erosion and support topsoil management.

With implementation the MMs listed above and **MM- HYD-1** (fully described in Section 3.8, Hydrology, *Mitigation* section), erosion and loss of topsoil would be reduced to a **Less Than Significant** impact.

If new FERC licenses are accepted, **MM-HYD-1** would continue to apply to those construction activities not separately covered by a mandatory measure or management plan that would be triggered by the relicensing conditions.

Impact GEO-6: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project is not in an area suitable for lateral spreading, subsidence, liquefaction or collapse. The Mariposa County LHMP references the possibility of landslides, but these are all located upstream of Lake McClure and a landslide upstream would not alter the stability of soil or associated geology in the area of the Proposed Project. The Proposed Project would result in **No Impact** during construction and operations.

Impact GEO-7: Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?

CONSTRUCTION AND OPERATION IMPACTS

As addressed in Expansive Soils, clay-loam soils possessing the high shrink-swell potential associated with expansive soils in Mariposa County are the Trabuco-San Andreas-Coarsegold association and the Blasingame-Las Posas association. As shown in Figure 8-4 of Volume III of the Mariposa County General Plan, neither of these soils is represented in the Proposed Project area. Therefore, the Proposed Project would not be located on expansive soil and would have **No Impact** during construction or operations.

Impact GEO-8: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

CONSTRUCTION AND OPERATIONS IMPACTS

There are few sites suitable for septic systems within Mariposa County and the only septic system within the Proposed Project area is located within the Bagby Recreation Area. This septic system has already been permitted. Further, as no septic systems would be installed as part of the Proposed Project, and the Proposed Project would not require or enable additional construction by parties not answerable to Merced ID, there is no possibility of additional septic systems. Therefore, construction and operations of the Proposed Project would have **No Impact** during construction or operations.

Impact GEO-9: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

CONSTRUCTION IMPACTS

No paleontological resources are known in the area. Further, excavations associated with the Proposed Project are unlikely to reach a sufficient depth to unearth paleontological resources, and most excavation will occur within previously disturbed footprints. However, it is possible that paleontological resources may be encountered in new areas of disturbance.

In this event, **MM-GEO-1 Inadvertent Discovery Protocol** would be implemented.

With implementation of **MM-GEO-1**, impacts to paleontological resources would be reduced to a **Less Than Significant with Mitigation Incorporated** impact during construction.

OPERATION IMPACTS

Operation and maintenance activities would not involve new ground disturbing activities and would only occur within previously disturbed areas, with maximum depths of 10 to 25 feet. Therefore, the Proposed Project would have **No Impact** on paleontological resources during operations.

3.5.4 Mitigation Measures

Following is a description of the mitigation being proposed as part of the Proposed Project:

- **MM-GEO-1 Inadvertent Discovery Protocol.** If paleontological resources are discovered during earth-moving activities, the construction crew will immediately cease work within a 50-foot radius of the find and notify Merced ID's Project manager. Construction work will be halted until the collection of fossil specimens has been completed. The collection and treatment actions will occur after recovery of specimens and once scientific value can be confirmed and documented. If fossils are found, treatment actions will include sampling for microfossils, conducting paleomagnetic analysis, identifying and preparing fossils, arranging for a repository, and preparing a final report. These actions will comply with guidance from the Society for Vertebrate Paleontology.

3.5.5 Summary of Impacts

As noted previously, those measures already committed to by Merced ID as part of the are part of the Proposed Project and are not included below since they are already commitments made by Merced ID in their Measures proposed and discussed in the 2015 FEIS. The mitigation measure included in this table is further described in the *Mitigation Measures* section and is in addition to those commitments already made by Merced ID.

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault	No Impact	N/A	No Impact
Impact GEO-2: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking	No Impact	N/A	No Impact
Impact GEO-3: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction	No Impact	N/A	No Impact

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact GEO-4: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides	No Impact	N/A	No Impact
Impact GEO-5: Result in substantial soil erosion or the loss of topsoil	Significant Impact	MM-HYD-1	Less than Significant After Mitigation
Impact GEO-6: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse	No Impact	N/A	No Impact
Impact GEO-7: Be located on expansive soil, as defined in table 18-1B of the Uniform Building code (1994), creating substantial direct or indirect risk to life or property	No Impact	N/A	No Impact
Impact GEO-8: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater	No Impact	N/A	No Impact
Impact GEO-9: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Significant Impact	MM-GEO-1	Less than Significant After Mitigation

3.5.6 References

CGS. 2023. *Earthquake Zones of Required Investigation.* https://maps.conservation.ca.gov/cgs/eqzapp/app/ accessed June 9, 2023.

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Mariposa County. 1979. *Mariposa County Code, Title 15.* May 25, 1979. https://www.mariposacounty.org/DocumentCenter/View/45930/Ordinance-0513?bidId= accessed 12/10/2024.

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Mariposa County. 2006b. *Mariposa County General Plan, Vol 3, Technical Background Report.* https://www.mariposacounty.org/DocumentCenter/View/3104/Volume-III. accessed 6/3/24 and 12/10/24.

Mariposa County. 2020. *Mariposa County Local Hazard Mitigation Plan.* Adopted May 26, 2020. 2020 Mariposa County Local Hazard Mitigation Plan accessed 12/10/2024.

NRCS. 2019. Web Soil Survey https://websoilsurvey.nrcs.usda.gov/app/ Accessed 6/9/2023.

3.6 Greenhouse Gas Emissions

This section describes the regulatory and environmental setting related to greenhouse gas (GHG) emissions in the Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. GHG emissions effects are not localized to areas where they are produced. Climate change is a global phenomenon resulting from the combined effects of GHG emissions produced worldwide. While the true study area affected by GHG emissions is global, for purposes of this section, the study area is considered as the State of California.

3.6.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential GHG emissions impacts and identifying mitigation. The GHG emissions standards within the Study Area are regulated by the statewide policies and regulations as well as local policies and regulations of the MCAPCD and County.

Federal

United States Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, the U.S. Supreme Court found that GHGs are air pollutants covered by the FCAA. The Supreme Court held that USEPA must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. To regulate GHGs from passenger vehicles, the USEPA issued an endangerment finding on December 7, 2009. The finding identifies emissions of six key GHGs — CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 — that threaten the public health and welfare of current and future generations (USEPA 2024a).

Mandatory Reporting of Greenhouse Gases Rule

On September 22, 2009, the USEPA issued a final rule for the mandatory reporting of GHG data and other relevant information from large sources in the United States (Code of Federal Regulations Title 40, Part 98). This comprehensive, nationwide emissions data is intended to provide a better understanding of the sources of GHGs and guide development of policies and programs to reduce emissions. The mandatory reporting rule applies to direct GHG emitting sources; suppliers of fossil fuel, industrial gas, and other products that would result in GHG emissions if released, combusted, or oxidized; and facilities that inject carbon dioxide underground for geologic sequestration or other reasons. In general, facilities that emit 25,000 metric tons (MT) of carbon dioxide equivalent (CO_2e) or more per year of GHGs are required to submit annual reports to the USEPA.

Corporate Average Fuel Economy

The Corporate Average Fuel Economy (CAFE) standards were first introduced by Congress in 1975 to help reduce the country's dependence on foreign oil. CAFE standards are regulated by Department of Transportation's National Highway Traffic and Safety Administration (NHTSA). NHTSA sets and enforces the CAFE standards, while the USEPA calculates average fuel economy levels for manufacturers, and also sets related GHG standards. The regulations have become more stringent over time. The regulations at first applied only to passenger cars in 1978, then included light duty trucks up to 6,000 pounds in 1980, and finally increased to all vehicles up to 8,500 pounds

the next year. Regulations varied during the 1980s for both cars and trucks before reaching a steady target for cars in 1990 through 2010, with trucks moderately increasing during the period from 20 to 21 miles per gallon (mpg) through 2005, then reaching 23.5 mpg by 2010.

On April 1, 2010, the USEPA and the NHTSA announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016. This phase required these vehicles to meet a fuel economy standard of 35.5 mpg. The second phase applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 through 2025. This phase required these vehicles to meet an estimated fuel economy standard of 54.5 mpg.

On September 15, 2011, the USEPA and NHTSA issued a final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses, model years 2014 through 2018 by up to 20 percent.

On October 25, 2016, the USEPA and NHTSA issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 through 2027 to achieve vehicle fuel savings as high as 25 percent, depending on the vehicle category.

On March 31, 2020, the USEPA and NHTSA, issued the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule. The SAFE Vehicles Rule set new CAFE targets and tailpipe carbon dioxide emissions standards for passenger cars and lights trucks that increase 1.5 percent in stringency each year from model years 2021 through 2026.

In August 2021, NHTSA released its Notice of Proposed Rulemaking offering new standards for the 2024–2026 model years. The new standards would increase fuel efficiency 8 percent annually for model years 2024-2026 and increase the estimated fleetwide average by 12 mpg for model year 2026, relative to model year 2021. President Biden issued Executive Order (EO) 14037 on August 5, 2021, which requires NHTSA to develop fuel economy standards for passenger cars and light duty trucks for model years 2027-2030. In addition, NHTSA will develop medium and heavy-duty fuel efficiency standards beginning as early as model year 2027. At the time of PEIR preparation, new CAFE standards have not been adopted.

State

Executive Order S-3-05

In June 2005, Governor Schwarzenegger issued EO S-3-05, which established the following GHG emissions reduction targets: 1) reduce GHG emissions to 2000 levels by 2010, 2) reduce GHG emissions to 1990 levels by 2020, and 3) reduce GHG emissions to 80 percent below 1990 levels by 2050.

Assembly Bill 32

In September 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. California met its 2020 reduction goal in 2018.

Executive Order B-30-15

On April 20, 2015, Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. California's emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels.

Senate Bill 32

Senate Bill (SB) 32 was signed into law on September 8, 2016. SB 32 expands upon AB 32 to reduce GHG emissions. SB 32 sets into law the mandated GHG emissions target of 40 percent below 1990 levels by 2030 written into EO B-30-15.

Climate Change Scoping Plan

In December 2008, the CARB adopted the *Climate Change Scoping Plan* (2008 Scoping Plan) to achieve the goals outlined in AB 32. The 2008 Scoping Plan, developed by CARB in coordination with the Climate Action Team, proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify the state's energy sources, save energy, create new jobs, and enhance public health. According to the 2008 Scoping Plan, California will implement strategies to achieve a reduction of approximately 118 million MT CO_2e, or approximately 22 percent from the State's projected 2020 emission level of 545 million MT CO_2e under a business-as-usual scenario. This is a reduction of 47 million MT CO_2e, or almost 10 percent, from 2008 emissions (CARB 2008). The CARB's original 2020 projection was 596 million MT CO_2e, but this revised 2020 projection considered the economic downturn that occurred in 2008.

The *First Update to the Climate Change Scoping Plan* (2014 Scoping Plan) was approved by the CARB in May 2014 and built upon the 2008 Scoping Plan with new strategies and recommendations. The 2014 Scoping Plan contained the main strategies California will implement to achieve a reduction of 80 million MT CO_2e emissions, or approximately 16 percent, from the state's projected 2020 emission level of 507 million MT CO_2e under the business-as-usual scenario defined in the 2014 Scoping Plan (CARB 2014). The 2014 Scoping Plan also included a breakdown of the amount of GHG reductions CARB recommended for each emissions sector of the state's GHG inventory. Several strategies to reduce GHG emissions were included: Low Carbon Fuel Standard, Pavley Rule, Advanced Clean Cars program, Renewable Portfolio Standard, and Sustainable Communities Strategy.

In 2016, the Legislature passed SB 32, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With the passage of SB 32, the Legislature passed companion legislation AB 197, which provided additional direction for developing the Scoping Plan. The CARB adopted *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in November 2017. The 2017 Scoping Plan represents a second update to the scoping plan to reflect the 2030 target as codified by SB 32. According to the 2017 Scoping Plan, the 2030 target of 260 million MT CO_2e requires the reduction of 129 million MT CO_2e, or approximately 33.2 percent, from the state's projected 2030 business-as-usual scenario emissions level of 389 million MT CO_2e (CARB 2017).

The *2022 Scoping for Achieving Carbon Neutrality* (2022 Scoping Plan) (CARB 2022) was adopted by CARB in November 2022. The 2022 Scoping Plan lays out a path for California to achieve targets

for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

Executive Order B-55-18

EO B-55-18, signed on September 10, 2018, established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The EO requires the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bill 1493

AB 1493 of 2002 (Pavley Bill) requires CARB to develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light duty truck and other vehicles determined by CARB to be vehicles whose primary use is non-commercial personal transportation in the state." In September 2004, pursuant to this directive, the CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. These regulations created the Pavley standards. In September 2009, the CARB adopted amendments to the Pavley standards to reduce GHG emissions from new motor vehicles through the 2016 model year. These regulations created the Pavley II standards.

Advanced Clean Cars Program

In January 2012, the CARB approved a new emissions control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero emission vehicles into a single packet of standards called Advanced Clean Cars. The Advanced Clean Cars Program includes the Zero Emission Vehicle Program, which is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles.

Senate Bill 375

SB 375, also known as the Sustainable Communities and Climate Protection Act, was adopted In September 2008. SB 375 supports the State's climate goals by helping reduce GHG emissions through coordinated transportation, housing, and land use planning. Under SB 375, CARB sets regional targets for GHG emissions reductions from passenger vehicle use. CARB set targets for 2020 and 2035 for each of the 18 metropolitan planning organizations in 2010, and updated them in 2018 (CARB 2018).

Local

Mariposa County Air Pollution Control District

The MCAPCD is the air quality regulating authority within Mariposa County. The MCAPCD has established thresholds of significance for GHG emissions, as presented in the County of Mariposa General Plan Environmental Impact Report (MCAPCD n.d.). According to the MCAPCD, a project

would have a significant impact with respect to GHG emissions if it were to emit greater than 500 tons of CO_2e per year (MCAPCD n.d.).

County of Mariposa General Plan

The *County of Mariposa General Plan* (Mariposa County 2006) includes the applicable goals and policies related to improving air quality that may also result in abating climate change (see Section 3.2, Air Quality). However, the *County of Mariposa General Plan* does not contain any goals, policies, or objectives that specifically address GHG emissions. The County has not yet adopted a climate action plan or any other plan to quantify existing GHG inventories or provide goals and measures to reduce GHG emissions within the County.

3.6.2 Environmental Setting

Climate Change

Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle or volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil, and gas (United Nations 2024).

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization and United Nations for assessing the science related to climate change. IPCC is an international body that provides scientific, technical, and socioeconomic assessment of climate change, its impacts and future risks, and options for adaptation and mitigation. The IPCC finds that GHG emissions from human activities are responsible for approximately 1.1 degrees Celsius of warming since 1900 (IPCC 2021). The IPCC predicts that global temperature over the next 20 years will reach or exceed 1.5 degrees Celsius of warming (IPCC 2021).

Climate change is already having visible effects on the world. For example, many places have experienced changes in rainfall, resulting in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. The planet's oceans and glaciers have also experienced changes – oceans are warming and becoming more acidic, ice caps are melting, and sea level is rising. As these and other changes become more pronounced in the coming decades, they will likely present challenges to our society and our environment (USEPA 2024b).

Greenhouse Gas Emissions

GHGs absorb infrared radiation, thereby trapping heat in the atmosphere and making the planet warmer. The most important GHGs directly emitted by humans include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and several fluorine-containing halogenated substances such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). Although CO_2, CH_4, and N_2O occur naturally in the atmosphere, atmospheric concentration of these GHGs have increased globally due to human activities (USEPA 2024c). The important GHGs are described below (USEPA 2024d).

Carbon Dioxide (CO_2). CO_2 enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., manufacture of cement). CO_2 is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4). CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide (N_2O). N_2O is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.

Fluorinated gases. Fluorinated gases are synthetic, powerful GHGs that are emitted from a variety of household, commercial, and industrial applications and processes. Fluorinated gases include HFCs, PFCs, SF_6, and NF_3. Fluorinated gases are typically emitted in smaller quantities than other greenhouse gases, but they are potent GHGs.

GHGs have varying potential to trap heat in the atmosphere, known as global warming potential. CO_2 is considered as the reference and has a global warming potential of one (USEPA 2024e). CH_4 has a global warming potential of 27-30 times that of CO_2, and N_2O has a global warming potential of 273 times of CO_2 (USEPA 2024e). The family of fluorinated gases have substantially greater global warming potential, ranging from thousands to tens of thousands (USEPA 2024e).

GHG Emissions Inventories

An emissions inventory that identifies and quantifies the primary human generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, federal, state, and regional/local GHG emissions inventories.

Global GHG Emissions

Total global GHG emissions in 2022 were estimated at 37.4 billion tons (Gt) CO_2e (IEA 2024).

Federal GHG Emissions

In 2022, GHG emissions in the U.S. totaled 6,343 million MT CO_2e (USEPA 2024c). GHG emissions increased from 2020 to 2021 by 1 percent. This increase was primarily due to an increase in CO_2 emissions from fossil fuel combustion (USEPA 2024c). GHG emissions in 2022 were 17 percent below 2005 levels (USEPA 2024c). In 2022, total GHG emissions within U.S. by sector were: transportation (28 percent), electricity (25 percent), industrial (23 percent), commercial and residential (13 percent), and agriculture (10 percent) (USEPA 2024c).

California GHG Emissions

In 2022, total statewide GHG emissions were 371.1 million MT CO_2e (CARB 2024). GHG emissions in 2022 were 9.3 million MT CO_2e lower than 2021 levels (CARB 2024). Refer to *Regulatory Setting* for a discussion of AB 32. Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2016, statewide GHG emissions dropped below the 2020 GHG limit and have remained below the limit since that time (CARB 2024). In 2022, major GHG emissions within California by sector were: transportation (37.7 percent), industrial (19.6 percent), in-state electricity (16.1 percent), agriculture and forestry (8 percent) (CARB 2024).

3.6.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on GHG emissions. The thresholds used to evaluate potential GHG

emissions impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and listed below. Except as provided in Public Resources Code Section 21099, impacts on GHG emissions are considered significant if the Proposed Project would result in any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Assessment Assumptions and Methodology

Impacts on GHG emissions were identified qualitatively and quantitively based on the Proposed Project's potential to generate substantial GHG emissions.

The analysis of environmental effects focuses on foreseeable changes to GHG emissions in the context of effects listed in Thresholds of Significance, above. The analysis considers the individual projects and recreation areas, as appropriate, in the context of construction, operation, and maintenance.

Construction

Impacts on GHG emissions during construction of the Proposed Project were analyzed quantitatively. Construction of the Proposed Project would generate GHG emissions from the operation of construction equipment, hauling of materials, and commute of construction crews. Projects comprising the Proposed Project have been defined by Merced ID with sufficient detail to analyze physical changes in the environment, described in Section 2.3 as common projects or recreation area-specific projects. GHG emissions associated with construction of the common and recreation area-specific projects were estimated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1.29. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria air pollutant emissions associated with both construction and operation from a variety of land use projects. Construction emissions were estimated in CalEEMod using a combination of information presented in Chapter 2 and model defaults. Estimated construction periods in days, maximum numbers of construction workers at each project location, types of activities that would be anticipated to occur, and typical equipment used presented in Section 2.3.5 were used as inputs in CalEEMod. GHG emissions associated with construction of the projects assessed at a program level of detail, as described in Section 2.2.2, were analyzed qualitatively using assumptions and estimations. Refer to Appendix D, *Air Quality and Greenhouse Gas Emissions Modeling* for details regarding modeling inputs and assumptions. GHG impacts were determined by comparing the combined GHG emissions generated during construction of the Proposed Project against the appropriate thresholds. As noted above, the assessment uses the MCAPCD threshold of 500 tons of CO_2e per year during construction.

Operation

Impacts on GHG emissions during operation and maintenance were assessed qualitatively based on the information in Chapter 2.

Impacts Associated with the Proposed Project

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

CONSTRUCTION

The Proposed Project would generate GHG emissions during construction of the Proposed Project. GHG emissions generated during construction of the common and recreation area-specific projects were estimated using CalEEMod. The unmitigated construction GHG emissions are summarized in Table 3.6-1. The model results for each common project were combined based on the number of recreation areas each type of project occurs for (described in Table 2-1 in Chapter 2). Total GHG emissions from construction of the Proposed Project are presented in MT CO_2e. Refer to Appendix D, *Air Quality and Greenhouse Gas Emissions Modeling* for the CalEEMod assumptions and output.

Table 3.6-1. Construction GHG Emissions

Common Project	Number of Rec Areas common project occurs in	GHG Emissions MT CO_2e
Install or upgrade directional and educational signage	5	9
Minor upgrades to campground with no effects on undisturbed ground	5	7
Upgrades or expansions at campground that may affect undisturbed ground	5	20
Install new Park Model cabins	4	22
Install or upgrade small vault restroom facilities (max 6 vault toilets)	5	13
Install or upgrade restroom facilities (max 12 flush toilets and 2 showers)	5	33
Upgrade day use and picnic areas	5	17
Install or upgrade off-lake swim or fishing area	4	13
Install or upgrade on-lake swim area	4	8
Upgrade or expand boat ramps and takeouts	4	30
Rehabilitate marina facilities and boat docks	2	42
Add new houseboat mooring buoys at existing locations	3	7
Other in-lake projects	5	33
Add, rehabilitate and/or expand parking lots and roads	5	22
Install or upgrade hiking and/or biking trails	5	26
Install or rehabilitate existing sewer systems with wastewater treatment plant	5	46
Install water tank	5	46
Combined Emissions multiplied by number of rec areas, MT CO_2e	-	1,757

Source: Appendix D
Notes: GHG = greenhouse gas; MT = metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 3.6-1, the total GHG emissions associated with Proposed Project construction would be approximately 1,757 MT CO_2e. MCAPCD has adopted thresholds of significance of 500 tons of CO_2e per year during construction for construction-related GHG emissions. This modeling assumes all construction occurs within one year, which is not accurate; construction and therefore emissions will be spread over the span of multiple years. GHG emissions during construction of the Proposed Project would be temporary in nature and would represent a small portion of the Proposed Project's lifetime GHG emissions. Because, over the lifetime of the Proposed Project, the emissions are under the threshold set by MCAPCD, construction of the Proposed Project would not generate GHG emissions that have a significant impact on the environment. The Proposed Project would not generate GHG emissions, either directly or indirectly that have a significant impact on the environment and emissions generated during construction would be temporary. Therefore, the Proposed Project would result in a **Less Than Significant** impact**.**

OPERATIONS

Operation and maintenance activities would generate limited GHG emissions from the use of minimal amounts of equipment and vehicles. Given the limited and infrequent nature of operation and maintenance activities, GHG emissions from operation and maintenance would be substantially less than those generated during construction. Further, GHG emissions from operations and maintenance activities would be similar to existing operations and maintenance activities and would not significantly increase emissions over existing conditions. The Proposed Project would not generate GHG emissions, either directly or indirectly that have a significant impact on the environment. Temporary and occasional emissions would be generated during operations. Therefore, the Proposed Project would result in a **Less Than Significant** impact**.**

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

CONSTRUCTION

The County has not adopted a qualified GHG reduction strategy (i.e., a climate action plan). Current and applicable plans, policies, and regulations adopted to reduce GHG emissions include SB 32 and the 2022 Scoping Plan. As discussed under Impact GHG-1, GHG emissions generated during construction of the Proposed Project would be temporary and would represent a small portion of the Proposed Project's lifetime GHG emissions. The Proposed Project would not generate significant GHG emissions, and therefore, would not conflict with or otherwise interfere with the statewide GHG reduction targets identified in SB 32 and the 2022 Scoping Plan.

The Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas emissions. Temporary emissions would be generated during construction that would not conflict with any state or regional GHG emission reduction goals; therefore, the Proposed Project Alternative would result in a **Less Than Significant** impact.

OPERATIONS

As stated under Impact GHG-1, GHG emissions from operation and maintenance would be similar to existing operations and maintenance activities and would be substantially less than those generated during Proposed Project construction. The Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas emissions. Temporary emissions would be generated during operation that would not conflict with

any state or regional GHG emission reduction goals; therefore, the Proposed Project would result in a **Less Than Significant** impact.

3.6.4 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Less than Significant	N/A	Less than Significant
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG	Less than Significant	N/A	Less than Significant

3.6.5 References

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3.7 Hazards and Hazardous Materials

This section describes the regulatory and environmental setting related to hazards and hazardous materials in the Proposed Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the Proposed Project footprint.

3.7.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential hazards and hazardous materials impacts and identifying mitigation. The hazards and hazardous materials standards within the Study Area are regulated by the local policies and regulations of Mariposa County (County) as well as state and federal policies.

Federal

Hazardous Waste Management

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. This includes petroleum products (i.e., gasoline, oil, and diesel) stored on site for use by Merced ID, concessionaires, and visitors.

National Emission Standards for Hazardous Air Pollutants

The USEPA's National Emission Standards for Hazardous Air Pollutants regulations specify work practices for asbestos to be followed during demolition and renovation of all structures, installations, and buildings, excluding residential buildings that have four or fewer dwelling units. These include 40 CFR Part 61, Subpart M, section 145 (National Emission Standards for Asbestos, Standard for Demolition and Renovation). The Mariposa APCD has adopted several rules that enforce the limitations provided in the Code of Federal Regulations.

Universal Waste Management

40 CFR Part 273 governs the collection and management of widely generated waste, including batteries, pesticides, mercury-containing equipment, and bulbs. This regulation streamlines the hazardous waste management standards and ensures that such waste is diverted to the appropriate treatment or recycling facility.

U.S. Department of Transportation

Transportation of hazardous materials is regulated by the U.S. Department of Transportation's Office of Hazardous Materials Safety. The office formulates, issues, and revises hazardous materials regulations under the Federal Hazardous Materials Transportation Law.

State

California Hazardous Waste Control Law

The California Hazardous Waste Control Law is administered by the California Environmental Protection Agency to regulate hazardous wastes. The California Hazardous Waste Control Law lists

791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Lead-Based Paint

The California Department of Public Health enforces lead laws and regulations related to the prevention of lead poisoning in children, prevention of lead poisoning in occupational workers, accreditation and training for construction-related activities, lead exposure screening and reporting, disclosures, and limitations on the amount of lead found in products. Accredited lead specialists are required to find and abate lead hazards in a construction project and to perform lead-related construction work in an effective and safe manner. Specific regulations include:

- California Health & Safety Code Section 105250: Establishes a program to accredit lead-related construction training providers and certify individuals to conduct lead-related construction activities.
- California Civil Code Sections 1102 to 1102.16: Requires the disclosure of known lead-based paint hazards upon sale of a property.
- California Labor Code Sections 6716 to 6717: Provides for the establishment of standards that protect the health and safety of employees who engage in lead-related construction work, including construction, demolition, renovation, and repair.
- California Health & Safety Code Sections 105185 to 105197: Establishes an occupational lead poisoning prevention program to register and monitor laboratory reports of adult lead toxicity cases, monitor reported cases of occupational lead poisoning to ascertain lead poisoning sources, conduct investigations of take-home exposure cases, train employees and health professionals regarding occupational lead poisoning prevention, and recommended means for lead poisoning prevention.

California Health and Safety Code

In California, transportation of hazardous waste is regulated under Chapter 6.5 of the California Health and Safety Code. Under Section 21560, hazardous waste generators must complete a manifest for the waste before it is transported or offered for transportation. The handling and storage of hazardous materials is regulated by Chapter 6.95 of the California Health and Safety Code. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a Hazardous Materials Business Plan.

Government Code Section 65962.5 – Cortese List

The provisions in Government Code Section 65962.5, which became effective in 1992, are commonly referred to as the “Cortese List,” after the legislator who authored the legislation enacting these provisions. The list, or a site’s presence on the list, has bearing on the local permitting process as well as on compliance with CEQA. Section 65962.5(a) requires DTSC to compile and update as appropriate, but at least annually, and submit to the Secretary for Environmental Protection a list of hazardous waste facilities and properties. Other provisions of Government Code Section 65962.5 require specific lists to be prepared by the Department of Health Services, the SWRCB, and the local enforcement agencies for solid waste disposal facilities.

The Secretary for Environmental Protection shall consolidate the information submitted pursuant to this section and distribute it in a timely fashion to each city and county in which sites on the lists are located, and to any other person upon request. While Government Code Section 65962.5 refers to the preparation of a "list," many changes have occurred related to web-based information access since 1992, and this information is now largely available on the websites of the responsible organizations. Those requesting a copy of the "Cortese List" are referred directly to the appropriate information resources contained on the websites of the boards or departments that are referenced in the statute

Emergency Response/Evacuation Plans

The state of California passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. The California Emergency Services Act of 2021 requires SEMS to be implemented for responding agencies to qualify for any reimbursement of response related costs under the state's disaster assistance programs.

California Disaster and Civil Defense Master Mutual Aid Agreement

The California Disaster and Civil Defense Master Mutual Aid Agreement states that all resources and facilities of the state, including all political subdivisions, shall voluntarily aid and assist each other in the event of a disaster by the interchange of services, including rescue, relief, evacuation, rehabilitation, and reconstruction (California Office of Emergency Services 1950).

Local

Mariposa County Health and Human Services, Health Services Division: Environmental Health

Mariposa County Environmental Health was established to protect health, safety, and well-being of the public, and preserve the quality of the environment. Specialists from the Division inspect, oversee, and monitor regulated programs and facilities to ensure mandated compliance in air pollution, hazardous materials, hazardous waste, above/underground storage tanks, solid waste disposal, septic systems, water well systems, and food safety at various facilities, among other responsibilities.

Mariposa County Emergency Operations Plan (Mariposa County 2018)

The Mariposa County Emergency Operations Plan (EOP) addresses the planned response to an actual or threatened extraordinary incident, disaster, or emergency associated with natural, technological, and human caused hazards, or a national security emergency in or affecting the Mariposa County.

The EOP is overseen by the Mariposa County Office of Emergency Services (OES), which is housed under the Mariposa County Sheriff's Office. OES coordinates planning and preparedness, response, and recovery efforts for disasters occurring within the unincorporated area of the County.

Regional Water Quality Control Board

23 CCR charges the nine Regional Water Quality Control Boards (RWQCB) with responsibility for overseeing water quality control. The RWQCBs are responsible for protecting actual or potential beneficial uses of water, including municipal, industrial, and agricultural water supplies and recreation. Each RWQCB has authority to supervise hazardous waste cleanup at sites referred by

local agencies and in cases where water quality is affected or threatened. Either the DTSC or the RWQCB may be responsible for cleanup of sites of significant contamination by hazardous wastes. The two agencies often work together to ensure that their requirements are consistent and are implemented as intended. The Proposed Project site is under the jurisdiction of the Central Valley RWQCB.

3.7.2 Environmental Setting

This section describes the existing hazards and hazardous materials resources in the Proposed Project area, including a description of the Proposed Project's proximity to existing schools, hazardous materials database listings, airports in the Proposed Project area, emergency response plans and evacuation routes, and fire hazards.

Database Listings

Database searches were conducted on the Department of Toxic Substances Control (DTSC) EnviroStor database (EnviroStor 2023) and the State Water Resources Control Board (SWRCB) GeoTracker database (Geotracker 2023) to identify any active and closed sites where releases or spills of hazardous materials have occurred within the study area. The search performed for this assessment was conducted in June 2023. Sites were identified as containing potentially hazardous materials handling, storage, or incidents in the computerized regulatory databases searched on a list of sites complied pursuant to California Government Code Section 65962.5. The following properties within ½ mile of the Proposed Project were identified as having a history of hazardous materials releases on site (GeoTracker 2023).

- The MID Corporation Yard, located on Village Drive in McSwain, is a leaky underground storage tank cleanup site. Soil contaminated with gasoline was the main concern at the site. The status of the site cleanup is completed and closed.

Fire Hazards

According to CAL FIRE's Fire Hazard Severity Zone maps, the Proposed Project area contains and is surrounded by moderate, high, and very high state responsibility fire hazard severity zones, as well as federal responsibility areas (CAL FIRE 2007). This means that there is significant threat of wildfire in the area, especially in the drier months. More information can be found in Section 3.11, Wildfire.

3.7.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on hazards and hazardous materials. The thresholds used to evaluate potential hazards and hazardous materials impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on CEQA Guidelines Appendix G and are listed below. Impacts on hazards and hazardous materials are considered significant if the Proposed Project would result in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact Assessment Assumptions and Methodology

Approach to Analysis

A desktop analysis was completed to collect and analyze data related to hazards and hazardous materials in the study area. Information was collected on known hazardous material sites within the study area and GIS data and aerial imagery were used to identify the hazardous sites within the study area. Additionally, the following resources were used for data collection:

- EnviroStor Database (DTSC 2023)
- GeoTracker Database (SWRCB 2023)
- Mariposa County Local Hazard Mitigation Plan (Mariposa County 2020)

Potential impacts from implementation of the Proposed Project involving hazards and hazardous materials were evaluated qualitatively using known hazardous materials site data.

Impacts Associated with the Proposed Project

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

CONSTRUCTION IMPACTS

The Proposed Project would involve the transport and use of common construction materials such as vehicle fuels, grease, paint, asphalt, and concrete which could pose a threat as hazardous materials. The use, transport, and disposal of these materials carries the potential for an accidental release into the local environment. As the Proposed Project area includes a reservoir intended as a potable water source this could result in a significant impact. Any contractor working on the Proposed Project would be required to comply with all Federal, State, and Local requirements

regarding the transport, use, and disposal of hazardous materials. Conforming to these regulations would reduce such potential impacts to **Less Than Significant** during construction.

OPERATIONS IMPACTS

Operation and maintenance of the Proposed Project would require occasional inspection and maintenance involving trucks that use fuel and grease. However, these vehicles would not represent an increase over existing vehicle traffic by employees or patrons of Merced ID. Therefore, the Proposed Project would have a **Less than Significant** impact during operations**.**

Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

CONSTRUCTION IMPACTS

As discussed above, the Proposed Project would involve the use of common construction materials such as vehicle fuels, grease, paint, asphalt, concrete that would be hazardous if they were to be accidentally released into the environment. Further, with vehicle and equipment use comes the potential for spills during construction, maintenance, and refueling, which could constitute a significant impact.

Some of the Proposed Project-related recreation projects may occur before license issuance for the Merced River and Merced Fall FERC Relicensing Projects, while others would be expected to occur after FERC issues a new license. For those Proposed Project-related activities that would happen after license issuance, the required license measures and plans that protect for hazards would be in effect, and the analysis from FERC's 2015 FEIS would be relevant. Therefore, potential impacts are analyzed under both scenarios- with and without a new license.

As previously discussed in 3.3, Biological Resources, in consultation with the USFWS, Merced ID agreed to implement multiple protective measures for ESA-listed species *before and during* the new license, including some that would reduce the potential for hazards and hazardous materials. In order to minimize potential adverse effects on species and their habitats prior to relicensure due to Proposed Project-related construction, implementation of all standard Biological Resources MMs (**MM-BIO-1** through **MM-BIO-15**) are required for all project activities. Specifically, vehicular limitations (**MM-BIO-4**) requires that all maintenance or refueling of vehicles or equipment must occur in designated areas and/or a secondary containment, located away from wetted areas.

The Proposed Project would also be required to implement a SWPPP (see discussion in Section 3.5 Geology and Soils) with best management practices to reduce the likelihood and severity of the release of construction related pollutants like fuel and grease to a less than significant level. Therefore, the Proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment ant impacts would be **Less than Significant** during construction**.**

OPERATION IMPACTS

As discussed previously, operation and maintenance activities would include ongoing maintenance, occasional inspection, and equipment that may use vehicle fuel, grease, and paint. As these would not increase traffic or hazardous materials beyond existing levels, they would not increase potential impacts. Improvements to recreation areas may include the installation of fuel storage tanks to be

operated by concessionaires. Were these tanks to accidentally discharge into the environment that could cause a significant impact. As Lake McClure is navigable, and therefore a Water of the United States, any concessionaire managing a fuel storage tank, or other source of hazardous material, will be subject to acquiring a separate general NPDES permit, that will also require hazardous materials handling plans and County permits; concessionaires will be 3rd party independent contractors. These requirements reduce possible impacts through foreseeable upset and accident conditions to a **Less than Significant level** during operations**.**

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

CONSTRUCTION AND OPERATION IMPACTS

The closest schools to the Proposed Project area are the Lake Don Pedro Elementary School located approximately 2.5 miles west of Lake McClure and Greely Elementary School and Greely Hill Gold Rush Charter School located approximately 6 miles northeast of Lake McClure (Google 2023). Both are beyond the quarter mile buffer set by this threshold. Therefore, the Proposed Project would have **No Impact** during construction or operations**.**

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

CONSTRUCTION AND OPERATION IMPACTS

As discussed in the Environmental Setting, *Database Listings* section previously, there is a single recorded leaking underground storage tank near the Proposed Project area on Village Drive, in McSwain. This site is listed as cleaned and closed. Any contaminated soils or groundwater encountered by the project will be managed, stored, and disposed of in accordance with requirements of the SWPPP and NPDES CGP and held to conditions under construction contracts to prevent new contamination. As there are no active hazardous materials sites in or near the Proposed Project area, and regulations require management of any unexpected discoveries that could occur during construction or operations, there would be **No Impact.**

Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and Operation Impacts

The closest airports to the Proposed Project area are the Pine Mountain Lake Airport located approximately 11 miles north of Lake McClure and the Mariposa-Yosemite Airport located approximately 9 miles southeast of Lake McClure (Google 2023). They are well beyond the two-mile buffer considered in this threshold. Therefore, the Proposed Project would have **No Impact.**

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project would not close roads or limit access to primary highways. In the eventuality that rehabilitation of project facilities would render a Recreation Area inaccessible or unusable for a

period of time, that Recreation Area would be closed, and traffic rerouted to other Merced ID Recreation Areas. Therefore, the Proposed Project would have **No Impact** during construction or operations.

Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Construction and Operation Impacts

The Proposed Project area is surrounded by high to very high fire hazard severity zones; the nearby towns of Lake Don Pedro and Coulterville have some areas that are designated extreme fire hazard severity zones. However, the Proposed Project would not exacerbate existing wildfire threat to the communities, and as such, would not expose any people or structures to wildfire threat. Therefore, the Proposed Project would have **No Impact** during construction or operations**.**

The Proposed Project requires no Mitigation Measures related to hazards and hazardous materials.

3.7.4 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than Significant	N/A	Less than Significant
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Less than Significant	N/A	Less than Significant
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No Impact	N/A	No Impact
Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code § 65962.5 and, as a result would it create a significant hazard to the public or the environment	No Impact	N/A	No Impact
Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area	No Impact	N/A	No Impact

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	No Impact	N/A	No Impact
Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires	Less than Significant	N/A	Less than Significant

3.7.5 References

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3.8 Hydrology and Water Quality

This section describes the regulatory and environmental setting related to hydrology and water quality in the Proposed Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the Proposed Project footprint.

3.8.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential hydrology and water quality impacts and identifying mitigation. The hydrology and water quality standards within the Study Area are regulated by the local policies and regulations of Mariposa County (County), as well as state and federal policies.

Federal

Clean Water Act

The Federal Water Pollution Control Act of 1948 was the first major United States law to address water pollution. Amended in 1972, the law became commonly known as the CWA (33 USC Section 1251). The CWA established the structure for regulating discharge of pollutants into waters of the United States and regulating quality standards for surface waters.

CWA Section 404 (33 USC Section 1344) enables regulation of the discharge of dredged or fill material into waters of the United States, including wetlands. To comply with CWA Section 404, a permittee must document the measures taken to avoid and minimize impacts on waters of the United States and provide compensatory mitigation for any unavoidable impacts.

Under CWA Section 401 (33 USC Section 1341), federal agencies are not authorized to issue a permit or license for any activity that may result in discharges to waters of the United States, unless a state or tribe where the discharge originates either grants, waives or denies CWA Section 401 certification. Decisions made by states or tribes are based on the proposed project's compliance with USEPA water quality standards as well as applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and any other appropriate requirements of state or tribal law. In California, the SWRCB is the primary regulatory authority for CWA Section 401 requirements.

National Pollutant Discharge Elimination System

The NPDES permit was established in the CWA to regulate municipal and industrial discharges to surface waters of the US. The ultimate objective of the CWA is zero pollutant discharge, but it recognizes the need for a system to regulate non-zero pollutant discharges until the zero-pollutant objective is feasible. CWA Section 402 established NPDES for this purpose. The NPDES regulates all pollutant discharges, particularly point source discharges, to the waters of the US. As part of this regulation the NPDS program established Construction General Permits. The Construction General Permit established for California is described in the next section.

Construction General Permit

Also established through the CWA Section 402 NPDES program, the California Construction General Permit (CGP) (NPDES No. CAS000002, SWRCB Order No. 2009-0009-DWQ as amended

by 2010-0014-DWQ and 2012-0006-DWQ) authorizes the discharge of stormwater (and certain unauthorized non-stormwater discharges) from construction sites that disturb 1 acre or more of land, and from smaller sites that are part of a larger, common plan of development. For all projects subject to the CGP, the applicant is required to hire a qualified developer and practitioner to develop and implement an effective SWPPP. All project registration documents, including the SWPPP, are required to be uploaded into the SWRCB's online Stormwater Multiple Application and Report Tracking System prior to ground disturbing activities. Please see Section 3.6 Geology and Soils for more information.

Wild and Scenic Rivers Program

The Wild and Scenic Rivers program was created in 1968 to protect rivers with outstanding natural, cultural, and recreational values in free-flowing condition for the enjoyment of present and future generations. Rivers may be designated by congress as Wild, Scenic, or Recreational. Each of these categories refers to a degree of development, ranging from those that have never been dammed and are only accessible by trail to those that are easily accessible by road or railroad and may have some degree of development in the past, including dams. Upstream of Lake McClure both the main and south forks of the Merced River are designated along various reaches as Recreational, Scenic, and Wild. This designation ends at the normal maximum operating pool of Lake McClure.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code Section 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15) is the primary state regulation that addresses water quality. The requirements of the act include adjudication of water rights, setting water pollution control policy, issuing water board orders on matters of statewide application, and overseeing water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and NPDES permits. These requirements are implemented by the SWRCB at the state level and the regional water quality control boards (RWQCBs) within the nine regions designated. The regional water boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement activities. They are further responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements or conditional waivers to waste discharge requirements. Waste discharge requirements are required by the regional water boards for activities that may affect water quality.

Clean Water Act Section 401 Water Quality Certification

A CWA Section 401 water quality certification is required for activities that require CWA Section 404 permits issued by USACE. As mentioned above, the SWRCB has primary regulatory authority for CWA Section 401 requirements for protecting water resources. Enforcement of these requirements is also handled by the nine regional water boards depending upon location of the potential impacts. The Central Valley RWQCB will be responsible for CWA Section 401 for this project.

California has been delegated permit authority for the NPDES permit program, including storm water permits, for all areas except tribal lands. Issuance of CWA Section 404 permits remains the responsibility of USACE; however, the state actively uses its CWA Section 401 certification authority to safeguard that CWA Section 404 permits will comply with state water quality standards.

Waters of the State

Under California state law, Waters of the State refers to “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code Section 13050). Therefore, water quality laws apply to both surface water and groundwater. After the United States Supreme Court decision in Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, the Office of Chief Counsel of the SWRCB released a legal memorandum confirming the state’s jurisdiction over isolated wetlands. In general, the SWRCB regulates discharges to isolated waters in much the same way as they do for waters of the United States, but the regulation is via the Porter-Cologne Water Quality Control Act rather than the CWA.

Local

Water Quality Control Plan (Basin Plan)

The Proposed Project is under the jurisdiction of the RWQCB. The RWQCB implements the *Water Quality Control Plan* (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region (RWQCB 2018) to regulate surface and groundwater quality in the region. The Basin Plan covers the entire Sacramento and San Joaquin River Basins. The Basin Plan lists beneficial uses and water quality objectives to protect those uses. The Proposed Project is in the Sacramento River Basin and will follow the requirements laid out in that portion of the Basin Plan.

Yosemite-Mariposa Integrated Regional Water Management Plan

The *Integrated Regional Water Management Plan* (IRWMP) was developed and adopted by the Mariposa County Resource Conservation District. The IRWMP serves to reflect current understanding of regional water management issues and address recently revised IRWMP standards. Projects identified by the IRWMP are eligible to apply for grants under the Integrated Regional Water Management Grant Program.

3.8.2 Environmental Setting

Surface Water

Mariposa County contains three major drainage basins: the Merced River, Chowchilla/Fresno River, and a localized cluster of streams of the east valley known as the Lower Mariposa group of streams. These three basins and their component watersheds are part of the much larger San Joaquin River system that drains the western slopes of the Sierra Nevada. Portions of the main stem of the Merced River and its South Fork have been designated a "Wild and Scenic River". A "Wild and Scenic River" designation preserves rivers in their free-flowing state to maintain water quality and protect the beauty of its environment for the benefit and enjoyment of future generations. Most of the watershed lies within Yosemite National Park. The Sierra Nevada Forest Plan Amendment FEIS identifies the Merced River as an "Emphasis Watershed" – i.e., a relatively undisturbed native watershed. Almost 85 percent of the watershed of the South Fork of the Merced River is on lands managed by the Sierra National Forest. The South Fork of the Merced River originates in Yosemite National Park and meanders through the park for a short distance before moving onto Sierra National Forest lands west of the park (Mariposa County 2006a).

The Proposed Project is located at Lake McClure and Lake McSwain along the Merced River in Mariposa County. Existing recreation areas discharge surface water to Lake McClure, Lake McSwain, and the Merced River. According to the Water Quality Control Plan (Basin Plan) for the

RWQCB, Central Valley Region, beneficial uses in Lake McClure and Lake McSwain include irrigation, power, contact and non-contact recreation, warm and cold freshwater habitat, and wildlife habitat. Potential beneficial uses also include municipal and domestic water supply. The stretch of the Merced River going through the Proposed Project area includes water quality objectives for boron, molybdenum, selenium, dissolved oxygen, chlorpyrifos (CVWQCB 2019).

Groundwater

Much of the groundwater in the county is recovered from hard rock wells drilled into plutonic granites of the Sierra Nevada. Granite is the first rock unit encountered in the downward migration of groundwater. Granitic masses are emplaced through a series of intrusions, which create structural characteristics that govern groundwater flow. These joints, exfoliation sheets, fractures, faults and subsequent differentiated granitic intrusives, dikes and sills, create natural pathways and containment features, which affect groundwater movement. An analysis of granitic terrain for hydrologic capabilities utilized topographic features, aerial infrared mapping and botanical studies. This information serves to delineate features that show probable continuity with subsurface water flow. In addition, it is recognized that the soil mantle, acting as a filtration and containment system which facilitates percolation and subsequent recharge to the fissure crack system, functions as a temporary water reservoir, subject to the effects of fluctuating precipitation (Mariposa County 2006a).

Flooding

The Proposed Project includes Lake McClure and McSwain Reservoir, which are both designated as Flood Zone A up to their high-water mark. Flood Zone A shows a place where flood hazard areas are subject to inundation by the 1% annual chance flood. These flood zones are clearly visible in maps of each recreation area in Chapter 2, Project Description, as areas devoid of greenery, since the reservoir uses that as the high-water mark and fills to that level every year, as possible. The Proposed Project areas outside of Flood Zone A are designated as Flood Zone D, where flood risks are possible, but have not been assessed. These areas are located adjacent to the Bagby Recreation Area and upstream of it, placing them in officially designated wilderness areas, bordering the Wild and Scenic portion of the Merced River (FEMA 2009).

Seiches

A seiche is a periodic oscillation of a body of water such as a river or lake resulting from seismic events, strong winds, or other causes. The Mariposa County Local Hazard Mitigation Plan recognizes the possibility of seiches on Lake McClure, however severe seiches are unlikely and the riskiest occurrences would only occur when one of the rare earthquakes historically observed in Mariposa County amplifies local effects. The primary damage potential from seiches on Lake McClure is to boats or houseboats. If there were structural flaws from construction or deterioration in any of the dams in the county, seiches would have the potential of intensifying those weaknesses (Mariposa County 2006b).

3.8.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on hydrology and water quality. The thresholds used to evaluate potential hydrology and water quality impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on CEQA Guidelines Appendix G and are listed below. Impacts on hydrology and water quality are considered significant if the Proposed Project would result in any of the following:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - result in substantial erosion or siltation on- or off-site;
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - impede or redirect flood flows?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact Assessment Assumptions and Methodology

Approach to Analysis

A desktop analysis was completed to collect and analyze data related to hydrology and water quality in the study area. Key sources of information and plans include the following:

- Water Quality Control Plan for the California RWQCB Central Valley Region (CVWQCB 2019)
- FEMA Flood Maps (FEMA 2009)
- Mariposa County EIR Technical Background Report (Mariposa County 2006a, 2006b)

This analysis of environmental effects focuses on foreseeable changes to the existing hydrologic conditions in the context of effects listed under *Thresholds of Significance*.

Impacts Associated with the Proposed Project

Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

CONSTRUCTION IMPACTS

It is possible that proposed construction activities could cause an increase in runoff, siltation, and/or turbidity, which could lead to a decrease in surface and/or ground water quality. These concerns are addressed later in this section, under discussions of drainage pattern in impacts HYD-3,4, 5, and 6. It is also possible that equipment may accidentally discharge hazardous waste, especially fuel, during construction activities. These accidental discharges would be addressed by the SWPPP and NPDES GCPs and are discussed further in Section 3.7 Hazards and Hazardous materials. Further, as previously discussed in 3.3, Biological Resources, in consultation with the USFWS, Merced ID agreed to implement multiple protective measures for ESA-listed species *before and during* the new license, including some that would reduce the potential for hazards and hazardous materials. In order to minimize potential adverse effects on ESA-listed species due to Proposed Project-related construction, implementation of all standard MMs (**MM-BIO-1** through **MM-BIO-15**) are required for all project activities. Specifically, vehicular limitations (**MM-BIO-4**) requires that all maintenance or refueling of vehicles or equipment must occur in designated areas and/or a secondary containment, located away from wetted areas.

Therefore, the Proposed Project would have a **Less than Significant** impact during construction.

OPERATION IMPACTS

The Proposed Project site currently serves as a reservoir for Merced ID's service area and maintains facilities and protocols to protect surface and ground water quality within their jurisdiction. In the event of Proposed Project implementation these procedures would be updated, as necessary, and maintained, and Merced ID would continue to adhere to all such procedures.

Therefore, the Proposed Project would have a **Less than Significant** impact during operations.

Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

CONSTRUCTION IMPACTS

Construction of the Proposed Project is not anticipated to interact with, limit, or interfere with groundwater capacity in the Project Footprint. Soil disturbed during construction would primarily be at shallow levels, with utilities and storage tanks requiring open trenching; none of this work is anticipated to reach the depth of the water table. Ground disturbance activities would be consistent with those historically performed at Merced ID recreation sites and would have a **Less than Significant** impact during construction.

OPERATION IMPACTS

Operation of the Proposed Project would consist primarily of the same types of maintenance and operational procedures as Merced ID practices currently. These activities have no influence on groundwater in the Project area.

Therefore, the Proposed Project would have a **Less than Significant** impact during operations.

Impact HYD-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

CONSTRUCTION IMPACTS

Construction activities may increase erosion and siltation through ground disturbance. This disturbance would be incidental and temporary, would not alter the course of a stream or river, and is not anticipated to be substantial. To mitigate any possible impacts to siltation or substantial erosion the Proposed Project would implement **MM HYD-1**.

Therefore, the Proposed Project would have a **Less than Significant with Mitigation Incorporated** impact during construction.

OPERATION IMPACTS

Operational and maintenance activities are expected to remain consistent with current practice. Landscaping may be performed for the purpose of improving stormwater drainage, however this is expected to improve drainage and limit siltation and erosion.

Therefore, the Proposed Project would have a **Less than Significant** impact during operations.

Impact HYD-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project would not redirect drainage patterns of the existing recreation areas, nor the course of streams or rivers.

Some projects propose to add minimal impervious surfaces, primarily related to expanding some parking lots that are not immediately adjacent to the reservoirs and potential paving of 3rd Party Concessionaires slabs. These improvements would have minor impacts and would include required stormwater control features. Further, runoff from the Proposed Project recreation sites drain into Lake McClure, the Merced River, or the McSwain Reservoir which are designed and maintained to control the contents of the reservoirs and manage flooding within the reservoir and in the irrigation district downstream.

Therefore, the Proposed Project would have a **Less than Significant** impact during construction and operations.

Impact HYD-5: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

CONSTRUCTION AND OPERATION IMPACTS

As described in HYD-4, the Proposed Project would add minimal impervious surfaces and would not redirect any streams or rivers. Further, runoff from the Proposed Project site drains into Lake McClure, the Merced River, or the McSwain Reservoir which are designed and maintained to control

contents of the reservoirs and manage flooding within the reservoir and in the irrigation district downstream.

Therefore, the Proposed Project would have a **Less than Significant** impact during construction and operations.

Impact HYD-6: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project would add minimal impervious surfaces and would not alter existing drainage patterns or redirect any streams or rivers. The Proposed Project includes proposals to improve stormwater drainage to control potential flooding throughout the recreation sites as part of the proposed Utilities Master Plan being included in this CEQA at a programmatic level of review (Section 2.3.9, Utilities Master Plan Parameters). Areas designated as flood hazard zones would not contain improvements that would be impeded, hampered, or damaged by inundation. Infrastructure that might be included in flood zones would primarily be water intakes for water being used for off-lake swim areas or pulled for treatment and other uses. Further, runoff from the Proposed Project site drains into Lake McClure, the Merced River, or the McSwain Reservoir which are designed and maintained to control contents of the reservoirs and flooding within the reservoir and in the irrigation district downstream.

Therefore, the Proposed Project would have a **Less than Significant** impact during construction and operations.

Impact HYD-7: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project contains areas designated as flood hazard zones A and D, however any improvements that would be located in zone A (flood hazard areas that are subject to inundation by the 1% annual chance flood) require water as part of the environment; these would include water intakes, etc. Further, under Proposed Project conditions, no pollutants would be released within flood hazard zones. As addressed previously, seiches are extremely unlikely on Lake McClure and McSwain Reservoir and would most likely be the result of one of the rare earthquakes that Merced and Mariposa County have historically experienced.

Therefore, there would be **No Impact** during construction or operations.

Impact HYD-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

CONSTRUCTION AND OPERATION IMPACTS

The Proposed Project is integral to the terms of the FERC License renewal relating to recreation of the Merced River and Merced Falls FERC Hydroelectric projects. These projects and their respective reservoirs are foundational to sustainable water management, irrigation, and groundwater recharge in Merced ID. Proposed Project operations would not contribute to water quality issues that applicable water quality control plans are designed to address. There are no sustainable groundwater management plans that would be impacted by the project.

Therefore, the Proposed Project would have **No Impact** during construction or operations**.**

3.8.4 Mitigation Measures

Following is a description of the mitigation being proposed as part of the Proposed Project:

- **MM HYD-1: Construction Stormwater Management and Treatment Plan.** As special conditions to site-specific construction plan documentation, Merced ID will prepare and implement, or if a contractor is hired, will require contractor to do so, a project-specific Stormwater Management and Treatment Plan that addresses construction-related activities. The plan will be enforceable as a contract provision, and will include all of the SWPPP and Small MS4 permits. Further, Prior to initiation of ground- disturbing activities within 250 feet of vernal pools or 100 feet of other aquatic resources, construction BMPs will be employed on-site to prevent degradation to on-site and off-site aquatic resources. Methods will include the use of appropriate measures to intercept and capture sediment prior to entering aquatic resources, as well as erosion control measures along the perimeter of all work areas to prevent the displacement of fill material. All BMPs will be in place prior to initiation of any construction activities and will remain until construction activities are completed. All erosion control methods will be maintained until all on-site soils are stabilized.

3.8.5 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	Less than Significant	N/A	Less than Significant
Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	No Impact	N/A	No Impact
Impact HYD-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Result in substantial erosion or siltation on- or off-site	Significant Impact	MM HYD-1	Less than Significant with Mitigation Incorporated

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact HYD-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site	Less than Significant Impact	N/A	Less than Significant Impact
Impact HYD-5: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Create or contribute runoff water what would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff	Less than Significant Impact	N/A	Less than Significant Impact
Impact HYD-6: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Impede or redirect flood flows	Less than Significant Impact	N/A	Less than Significant Impact
Impact HYD-7: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation	No Impact	N/A	No Impact
Impact HYD-8: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	No Impact	N/A	No Impact

3.8.6 References

CVWQCB. 2019. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region Fifth Edition. https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201902.pdf Accessed 6/13/2023.

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3.9 Recreation

3.9.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential recreation resources impacts and identifying mitigation. The recreation resources within the Study Area are regulated by the local policies and regulations of Merced County, City of Merced, and Mariposa County (County).

Federal

Bureau of Land Management Sierra Resource Management Plan

The BLM Sierra Resource Management Plan (SRMP) was adopted in February 2008. The SRMP is nearly identical to the Proposed SRMP and Final Environmental Impact Statement published on June 8, 2007. Specific management decisions (including management activities, mitigations and project design features) for public lands under the jurisdiction of the Folsom Field Office have been outlined in the SRMP. The SRMP has the following two recreation goals: 1) ensure the continued availability of outdoor recreational opportunities while protecting other resources and uses; and 2) ensure adequate river flows for boating, fishing, swimming, etc. In addition, the five recreation objectives are: 1) develop recreation management strategies for large blocks of BLM land in wild and scenic river corridors; 2) develop recreation sites that meet public health and safety standards; 3) mitigate conflicts between competing uses; 4) maintain existing visitor center, campground, trail, and day use facilities to accepted BLM standards; 5) manage recreation for a remote experience on the wild segments of the North Fork American, Tuolumne, and Merced rivers pursuant to the Wild and Scenic Rivers Act. (USDOI BLM 2008, pp. 26-27)

The SRMP utilizes a Recreation Opportunities Spectrum (ROS), which identifies broad categories of recreation activities and experiences in the State Recreation Management Areas (SRMA) on the Sierra District. Of note, the Sierra District has one SRMA in the Project Area – the Merced River SRMA. The identified recreation opportunities can be administered by managing the setting, facilities, signing, level of management presence/law enforcement, and types of access to these areas. The BLM has customized the ROS terminology to match the scattered land pattern in the planning area's river corridors. The definitions and categories are directed toward summer, peak use, and water or trail-oriented activities. The recreation opportunities for SRMAs are organized into three major categories (USDOI BLM 2008, pp. 27-28):

- High Use areas - opportunities for high levels of social interaction (high levels of use with people in close proximity);
- Transition areas - opportunities for moderate levels of social interaction (moderate levels of use with people in close to moderate proximity); and,
- Remote areas - opportunities for low levels of social interaction, with a focus on appreciation for and a sense of solitude or remoteness.

The SRMP details the following specific management actions for recreation: Shooting will not be allowed in the direction, or within 150 yards, of any human-occupied dwelling, house, residence, barn, or other outbuilding used in connection therewith. Shooting will not be allowed in the direction, or within 150 yards, of trails or other recreational developments, transmission towers, telecommunications structures, and other facilities on BLM land. Shooters are responsible for understanding gun safety and finding BLM land that is appropriate and safe for shooting, including

land where there is minimal ricochet potential and suitable backstops to prevent continued bullet/projectile travel. For the Merced River SRMA, which contains high use, transitional and remote use areas, the BLM established the following management actions (USDOI BLM 2008, pp.28-29):

- Manage in accordance with the Merced River Wild and Scenic Management Plan
- Manage for whitewater and other types of recreation
- Prohibit discharge of firearms in the 0.5-mile-wide Merced River corridor
- Limit motorized use to street legal vehicles on the Merced River campground access road
- Prohibit suction dredging on the designated wild segment, except on mining claims that predate the river's wild and scenic designation and have approved plans of operations
- Prohibit camping on the south side of the Merced River unless BLM gives written permission
- Build/support development of a non-motorized trail between Bagby and El Portal

Of note, the BLM Sierra resource area includes five designated open motorized recreation/OHV routes in the Project Area – Schilling Ranch Road, Bull Creek Road (Burma Grade), Merced River Campground Access Road, Telegraph Hill Road, and Hunter Valley Mountain Road. Of these five designated open OHV routes, the Hunter Valley Mountain Road provides access to the Project Area at Lake McClure via entirely BLM lands on the south side of the reservoir between the Bagby arm and main section of the reservoir. This route is accessed from the Town of Hornitos or the Bagby area via County Road J-16 (Bear Valley Road). The other four OHV routes are east of the Project Area in the Briceburg area.

State

Statewide Comprehensive Outdoor Recreation Plan

California's 2021-2025 Statewide Comprehensive Outdoor Recreation Plan (SCORP) identifies and prioritizes outdoor recreation opportunities and constraints most critical in California. The SCORP establishes the following actions to address California's park and recreation needs: 1) increase park access, 2) community-based planning, and 3) health partnerships through grants (CDPR 2020).

An element of the SCORP, the 2012 Survey on Public Opinions and Attitudes on Outdoor Recreation in California, identifies the top 15 recreational activities in California with the highest latent demand (Table 3.9-1).

Table 3.9-1. Top 15 Recreational Activities with the Highest Latent Demand

Ranking	Recreational Activity
1	Picnicking in picnic areas (with tables, fire pits, or grills)
2	Walking for fitness or pleasure on paved surfaces
3	Camping in developed sites with facilities such as toilets and tables (not including backpacking)
4	Beach activities (swimming, sunbathing, surf play, wading, playing on beach)
5	Swimming in a pool
6	Day hiking on un-paved trails
7	Attending outdoor cultural events
8	Visiting outdoor nature museums, zoos, gardens, or arboretums
9	Shopping at a farmer's market
10	Visiting historic or cultural sites

Ranking	Recreational Activity
11	Wildlife viewing, bird watching, viewing natural scenery
12	Driving on paved surfaces for pleasure, sightseeing, driving through natural scenery
13	Swimming in freshwater lakes, rivers and/or streams
14	Jogging and running for exercise (on trails, streets, sidewalks, paths)
15	Bicycling on paved surfaces

Source: CDPR 2014

These are activities that Californians would participate in, from a statewide perspective, if more facilities and opportunities were provided. Of these top 15 recreation activities, picnicking, wildlife viewing, swimming, and day hiking are available in the Project Area. Additionally freshwater fishing ranks 17 on the list of top recreational activities in California with the highest latent demand. Other relevant findings from the 2012 SPOA survey include (CDPR 2014):

- Most Californians participated in walking for fitness or pleasure (74 percent). Other activities with high percentages of participants include picnicking in picnic areas; driving for pleasure; sightseeing; driving through natural scenery; and beach activities.
- The park facilities and services that Californians rank most important are play areas for young children; wilderness type areas where no vehicles or development are allowed; environmental and outdoor education programs; multi-use turf areas for field sports; picnic sites for large groups; trails for multiple, non-motorized activities; and hard-surface trails.
- The majority of Californians visit highly developed parks and recreation areas; developed nature-oriented parks and recreation areas; historical or cultural buildings, sites, or areas; and natural and undeveloped areas during the past 12 months.

Local

County of Mariposa General Plan

The recreation needs for Mariposa County fall within two categories: local recreation and regional tourism. The Local Recreation Element identifies the county's need to provide residents with recreation facilities and programs via the County Parks and Recreation Department, which addresses programs, facility development, and maintenance; intergovernmental cooperation; and park and recreation funding. Implementation of the Local Recreation Element revolves around five key goals of which one is relevant to the Project -- cooperate with regional agencies to develop a range of recreation opportunities for the County (Goal 12-4) (Mariposa County 2006).

Regional tourism is at the core of Mariposa County's economy, which traditionally has relied greatly on visitors who travel to Yosemite National Park; however, the County is experiencing a rise in visitors to other areas of the County for recreation. The Regional Tourism Element addresses issues related to enhancement of visitor-oriented attractions such as the expansion and integration of county regional tourism opportunities which includes the following goals relevant to the Project – 1) preserve, protect and enhance regional tourism opportunities and resources (Goal 13-1); 2) increase public access to trails and off-road areas to provide greater opportunities for "in-County" visitor experience (Goal 13-3); and create visitor access to communities and points of interest (Goal 13-4) (Mariposa County 2006).

3.9.2 Environmental Setting

Situated in eastern Merced County, the majority of the Resource Study Area is characterized by reservoir-based recreational uses at Lake McClure and McSwain Reservoir.

Lake McClure

Lake McClure is a man-made lake on the Merced River formed by New Exchequer Dam. Lake McClure extends 19 miles upstream, has a surface area of 7,110 acres; and a shoreline length of approximately 82 miles. The lands surrounding the reservoir outside of the public recreation areas are predominantly private. There are four developed recreation areas at Lake McClure, including McClure Point Recreation Area (RA), Barrett Cove RA, Horseshoe Bend RA, and Bagby RA. Most of the public RAs and facilities are located on Merced ID-owned land, though some federal land administered by the BLM exists within the Project Area, specifically two recreation areas at Lake McClure: McClure Point Recreation Area (RA) and Horseshoe Bend RA. The remaining two Lake McClure RAs (i.e., Barrett Cove RA and Bagby RA) are located entirely on Merced ID land. In addition, mountain bike specific trails are available at Exchequer Bike Park located near Barrett Cove RA.

Lake McClure supports year-round fishing and offers abundant populations of rainbow trout, Kokanee, spotted bass, smallmouth bass, largemouth bass, crappie, bluegill, and channel catfish. CDFW and Merced ID stock the reservoir with rainbow trout. Water-based activities, particularly boating, are a popular activity at Lake McClure. Houseboating is also a popular activity at Lake McClure. The Barrett Cove Marina has year-round houseboat and patio boat rentals as well as fishing boat, personal watercraft (PWC), and ski boat rentals. Houseboat usage is regulated by Merced ID. Notably, three floating restroom buildings with two stalls each are anchored on Lake McClure for use by water-based users.

McClure Point Recreation Area

McClure Point RA is located on the southwest portion of Lake McClure. Primary access to the RA area is from the southwest by County Road J-16 and Lake McClure Road. McClure Point RA consists of a campground (101 sites), picnic area (8 sites), swim beach and lagoon, marina, and two boat launches.

Barrett Cove Recreation Area

Barrett Cove RA is located on the west shoreline of Lake McClure to the north of McClure Point RA. Primary access to the RA is by Merced Falls Road from the southwest; State Highway 132 from the west and northwest; and State Highway 49 from the east, southeast, and northeast. Barrett Cove RA consists of a campground (275 sites), park model cabins, swim beach and lagoon, two boat launches, marina, and an overflow parking area.

Horseshoe Bend Recreation Area

Horseshoe Bend RA is located on the north shoreline of Lake McClure to the northeast of Barrett Cove RA. Primary access to the RA is by State Highway 132 from the west, southwest, and northwest and State Highway 49 from the east, southeast and northeast. Horseshoe Bend RA consists of a campground (109 sites), swim beach and lagoon, and boat launch.

Bagby Recreation Area

Bagby RA is located on the southeast shoreline near the upstream end of Lake McClure. Primary access to the RA is by State Highway 49. Bagby RA consists of a developed campground (30 sites), primitive camping area (15 sites), and a boat launch.

McSwain Reservoir

McSwain Reservoir is a man-made reservoir on the Merced River formed by McSwain Dam. The reservoir is 4.8 miles long, has a water surface area of 310 acres; and a shoreline length of approximately 12.5 miles. The public recreational facilities are located on Merced ID land on the northern shoreline. The southern shoreline does not have public access due to private land ownership.

McSwain Reservoir is a popular spot for anglers due to its consistent shore trout fishing year-round. CDFW stocks McSwain Reservoir with rainbow trout. Boating is also a popular activity at McSwain Reservoir; however, most of the boating is related to fishing due to the 10 miles per hour (mph) speed limit on the entire reservoir. Undeveloped or dispersed recreation use is not allowed outside of the expansive developed RA. As a result, hiking and biking opportunities and trails do not exist at McSwain Reservoir, except as permitted within the recreation area boundary. One developed RA is located at McSwain Reservoir – McSwain RA.

McSwain Recreation Area

McSwain RA is located on the north shoreline of McSwain Reservoir near McSwain Dam. Primary access to the RA is by County Road J-16 and Lake McClure Road from the southwest. McSwain RA consists of a campground (112 sites), picnic area (12 sites), park model cabins, group picnic area (1 site), swim beach, marina, boat launch, and informal day-use area.

3.9.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on recreation resources. The thresholds used to evaluate potential recreation resources impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and listed below. Except as provided in Public Resources Code Section 21099, impacts on recreation resources are considered significant if the Proposed Program would result in either of the following:

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Impacts Associated with the Proposed Project

Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

CONSTRUCTION IMPACTS

The Proposed Project would require construction to rehabilitate existing facilities as they near the end of their useful life and/or improve existing recreation facilities in accordance with the Proposed Project's *Recreation Facilities Plan*. The rehabilitation and improvement construction projects have the potential to limit the amount of available recreation facilities to meet the recreation demand (due to closures during construction), which could result in displaced visitors that could lead to increased visitation at other existing local/regional parks and recreation facilities. The Proposed Project would include implementation of the *Recreation Facilities Plan* which includes numerous measures to mitigate the potential for substantial numbers of displaced visitors that could increase use and physical deterioration of other recreation facilities. Specifically, the *Recreation Facilities Plan* includes guidelines for scheduling major recreation facility rehabilitation work. Merced ID would rehabilitate or replace the existing facilities in phases, but in some instances may choose to replace some facilities, sections, or campground loops of facilities in a wholesale manner. Further, the overall implementation schedule for major rehabilitation and improvements is phased such that similar facilities (campgrounds, swim beaches, picnic areas, boat launches) are not under construction at the same time either within a recreation area or at other recreation areas. This scheduling approach minimizes the closures for similar facilities and would keep most of the existing recreation area facilities open/available for public recreation. While some visitors may be displaced, the Proposed Project has ample additional public recreation facility capacity either within the same recreation area or at one or more of the other four recreation area complexes – all of which provide similar recreation facilities and opportunities. In addition, the location of the Proposed Project allows for a year-round construction season, which would allow Merced ID to schedule construction work outside the peak summer recreation season which would further minimize the number of displaced users (if any) as Merced ID often closes portions of each recreation area outside the peak/summer recreation season due reduced recreational demand in the off seasons.

Overall, with the implementation of the *Recreation Facilities Plan*, the Proposed Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. As a result, there would be **No Impact** and no mitigation is required.

OPERATION IMPACTS

O&M for the Proposed Project's recreation facilities would not substantially accelerate physical deterioration of Merced ID's recreational facilities nor increase the number of recreationalists using the facilities. Rather, routine maintenance activities would minimize or delay physical deterioration of the Proposed Project's recreation facilities. No neighborhood or regional parks would be affected by the Proposed Project.

Overall, the Proposed Project would have no impact and would not accelerate physical deterioration of existing facilities. As a result, the Proposed Project would have **No Impact**, and no mitigation would be required.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

CONSTRUCTION IMPACTS

The Proposed Project includes routine maintenance of existing recreational facilities and the development of new or expanded recreation facilities or features within existing recreation areas. Maintenance and construction associated with recreational facilities has the potential to affect biological resources and geology and soil resources in the Proposed Project area. Analysis of these impacts and associated management plans are discussed in Section 3.3, *Biological Resources*, and in Section 3.5, *Geology and Soils*.

Some of the Proposed Project-related recreation projects may occur before license issuance for the Merced River and Merced Falls FERC Relicensing Projects, while others would be expected to occur after FERC issues a new license. For those Proposed Project-related activities that would happen after license issuance, the required license measures and plans that protect soils would be in effect, and the analysis from FERC's 2015 FEIS would be relevant. For those projects that may be implemented prior to acceptance of new FERC licenses, if necessary, Mitigation Measures are included in the Mitigation section. Therefore, potential impacts are analyzed under both scenarios- with and without a new license.

The 2015 FEIS analyzed the potential effects of the Proposed Project's O&M, construction, and recreation activities and proposed FERC License Articles, BLM 4(e) Conditions and Merced ID Proposed Measures, assuming acceptance of a new license. BLM condition G&S-1 from the FEIS requires the *Development and Implementation of a Recreation Facilities Construction Erosion Control and Reforestation Plan*, assuming acceptance of the new licenses. Further, Merced ID's proposed RR1 *Implement Recreation Facilities Plan* and RR2 *Provide Recreation Flow Information and River Access Signage* measures would reduce the potential for negative impacts at recreation areas. Assuming acceptance of new licenses, the FEIS determined that the Proposed Project was not likely to adversely affect existing recreation areas with the development and implementation these three measures.

Part of Measure RR1 *Recreation Facilities Plan* requires that a Site Development and Construction Plan be developed for each major recreation improvement project. Future recreation improvement projects would be subject to additional permits and approvals; however, the *Recreation Facilities Plan* and associated *Site Development and Construction Plans* would reduce potential impacts to the recreation areas' physical environment. The *Site Development and Construction Plan* for future recreation improvement projects would include:

a) Identifying site-specific erosion and sedimentation control measures that will be used;

b) Identifying any necessary measures to address traffic circulation and parking issues associated with recreation use during the reconstruction activity;

c) Reviewing other sensitive resource inventories (cultural, archeological, and biological resources);

d) Identifying appropriate procedures to avoid impacts to other key resources at the site; and

e) Identification of any regulatory and permitting requirements needed prior to commencing construction.

For those Proposed Project-related recreation projects that may occur before license issuance for the Merced River and Merced Falls FERC Relicensing Projects, MM-REC-1 would be required prior to construction to reduce potential effects to recreation areas during construction.

If the new FERC licenses are accepted, MM-REC-1 would be replaced by the Recreation Facilities Plan and associated Site Development and Construction Plans that would be triggered by the relicensing conditions.

Further, as previously discussed in 3.3, Biological Resources, in consultation with the USFWS, Merced ID agreed to implement multiple protective measures for ESA-listed species before and during the new license, including some that would indirectly reduce the potential for soil erosion or loss of vegetation. In order to minimize potential adverse effects on ESA-listed species due to Proposed Project-related construction, implementation of all standard MMs (**MM-BIO-1** through **MM-BIO-16**) are required for all project activities. Specifically, acquisition of any and all permits for each construction project (**MM-BIO-1**), reducing area of disturbance (**MM-BIO-2**), vehicular limitations (**MM-BIO-4**), workers trainings (**MM-BIO-6**), minimization of vegetation removal (**MM-BIO-9**), no net loss of sensitive communities (**MM-BIO-10**), and avoidance of aquatic habitat (**MM-BIO-14**) are all MMs that will also benefit recreation.

Therefore, after biological resources mitigation have been implemented, coupled with **MM-REC-1**, impacts from the Proposed Project on recreation would be **Less Than Significant with Mitigation Incorporated** during construction.

OPERATION IMPACTS

Operation of the Proposed Project's existing recreation facilities would not have an adverse physical effect on the environment. Rather, the Proposed Project would have a beneficial impact by providing rehabilitated, improved, and new recreation facilities and amenities that meet current standards and better meet current and future recreational demand. As a result, the Proposed Project would have **No Impact**, and no mitigation would be required.

3.9.4 Mitigation Measures

Following is a description of the mitigation being proposed as part of the Proposed Project:

- **MM-REC-1 Site Development and Construction Plans.**

  The Site Development and Construction Plan for individual recreation improvement projects would include:

  - Identifying site-specific erosion and sedimentation control measures that will be used;
  - Identifying any necessary measures to address traffic circulation and parking issues associated with recreation use during the reconstruction activity;
  - Reviewing other sensitive resource inventories (cultural, archeological, and biological resources);
  - Identifying appropriate procedures to avoid impacts to other key resources at the site; and
  - Identification of any regulatory and permitting requirements needed prior to commencing construction.

If new FERC licenses are accepted, **MM-REC-1** would be replaced by the *Recreation Facilities Plan* and associated *Site* Development *and Construction Plans* that would be triggered by the relicensing conditions.

3.9.5 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact REC-1: increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	No Impact	N/A	No Impact
Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment	Significant Impact	MM-REC-1	Less than Significant with Mitigation Incorporated

3.9.6 References

California Department of Parks and Recreation (CDPR). 2020. California's 2021–2025 Statewide Comprehensive Outdoor Recreation Plan (SCORP). Sacramento, California. Available at: www.parksforcalifornia.org/scorp. Accessed on November 7, 2024.

California Department of Parks and Recreation (CDPR). 2014. Survey on Public Opinions and Attitudes on Outdoor Recreation in California (SPOA) 2012, Complete Findings. January 2014. Sacramento, California.

Mariposa County. 2006. Countywide General Plan. Mariposa, California. Approved December 18, 2006.

United States Department of the Interior (USDOI), Bureau of Land Management (BLM). 2008. Sierra Resource Management Plan and Record of Decision. Folsom Field Office. Folsom, CA.

3.10 Tribal Cultural Resources

This section describes the regulatory and environmental setting related to tribal cultural resources in the Project Area and evaluates potential impacts that could result from implementation of the Proposed Project. For the purposes of this section, the study area includes the Proposed Project Area, which includes five existing recreation areas: McSwain, McClure Point, Barrett Cove, Horseshoe Bend, and Bagby; the proposed Mack Island recreation area; and certain additional trails, including a bike trail from the McSwain Recreation Area to the McSwain Dam, a trail from the McSwain Recreation Area to the New Exchequer Dam at the base of Lake McClure, and improvements on a trail from Bagby to Sherlock Creek.

As described in Section 2.3, the Proposed Project also includes continued operations and maintenance at the Merced Falls Recreation Area. No new construction or upgrades are proposed at the Merced Falls Recreation Area. Merced ID will continue to operate and maintain the existing recreation facilities, including the River's Edge Fishing Access area, the Merced Falls Fishing Access area, restroom, informal Angler Trail along northern shoreline, the two informal parking areas on either side of Hornitos Road County Bridge, and the car-top boat launch at Merced Falls Fishing Access area. Directional and safety signage would be posted at the informal canoe portage trail at the south end of Merced Falls Dam.

3.10.1 Regulatory Setting

This section describes guidelines and regulations for evaluating potential tribal cultural resources impacts and identifying mitigation. The cultural resources standards within the Study Area are regulated by the federal government and the state of California.

Federal

Indian Trust Assets

ITAs are legal interests in property held in trust by the U.S. for Native American tribes or individuals. Examples of potential ITAs are lands, minerals, fishing rights, and water rights. Management of ITAs is based on the following orders, agreements, and regulations:

- Executive Order 13175, Consultation and Coordination with Indian Tribal Governments 65 FR 67249
- Memorandum on Government-to-Government Relations With Native American Tribal Governments (FR Volume 59, Number 85, signed April 29, 1994)
- Secretarial Order No. 3175 – Departmental Responsibilities for Indian Trust Resources
- Secretarial Order No. 3206 – American Indian Tribal Rights, Federal -Tribal Trust Responsibilities, and the federal Endangered Species Act (ESA)
- Secretarial Order No. 3215 – Principles for the Discharge of the Secretary's Trust Responsibility
- Secretarial Order No. 3342 – Identifying Opportunities for Cooperative and Collaborative Partnerships with Federally Recognized Indian Tribes in the Management of Federal Lands and Resources

- Secretarial Order No. 3335 – Reaffirmation of the Federal Trust Responsibility to Federally Recognized Tribes and Individual Indian Beneficiaries

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 (AIRFA; 42 U.S.C. § 1996) protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

Historic Sites Act of 1935

The Historic Sites Act of 1935 (54 U.S.C. 320101–320106, formerly 16 U.S.C. 461–467) declares"…that it is a national policy to preserve for public use historic sites, buildings, and objects of national significance…," asserting historic preservation as a government duty under jurisdiction of the United States Secretary of the Interior.

National Historic Preservation Act

As discussed and defined in Section 2.5, Cultural Resources, Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. For purposes of the discussion regarding tribal cultural resources, it is important to underscore that historic properties include properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the National Register criteria (36 C.F.R. § 800.16[l]).[1]

Traditional Cultural Properties and Traditional Cultural Landscapes

Traditional Cultural Properties (TCPs) are properties associated with cultural practices or beliefs of a living community that are: (1) rooted in that community's history; and (2) important in maintaining the continuing cultural identity of a community. TCPs can refer to properties of importance to any community, including Indigenous communities. The appropriate terminology for sites of importance to Indian tribes is 'historic property of religious and cultural significance to an Indian tribe [and Native Hawaiian organization'" (ACHP 2008:19; ACHP 2011:14). Traditional cultural landscapes (TCL) encompass the same meaning and utility, as well as inclusivity of Indigenous communities. The Secretary of the Interior's Guidelines for the treatment of cultural landscapes define a cultural landscape as "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (Birnbaum and Peters 1996:4).Historic vernacular landscapes "evolved through use by the people whose activities or occupancy shaped them" and ethnographic landscapes "contain a variety of natural and cultural resources that associated people define as heritage resource" (Birnbaum and Peter 1996:4; Ball et al. 2015:7).

National Register Bulletin 38 provides examples of TCPs – and TCLs – that fit the definition in the guidelines (Parker and King 1998:1):

- A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world
- A rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents
- An urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices

- A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice
- A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity

TCPs and TCLs are eligible for inclusion on the NRHP if they meet the criteria set forth in 36 C.F.R. § 60.4, National Register Criteria for Evaluation. The steps in the identification and evaluation of TCPs are the following (abbreviated from Parker and King 1998:11-14):

1. Potential Traditional Cultural Properties must be identified through consultation with the affected community or Tribe
2. The investigation must consider the beliefs and practices associated with a potential Traditional Cultural Properties from the perspective of the community or Tribe
3. The potential Traditional Cultural Properties must be a property, that is, a tangible place on the landscape, rather than an intangible belief or practice
4. The property must retain integrity of relationship with the beliefs and practices that give it meaning to the community or Tribe
5. The property must retain integrity of condition, such that the elements of the property associated with the beliefs and practices that give it significance are present
6. The property must meet one or more of the four criteria for eligibility on the National Register (see Section 2.5.1.1 [Cultural Resources – Regulatory Setting – Federal).

Cultural resources routinely not considered for eligibility for inclusion in the NRHP are religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties achieving significance within the past 50 years. However, these resources, can be evaluated as eligible if they meet one or more of the NRHP eligibility criteria for evaluation, retain integrity, and meet special criteria requirements called criteria considerations. The most notable of the seven considerations (A through G) is Criteria Consideration G, which specifies that a property that has achieved significance within the last 50 years can qualify for the NRHP only if it is of exceptional importance. As noted by Parker and King (1998:17–18), “a significance ascribed to a property only in the past 50 years cannot be considered traditional.” However, they also note: “The fact that a property may have gone unused for a lengthy period of time, with use beginning again only recently, does not make the property ineligible for the [National] Register” (Parker and King 1998:14).

If a property is determined to be a TCP, it becomes the responsibility of the lead agency to assess whether the proposed project would have an effect on the property, and should the effect be adverse, would it alter or destroy the elements that make the property significant and eligible. If a proposed project is determined to have an adverse effect, the lead agency is responsible for seeking measures that would mitigate the adverse effects to TCPs.

State

Tribal Cultural Resources

As defined at PRC § 21074, a tribal cultural resource (TCR) is a site, feature, place, cultural landscape, sacred place or object that is of cultural value to a California Native American tribe and is

either: (1) on or eligible for the CRHR or a local historic register; or (2) the lead agency, at its discretion, chooses to treat the resource as a TCR. TCRs are similar to TCPs in terms of their characteristics, identification, and treatment, and may include a cultural landscape to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Additionally, as defined at PRC § 21074(c), a historical resource, a unique archaeological resource, or a non-unique archaeological resource may also be a TCR if it conforms to the criteria of a TCR in PRC § 21074(a). CEQA mandates that lead agencies determine whether a project will have a significant impact on TCRs that are eligible for listing on the CRHR (i.e., a historical resource), or are determined to be significant by the lead agency in order to appropriately mitigate any such impacts.

Under the CEQA Guidelines, even if a resource is not included on any local, state, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource (i.e., TCR) for the purposes of CEQA, if there is substantial evidence supporting such a determination (CEQA Guidelines § 15064.5[a]). A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the CRHR. A resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Criterion 1)
- Is associated with the lives of persons important in our past (Criterion 2)
- Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values (Criterion 3)
- Has yielded, or may be likely to yield, information important in prehistory or history (Criterion 4)

In accordance with CEQA guidelines, cultural resources investigations are necessary to identify TCRs that may have significant impacts as a result of a project (14 CCR §15064.5). The following steps are routinely implemented in a cultural resources investigation for CEQA compliance:

1. Identify cultural resources in the proposed project area
2. Evaluate against the CRHR criteria of significance (listed below)
3. Evaluate the impacts of the proposed project on all cultural/tribal resources
4. Develop and implement measures to mitigate proposed project impacts on historical resources or resources deemed significant by the lead agency

As TCRs hold cultural value to a California Native American tribe, consultation with local Native American tribes is an integral component of each of the cultural resources investigation steps described above.

Assembly Bill 52 and Consultation

The lead agency for CEQA is responsible for consultation with Native American tribes regarding the potential for a project to impact TCRs, pursuant to Assembly Bill 52 and PRC §§ 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, 21084.3, and 5097.94(m). Assembly Bill 52 recognizes that "…tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated…" and that consultation will occur between a lead agency and Native American tribes for covered projects.

PRC §21080.3.1 (a) and Government Code §65352.4 define consultation as "the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance."

As described in Section 3.4, Cultural Resources, a proposed project may induce a significant impact to a historical resource, unique archaeological resource, or a TCR if it causes a substantial adverse change (i.e., physical demolition, destruction, relocation, or alteration) to the resource or immediate surroundings (14 CCR 15064.5[b]), thereby demolishing or significantly altering the physical characteristics that qualify it for listing on the CRHR or local registers (PRC §§ 5020.01[k] and 5024.1[g]). A project that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment (PRC § 21084.2). A lead agency shall establish measures to avoid impacts that would alter significant characteristics of a TCR, when feasible (PRC §21084.3). As such, the County is committed to working together with tribes and consultation efforts with California Native American tribes are described below.

Native American Historical, Cultural, and Sacred Sites

Pursuant to PRC 5097.94 the NAHC has authority and duty to "identify and catalog places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands" and has the power and duty to make recommendations for acquisition by the state or other public agencies regarding Native American sacred places that are located on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans.

California Native American Graves Protection and Repatriation Act of 2001

Section 8010 and 8011 of the CHSC also address the protection of Native American human remains and cultural items and state:

- 8010. This chapter shall be known and may be cited as the California Native American Graves Protection and Repatriation Act (CALNAGPRA) of 2001.
- 8011. It is the intent of the Legislature to do all of the following:

  (a) Provide a seamless and consistent state policy to ensure that all California Indian human remains, and cultural items be treated with dignity and respect.

  (b) Apply the state's repatriation policy consistently with the provisions of the Native American Graves Protection and Repatriation Act (25 U.S.C. Sec. 3001 et seq.), which was enacted in 1990.

  (c) Facilitate the implementation of the provisions of NAGPRA with respect to publicly funded agencies and museums in California.

  (d) Encourage voluntary disclosure and return of remains and cultural items by an agency or museum.

  (e) Provide a mechanism whereby lineal descendants and culturally affiliated California Indian tribes that file repatriation claims for human remains and cultural items under the Native American Graves Protection and Repatriation Act (25 U.S.C. Sec. 3001 et seq.) or

under this chapter with California state agencies and museums may request assistance from the commission in ensuring that state agencies and museums are responding to those claims in a timely manner and in facilitating the resolution of disputes regarding those claims.

(f) Provide a mechanism whereby California tribes that are not federally recognized may file claims with agencies and museums for repatriation of human remains and cultural items.

3.10.2 Environmental Setting

This section presents an overview of information on the local prehistory and history of the Proposed Project area and vicinity. Understanding local cultural history is critical in defining important local, state, and/or regional events, trends, or patterns in prehistory and history by which the significance of prehistoric and historical cultural resources may be evaluated and their significance may be established.

Ethnohistory

The following ethnography is excerpted from the Merced ID's relicensing *Technical Memorandum 13.1, Native American Traditional Cultural Properties*, and Traditional Cultural Property Report (TCP) report prepared by McCarthy (2014) for the Merced ID relicensing.

Little ethnographic information pertains directly to the Southern Sierra Miwok, the primary tribal representatives in the Project Area, as most information gathered by Twentieth Century ethnographers focused on the Miwok of Yosemite Valley. That being considered, much is known about the general patterns of the Sierra Miwok and some basic cultural patterns emerge that can be applied to the Southern Sierra Miwok.

Many accounts of the Sierra Miwok were recorded during the early development of California, after the Gold Rush. These include documentation of the Miwok from the latter part of the Nineteenth Century and the first quarter of the Twentieth Century primarily by Powers (1976 [1877]), Barrett (1908), Kroeber (1908, 1976 [1925]), and Merriam (1907). Powers was the first to describe the Sierra Miwok (McCarthy 2014).

Kroeber (1976 [1925]), using linguistic data, wrote that the Sierra Miwok territory extended from the Cosumnes River to the Fresno River. The Southern Sierra Miwok group is part of the Eastern Miwok and has two dialect areas; one along the Merced River and the other along Mariposa Creek and the Chowchilla and Fresno rivers (Levy 1978). It is thought that the occupation of the Sierra Foothills by the ancestral Miwok likely began around 800 years ago (Levy 1978).

The main political unit of the Miwok was the tribelet, which included political lineage localities that made up the permanent settlements. There was an average population estimated to be around 25 persons. Habitation occurred in semi-permanent settlements and numerous seasonally occupied campsites that were used at various times throughout the year for gathering, hunting, and fishing activities (Levy 1978). Ethnographic literature points to the presence of a chief or an assembly house in the community at the capital or principal settlement (Levy 1978).

The preference for Miwok settlements was along water ways, "typically along streams or on ridges or knolls with a southern exposure" (Moratto 1984:290). House types among the Miwok included the semi-subterranean dance house, the sweat house, and the kocha or living house. The dance house, or hanji, was the largest of the three structure types and consisted of two rows of two posts, with the door of the house facing east. Sweat houses were smaller structures but were built in a similar fashion

to the dance house. The kocha, or living houses, were "ruder, earth-covered" houses and were thought to only have been lived in for part of the year (Kroeber 1976 [1925]:447). Barrett and Gifford (1933) described Miwok dwellings as being conical and consisting of both above ground and semi-subterranean structures. They also discuss house types not mentioned by Kroeber, which include a ceremonial brush structure, a ceremonial rectangular structure, also of brush, and a grinding booth (Barrett and Gifford 1933). Other structures built and used by the Sierra Miwok included caches and granaries for the storage of goods, in particular acorns (Barrett and Gifford 1933; Kroeber 1976 [1925]).

The Sierra Miwok made baskets using twined and coiled techniques for storing and processing acorns, seed beating and burdening, cradles, and winnowing (Barrett and Gifford 1933; Kroeber 1976 [1925]; Levy 1978). For cooking, hot stones were placed in baskets to boil acorn meal.

Miwok technology also included the production of ground stone items, such as mortars and pestles, important in the processing of plant material, and in particular acorns. Kroeber (1976 [1925]:448) wrote, "[t]he Miwok pound acorns with pestles in holes in granite exposures; on flat slabs laid on or sunk into the ground without a basket hopper…" Handstones and bedrock mortars (BRM) were used to grind the acorn meal into flour (Levy 1978).

Lithic technology produced a range of tool types, including both flaked and ground stone tools, including projectile points; knives, scrapers, and expedient tools like hammer stones and choppers made from various materials, such as chert and obsidian (Levy 1978). Moratto (1984:287-88) notes that there are many "Sierran mineral resources of archaeological interest" found in the central Sierra which include: "alabaster, steatite, quartz crystals, basalt, rhyolite, slate, clay, hematite, chert, chalcedony and granite bedrock." These materials, in addition to the obsidian obtained from several quarries located at Bodie Hills, Mono Craters, Mono Glass Mountain, Casa Diablo, Mt. Hicks, Queen, Fish Springs and Coso Hot Springs (Moratto 1984), were the toolstone of choice for the manufacture of flaked and ground stone implements, and for the production of rock art.

Bow and arrow, as well as stone tools used in the manufacture of the bows and arrows, were noted by Levy (1978) and described as the preferred implement for hunting and war. He notes that a variety of types of projectile points were made by the Miwok, also for hunting and war, and that the foreshaft of the arrows was "designed to remain implanted in the victim even when the main shaft was removed or broken off" (Levy 1978: 405). The points were manufactured with a concave base, and on occasion side-notches were added (Levy 1978), which likely helped to better anchor the points to the arrow shafts.

Flora and fauna located on the western side of the Sierra run in north-south bands, which would have provided easier access to the Miwok for valley, foothill, and mountain resources within their area of occupation (Moratto 1984). The Sierra Miwok traveled to higher or lower elevations during various seasons of the year to obtain subsistence resources unavailable in the vicinity of their permanent settlements. In general, alpine resources were only accessed during the summer months and foothill and valley resources were accessed throughout the year (Moratto 1984). The inhabitants occupying the transition zone forest moved to elevations above 800 ft during the summer months in pursuit of deer. Those in the foothill areas would occasionally visit the plains of the central valley to hunt pronghorn and tule elk, which were unavailable in the mountains (Levy 1978).

The Miwok hunted large game, with an emphasis on deer. Grizzly bear, black bear, elk, antelope, rabbits, and birds were also hunted. Large game animals were hunted and eaten communally. Meat

consumption was at its greatest in the winter months when plant resources were limited to stored foods (Levy 1978). Gathering of plant foods varied seasonally, as greens were gathered in the spring and were used to supplement the diet of acorns stored from the previous fall. Seeds were gathered from May to August. Pine nuts were collected after August, when the land was burned. In the late fall and early winter, acorns were gathered (Levy 1978).

The Miwok also fished in the many available water ways and collected a large variety of plant materials that included berries and other fruits, nuts, roots, bulbs, wild greens and grass seeds (Levy 1978; Moratto 1984). Barrett (1908), Kroeber (1908), and Merriam (1907) all recorded temporary habitation and fishing villages along the Merced River between Merced Falls and Bagby. Chinook salmon, among other fishes, were caught with nets and harpoons. The Sierra Miwok fished in groups during the seasons when the salmon ran the river (McCarthy 2014). The salmon runs and the fishing were eventually disrupted and prevented by mining activities and the building of dams. The construction of Benton Mills in particular prevented access to upstream salmon spawning grounds and likely disturbed nearby ethnographic villages (McCarthy 2014:16).

McCarthy (2014:16) notes the difficulty in accurately identifying the villages described by Barrett, Kroeber, and Merriam due to the small scale of their maps, the severe alterations to the landscape resulting from historic mining, and the inundation of the area through construction of the original and new Exchequer Dams. Based on archival research, however, she estimates the locations of villages within the Project Area (McCarthy 2014:16).

The population of the Southern Sierra Miwok before European contact is estimated to have been approximately 2,700 (Levy 1978). The Eastern Miwok were first contacted by Spanish explorers in the second part of the eighteenth century in the Sacramento-San Joaquin Valley (Levy 1978). From that time on, dramatic cultural changes developed, including the transformation of previously independent tribelets into unified militias resisting the violence of forced labor, forced missionization, and displacement that was intensified by virulent epidemics and genocide, which killed many thousands of Miwok persons in the first half of the nineteenth century (Levy 1978).

During the 1840s, European and North American fur trappers, gold miners, and settlers arrived in droves, creating hostile relations between miners and the Sierra Miwok. For a brief time, Southern Sierra Miwok supplied labor for J.D. Savage's gold mining operations in the Big Oak Flat district, but as the number of miners increased, large mining operations were shut down and Miwok participation decreased (Levy 1978). Records indicate that at least 200 Miwok were killed by the miners during the years 1847 to 1860 (Levy 1978).

A policy of confiscation of Indian lands was implemented with the annexation of California by the United States (Levy 1978). Although treaties were signed by several members of the tribelets, they were never ratified by the U.S. Senate (Levy 1978). A few groups of Sierra Miwok were relocated to the Fresno area but most of the Sierra Miwok population remained in rancherias scattered throughout the Sierra Nevada foothills (Levy 1978). Reliance on wage labor steadily increased and dependence on gathering and hunting diminished throughout the end of the nineteenth century and early twentieth century. No reservations were established in Southern Sierra Miwok territory, and rancherias there received no official recognition by the federal government (Levy 1978). Importantly, however, modern Miwok indigenous communities with ancestral ties to the project area retain a deep spiritual, cultural, and physical tie to their ancestral land and are contemporary stewards of their culture and landscapes. The modern Miwok community represents a continuity and endurance of their ancestors by

maintaining their connection to their history and culture. It is the Tribe's goal to ensure the preservation and continuance of their cultural heritage for current and future generations.

3.10.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on tribal cultural resources The thresholds used to evaluate potential tribal cultural resources impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the CEQA Guidelines and are listed below. Except as provided in PRC Section 21099, impacts on tribal cultural resources are considered significant if the Proposed Program would result in any of the following:

- Cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)
- Cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact Assessment Assumptions and Methodology

Tribal Cultural Resources Assumptions

Pursuant to PRC § 21080.3.1 and in support of Assembly Bill 52 (AB 52), consultation efforts with Native American tribal contacts have been incorporated in the cultural resources investigation of the project area, as "California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources" (PRC § 21080.3.1[a]). Pursuant to PRC § 21080.3.1(b), lead agencies are required to send notifications of proposed projects to California Native American tribes that have requested in writing to be informed of proposed projects for consultation.

If a lead agency determines that a project may cause a substantial adverse change to a TCR, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act.

Impact Assessment Methodology

Merced ID contacted the Native American Heritage Commission (NAHC) on February 16, 2022, to request a list of California Native American tribes and organizations that may have an interest in the proposed project pursuant to PRC 21080.3.1(c), as well as to request a search of the Sacred Lands

File (SLF). The NAHC responded on March 30, 2022, providing a list of tribes that have cultural and traditional affiliation to the proposed project area. The NAHC also reported that their search of the SLF yielded negative.

On August 1, 2024, Merced ID mailed invitations to consult to the following Native American tribes and representatives:

- Lloyd Mathiesen, Chairperson of the Chicken Ranch Rancheria of Me-Wuk Indians
- Cosme Valdez, Chairperson of the Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Leland Valdez, Cultural Resources Director of the Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Fred Beihn, Chairperson of the North Fork Rancheria of Mono Indians
- Katherine Perez, President of the North Valley Yokuts Tribe
- Timothy Perez, MLD Contact of the North Valley Yokuts Tribe
- Tracey Hopkins, Chairwoman of the Picayune Rancheria of the Chukchansi Indians
- Caleb Martinez, Tribal Administrator of the Picayune Rancheria of the Chukchansi Indians
- Heather Airey, Tribal Historic Preservation Officer of the Picayune Rancheria of the Chukchansi Indians
- Sandra Chapman, Chairperson of the Southern Sierra Miwuk Nation
- Charmaine McDarment, Chairperson of the Tule River Indian Tribe
- Kevin Day, Chairperson of the Tuolumne Band of Me-Wuk Indians
- Kenneth Woodrow, Chairperson of the Wuksachi Indian Tribe/Eshom Valley Band

Follow up phone-calls were placed and emails sent to each contact approximately two and four weeks following notification.

The potential for tribal cultural resource was also assessed by reviewing the location and eligibility status of previously recorded resources using:

- Records searches data of previously conducted cultural resource studies and previously recorded cultural resources on file with the California Historical Resources Information System (CHRIS) housed at the Central California Information Center (CCIC) at California State University, Stanislaus, the BLM Mother Lode Field Office in Eld Dorado Hills, and the BLM California headquarters – database searches conducted in 2008-2010, and augmented in 2012, 2015, and 2022.
- Maps, site records, and other files in the *Final: Amended Cultural Resources Inventory Report for the Merced River Hydroelectric Project Relicensing (FERC No. 2179), Mariposa County, California* (Flint et al. 2015).
- Maps, site records, and other files in the *Traditional Cultural Properties Study: Native American Presence in the Merced River Hydroelectric Project Relicensing (FERC No. 2179), Mariposa County, California* (McCarthy 2014).

- Significance assessments and management recommendations in the *Amended Historic Properties Management Plan, Merced River Hydroelectric Project, FERC Project No. 2179* (Merced Irrigation District 2015).
- Listings of the National Register of Historic Places (NRHP).
- Listings of the California Register of Historical Resources (CRHR).

The records search data revealed the entirety of the Proposed Project Area was previously subject to intensive cultural and Tribal resource studies in support of Merced ID's environmental compliance work for the Merced River Hydroelectric Project Relicensing Project.

Identification of Tribal Cultural Resources

No tribal cultural resources, Traditional Cultural Properties, or Traditional Cultural Landscapes have been identified as a result of the cultural and tribal studies conducted under the Section 106 studies for the relicensing effort or during Assembly Bill 52 consultation for the purposes of compliance with CEQA.

Impacts Associated with the Proposed Project

Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)

CONSTRUCTION IMPACTS

The Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 because no tribal cultural resources located in or near the Proposed Project area that qualify as CEQA historical resources would be affected by the Proposed Project. There would be **No Impact**, and no mitigation measures are required.

OPERATION IMPACTS

Operation of the Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 because no tribal cultural resources located in or near the Project area that qualify as CEQA historical resources would be affected by operation of the Proposed Project. There would be **No Impact**, and no mitigation measures are required.

Impact TCR-2: Would the project cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

CONSTRUCTION IMPACTS

The Proposed Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. Any previously unrecorded precontact archaeological resources, which may ultimately also be considered a TCR, discovered during construction, or any other phase of the project, would be addressed following the protocols detailed under the cultural resource Inadvertent Discovery mitigation measures (**MM CUL-2** and **MM CUL-3**). Impacts to tribal

cultural resources would, therefore, be less than significant and no additional mitigation specific to tribal cultural resources is required.

With implementation of these mitigation measures, potential impacts would be **Less Than Significant with Mitigation Incorporated**.

OPERATION IMPACTS

Operation of the Proposed Project would not cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 because no significant tribal cultural resources would be located within the areas of operation following construction. There would be **No Impact**, and no mitigation measures are required.

Mitigation Measures

MM-CUL-2 and MM-CUL-3 are both detailed in Section 3.4 Cultural Resources, Mitigation Measures section.

3.10.4 Summary of Impacts

The mitigation measures included in this table are further described in the *Mitigation Measures* section of 3.4 Cultural Resources section. These measures would be in effect with or without relicensure.

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)	No Impact	N/A	No Impact
Impact TCR-2: Would the project cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Significant Impact	MM-CUL-2; MM-CUL-3	Less than Significant with Mitigation Incorporated

3.10.5 References

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3.11 Wildfire

This section describes the environmental setting and regulatory framework for wildfire, and it identifies direct and indirect impacts of the Proposed Project during construction, operation, and maintenance. In particular, the wildfire analysis focuses on emergency response and evacuation, wildfire risk and hazards in the study area that may be exacerbated as a result of the Proposed Project's construction, and operation, and maintenance. The study area for wildfire refers to the areas within and directly adjacent to the Merced River and Merced Falls FERC Boundaries.

3.11.1 Regulatory Setting

Federal

The National Strategy

As directed by the FLAME Act of 2009, a National Cohesive Wildland Fire Management Strategy was developed and still serves as the key strategic framework for addressing wildland fire challenges across the nation. The Wildland Fire Leadership Council (WFLC), established in 2002, is the steward of the Cohesive Strategy and has been at the center of adaptive change in wildland fire management for nearly two decades. WFLC continues to provide the key leadership to adapt and implement policies that address these wildland fire challenges. It is important to review the framework against today's challenging wildland fire environment and to adjust where appropriate for increased implementation while also anticipating and adapting to future challenges. The National Strategy was updated in 2023. This updated strategy identifies the following primary goals:

- **Resilient Landscapes:** Landscapes across all jurisdictions are resilient to fire, insect, disease, invasive species and climate change disturbances, in accordance with management objectives.
- **Fire-adapted communities:** Human populations and infrastructure are as prepared as possible to receive, respond to, and recover from wildland fire.
- **Wildfire response:** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

The National Strategy guides federal direction for the state and local agencies responsible for fire protection in the vicinity of the Proposed Project.

State

2018 Strategic Fire Plan for California

The *2018 Strategic Fire Plan for California*, developed by the State Board of Forestry and Fire Protection, provides direction and guidance to CAL FIRE and its 21 field units. This plan sets forth a number of goals focused on fire prevention, natural resource management, and fire suppression efforts, including the following (CAL FIRE 2024a):

- Improve the availability and use of consistent, shared information on hazard and risk assessment.
- Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities.

- Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as community wildfire protection plans.
- Increase awareness and actions to improve fire resistance of human-made assets at risk and fire resilience of wildland environments through natural resource management.
- Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers.
- Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services.
- Implement needed assessments and actions for post-fire protection and recovery.

The 2018 Strategic Fire Plan for California guides CAL FIRE oversight of local agencies' responsibilities for fire protection and natural resource management in the vicinity of the Proposed Project.

The Strategic Fire Plan received an administrative update in 2024 to focus on CAL FIRE's goals and values. One of its goals is to identify core capabilities and strengthen operational capacity, but it provides no additional updates to tactics, as such the 2018 plan is addressed above.

Community Wildfire Prevention and Mitigation Report

CAL FIRE prepared the Community Wildfire Prevention & Mitigation Report in response to Executive Order N-05-19, which directed CAL FIRE, in consultation with other state agencies and departments, to recommend immediate, medium-term, and long-term actions to help prevent destructive wildfires, with a specific focus on vulnerable communities and populations in the state (Mariposa County 2024). Based on local fire plans developed by CAL FIRE units, CAL FIRE identified 35 priority projects for immediate implementation to help reduce public safety risks for more than 200 communities. Projects include removal of hazardous dead trees, vegetation clearing, creation of fuel breaks and community defensible spaces, and creation of ingress and egress corridors. The *Community Wildfire Prevention & Mitigation Report* also identifies near-term administrative, regulatory, and policy actions to address community vulnerability and wildfire fuel buildup through rapid deployment of resources.

CAL FIRE's identified medium-term and long-term actions encourage coordination and cooperation among the various levels of regional and local fire protection agencies.

California Fire Code

The California Fire Code (CCR Title 24, Part 9) establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of the code contains requirements for fire preserving safety during construction, such as to develop a pre-fire plan in coordination with the fire chief, maintain vehicle access for firefighting at construction sites, and meet requirements for safe operation of construction equipment powered by internal combustion engines.

Regional

Madera-Mariposa-Merced (MMU) Strategic Fire Plan (2020)

Establishes annual goals and priorities that align with CAL FIRE's Strategic Plan and California Fire Plan to reduce wildfire risk to communities and lands within the boundaries of the Madera-Mariposa-Merced Unit. The MMU intends to improve operational effectiveness, scale to fiscal circumstances, foster a healthy ecosystem, and improve firefighter safety by identifying working projects specific to each Battalion in the Unit. The Proposed Project is located in Battalion 1: Coulterville of the SRAs that the MMU manages.

Local

Mariposa County Local Hazard Mitigation Plan (Mariposa County 2020)

To meet the requirements of the Disaster Mitigation Act 2000, the Mariposa County Office of Emergency Services (OES) has prepared a Local Hazard Mitigation Plan (LHMP) (2020 LHMP in this plan) to assess risks posed by natural hazards and to develop a mitigation action plan for reducing the risks in Mariposa County. The 2020 LHMP replaces the LHMP, which was approved in 2015. The LHMP considers the impacts of topography, fuel, weather, and location on potential wildfires; examines their severity; and considers historical occurrences to determine that fires larger than 1,000 acres are likely to occur in Mariposa County every 1 to 3 years,

The LHMP also lists resources for mitigation by category: human and technical (i.e. Fire Chief), financial (including Vegetation Management Plan, Wildfire Emergency and Mitigation Funds, and others), legal and regulatory (including the MMU, Mariposa County Code, Mariposa County Safety Element, Mariposa County Emergency Operations Plan, and the CWPP), Further, the LHMP lists recommended implementation measures, including but not limited to Red Flag Warning Public Outreach, Critical Facility Fireproof Coating, Critical Facility Auxiliary Power, WUI Classification Expansion Policy, Defensible Space Enhancement Program, SIZ assessments, Beyond Defensible Space Zone Program, and others.

Mariposa County General Plan Chapter 16: Safety

The Mariposa County General Plan incorporates the Local Hazard Mitigation Plan by reference. As such it operates under the same framework as the LHMP. It includes further details about fire hazards and wildfire threats but references the LHMP for all strategic considerations and mitigation measures.

Mariposa County Community Wildfire Protection Plan

The updated Mariposa County Community Wildfire Protection Plan (Mariposa County CWPP) was adopted in March of 2024. The Mariposa County CWPP is the primary reference for strategic wildfire planning and considers the impacts of human activity and forest health, demographic and economic factors, critical infrastructure vulnerabilities, and the patchwork of jurisdictions responsible for wildfire management and decision making in the county including 38 Wildland Urban Interface groups within 23 Planning Units and the numerous state and federal agencies that manage more than half of the total land area in Mariposa County. Of those Planning Units the Proposed Project is spread across the Hornitos and Lake Don Pedro planning units; the Recreation Areas at Merced Reservoir and McClure Point are in the Hornitos Planning Unit, those at Mack Island, Barrett Point, and Horseshoe Bend are in the Lake Don Pedro Planning Unit; Bagby, Shepherd's Point, and Sherlock Creek are all

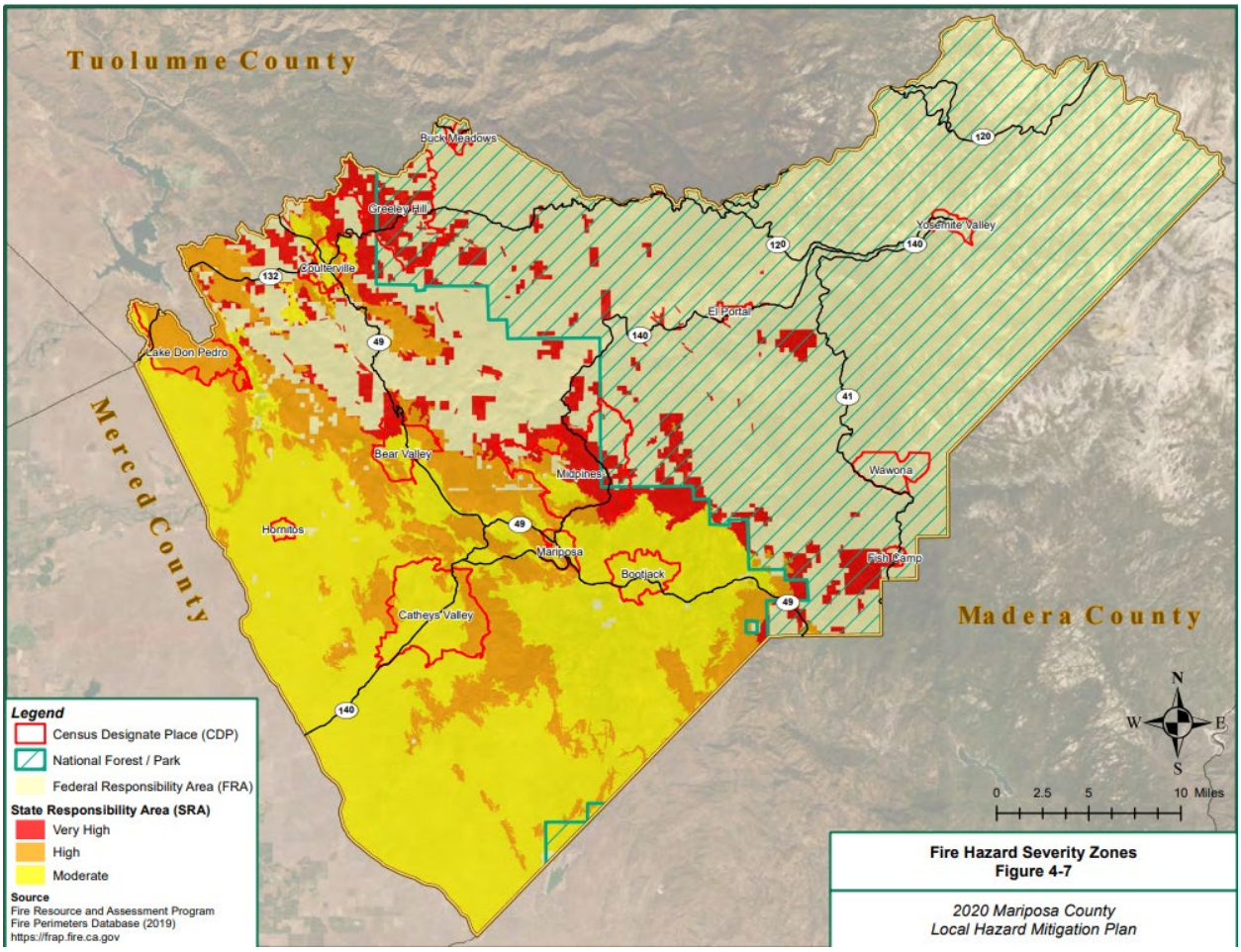
in an FRA and accordingly covered by federal agencies responsible for the Stanislaus National Forest located on the Eastern Edge of the Proposed Project area. The Mariposa County CWPP also provides strategies to address resilient landscapes, fire-adapted communities, safe and effective wildfire response, and a prioritized set of actions to meet the CWPP's goals. Wildfire risk is evaluated in the CWPP using Wildland Urban Interface and the Wildfire Risk Triangle, which considers three factors: likelihood, intensity, and susceptibility to fire.

3.11.2 Environmental Setting

Mariposa County encompasses over 936,320 acres and is located at an elevation ranging between 300 feet along the western boundary to 12,000 feet in the mountainous eastern part of the county. (Mariposa County 2024). The Proposed Project is located on the western edge of the county, which blends into agricultural uses in the San Joaquin Valley. The Proposed Project area's climate tends towards long, dry summers which dramatically increase fire susceptibility as plants dry out and dead plant matter becomes more common. This trend is becoming more extreme as the climate changes. Multiple additional factors, including drought, fires, and an increased infestation of bark beetles has killed many more trees, providing additional fuel that could contribute to the area's susceptibility to wildfires and the potentially increased intensity of these fires. As of 2017, more than 47% of the dead trees in the state were on the Sequoia, Stanislaus (Mariposa County), and Sierra National Forests (Mariposa County 2024).

The primary window for extreme fire behavior in the Proposed Project area is from late June until measurable rainfall begins. During this time of elevated fire risk, winds are generally predictable. Surface winds rise through canyons to higher elevations during the day and reverse that pattern to settle at lower elevations at night. Upper-level winds are out of the west/northwest. Fire severity zones are shown in Figure 3.12-1.

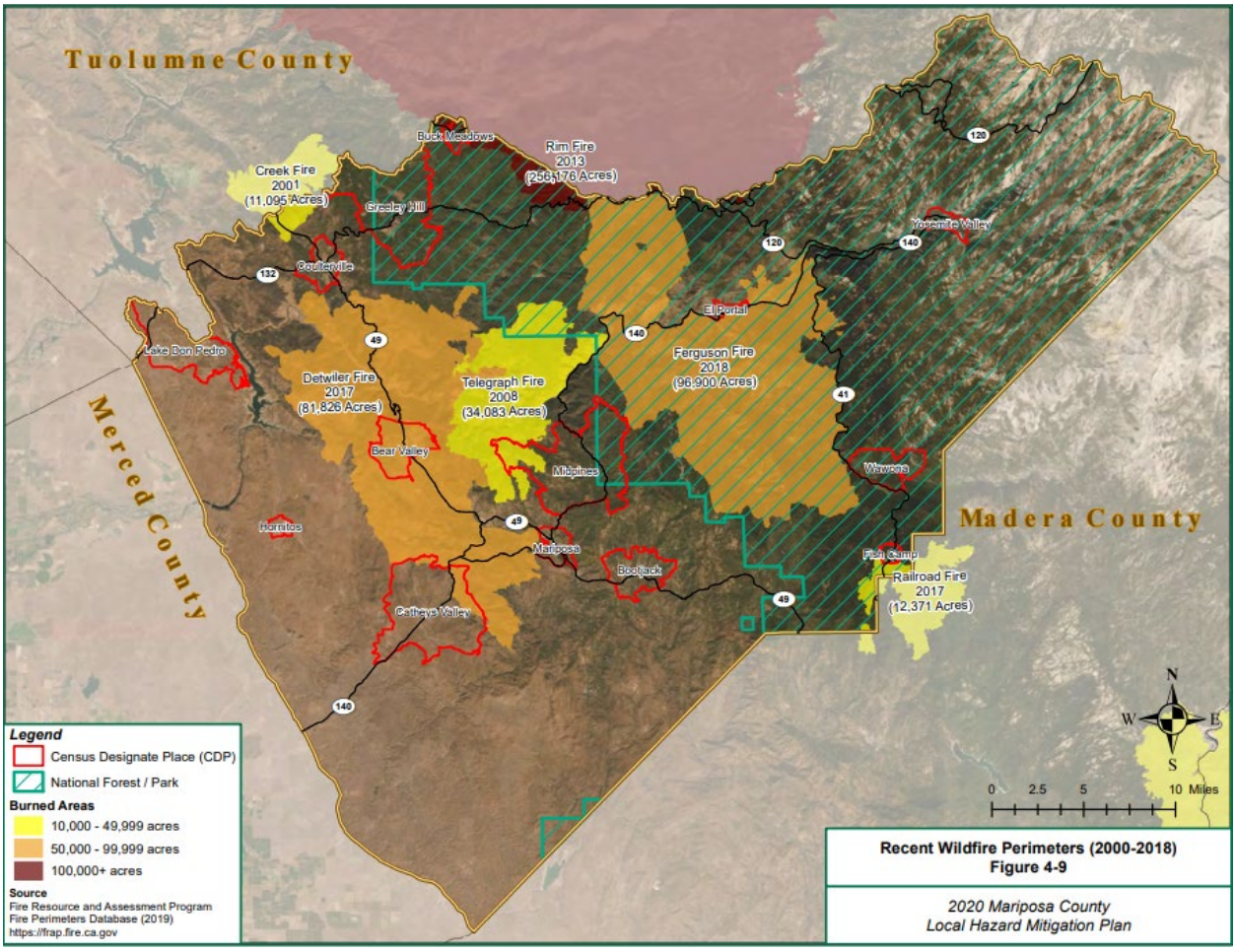
Figure 3.12-1. Fire Hazard Severity Zones in Mariposa County



Fire History

Historically, Mariposa County has had many wildfires. The frequency of these fires, many of which were set by humans for various reasons, prevented significant fuel buildup. A lack of fuel limited the destructive capacity of fires and large, destructive fires were rare before the 1940s. Over 100 years of fire policies focused on preventing and eliminating all wildfires enabled the accumulation of fuel and an associated increase in large and destructive fires. The intensity of these fires means that some of the most destructive wildfires in Mariposa County history have occurred since 2000, including the Telegraph Fire in 2008, the Ferguson Fire in 2018, and the Detwiler Fire in 2017, which approached Lake McClure. The Mariposa County LHMP discusses twelve notable fires that have occurred between 2011 and 2022, and it illustrates the extent of notable fires in Mariposa County between 2000 and 2018 (Figure 3.12-2). Most recently, the Pedro Fire, which occurred from July 30 to August 8, 2024, burned 3,815 acres, most of which were adjacent to Lake McClure, though no recreation areas were impacted (CAL FIRE 2024b).

Figure 3.12-2. Recent Wildfire Perimeters



Fire Hazards

CAL FIRE is required by law (PRC 4201 through 4204 PRC Title 14 Section 1280, and California Government code 51175-89) to identify areas, referred to as FHSZs, based on the severity of fire

hazard that is expected to prevail there. The FHSZ maps are developed using a science-based, field-tested computer model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. The FHSZ maps are developed based on factors such as fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, and weather (CAL FIRE 2024a).

SRAs are defined as areas where the State of California has financial responsibility for wildland fire protection and prevention; incorporated cities and federal ownership are not included. Within SRAs, CAL FIRE is responsible for fire prevention and suppression (CAL FIRE 2022). The Board of Forestry and Fire Protection classifies lands as SRA. All SRAs are within a FHSZ. There are three levels of hazard in the SRAs: moderate, high, and very high (CAL FIRE 2024a).

LRAs are defined as incorporated cities, urban regions, agricultural lands, and portions of the desert where the local government is responsible for wildfire protection. This is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract (CAL FIRE 2024a). CAL FIRE uses an extension of the SRA FHSZ model as the basis for evaluating fire hazard in LRAs. The LRA hazard rating reflects flame and ember intrusion from adjacent wildlands and from flammable vegetation in the urban area.

FHSZ maps evaluate wildfire hazards, which are the physical conditions that create a likelihood and expected fire behavior over a 30 to 50-year period without considering short-term modifications such as fuel reduction effort (CAL FIRE 2024a). FHSZ maps can be used for the following purposes: implementing wildland-urban interface building standards for new construction, natural hazard real estate disclosure at time of sale 100-foot defensible space clearance requirements around buildings, and property development standards such as road widths, water supply, and signage consideration in city and county general plans (CAL FIRE 2024a).

More than half of Mariposa County is owned and managed by federal or state agencies, which broadens the scope of agency collaboration needed to plan and implement wildfire response and mitigation measures (Mariposa County CWPP, 2024) The Proposed Project would be in Battalion 1 of the MMU Strategic fire plan, which has historically had some of the largest fires in the Madera-Mariposa-Merced Unit.

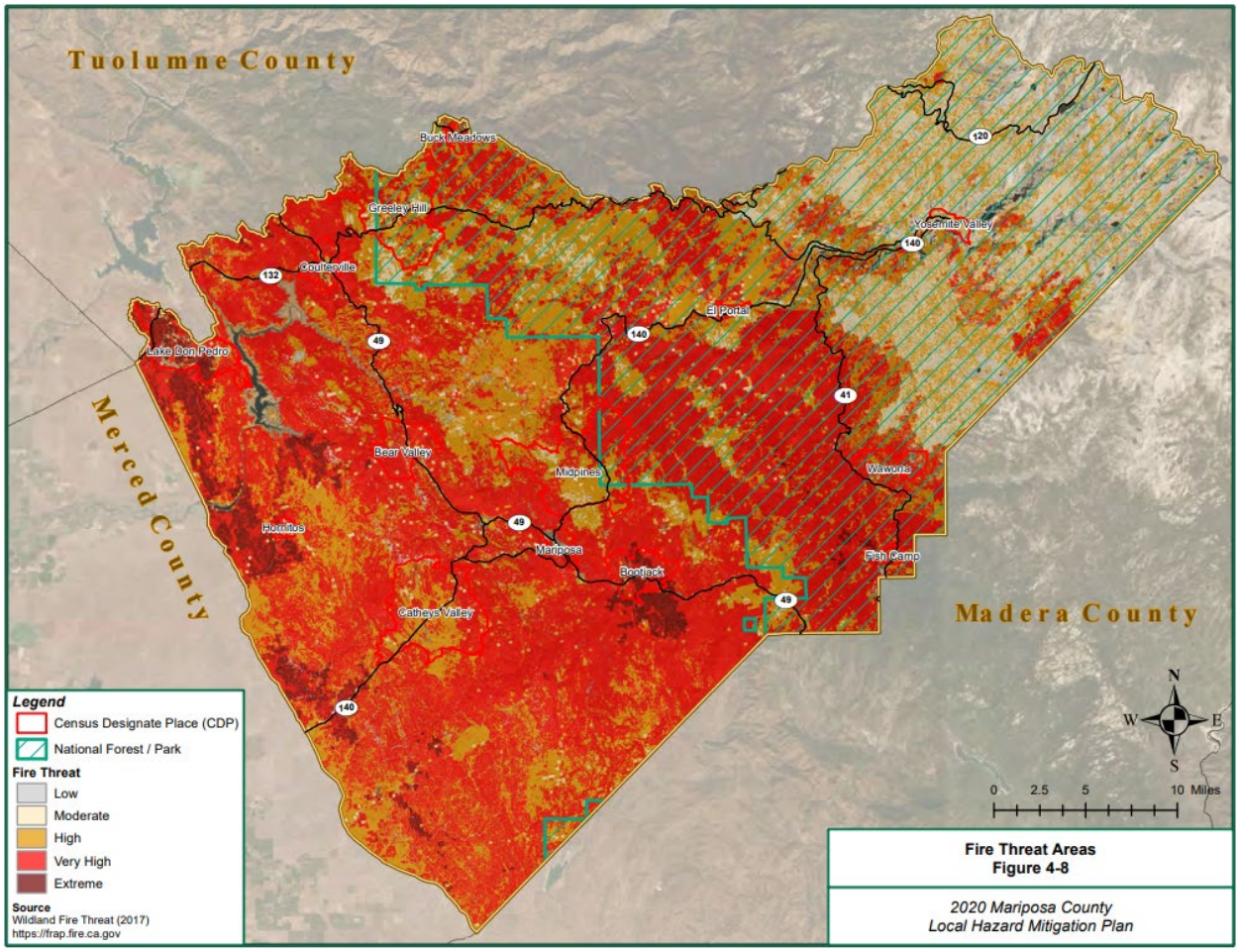
The Proposed Project Areas include areas that are SRA and designated High and Very High FHSZ (CAL FIRE2022).

CAL FIRE's Fire Resource and Assessment Program (FRAP) creates the FHSZ maps required by the state to analyze fire risk based on factors including fuel, terrain, and weather. FRAP also produces Fire Threat Area maps that break fire threats into five categories by area (low, moderate, high, very high, and extreme). The Fire Threat Map for Mariposa County is provided here as Figure 3.12-3 and shows the areas surrounding Lake McClure as low to high fire threat areas.

These two styles of map address two of the elements of the Wildfire Risk Triangle the Mariposa County CWPP uses to analyze Wildfire risk - likelihood and intensity. The third element is susceptibility, which the CWPP recommends be addressed by parcel-level Structure Ignition Zone (SIZ) assessments that consider the susceptibility characteristics of each structure and its surroundings out to a 100-foot buffer. CAL FIRE conducts inspections within Mariposa County SRAs; The Proposed Project is located in an SRA, the MMU Strategic Fire Plan establishes the proposed area as in Battalion 1: Coulterville within the three-county area. In these inspections, CAL FIRE examines brush clearing requirements but not elements separate from the building, including

fences, outbuildings, and similar. This creates a gap in susceptibility analysis, which Mariposa County does not correct, as they do not currently undertake any form of SIZ assessment. As such, local assessments of wildfire threat are incomplete.

Figure 3.12-3. Fire Threat Areas in Mariposa County



3.11.3 Environmental Impacts

This section includes the approach to and the results of the environmental impact analysis with respect to potential impacts on Wildfire risk. The thresholds used to evaluate potential Wildfire risk impacts, analysis methodology and assumptions, and impact analysis are presented in the following subsections.

Thresholds of Significance

The thresholds used to evaluate the potential impacts are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and listed below. Except as provided in Public Resources Code Section 21099, impacts on Wildfire risks are considered significant if the Proposed Program would result in any of the following:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?

- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact Assessment Assumptions and Methodology

Impacts on Wildfire risk were identified qualitatively based on the Proposed Project's potential to increase wildfire occurrence and associated risks.

A desktop analysis was completed to collect and analyze data related to wildfire risks in the study area. For the purposes of this analysis, information related to wildfire risks was collected using the following sources:

- Mariposa County Community Wildfire Protection Plan (Mariposa County 2024)
- Mariposa County Local Hazard Management Plan (Mariposa County 2020)
- Madera Mariposa Merced Unit Strategic Fire Plan (CAL FIRE 2010)

The analysis of environmental effects focuses on foreseeable changes to wildfire in the context of effects listed in the section Thresholds of Significance.

Impacts Associated with the Proposed Project

Impact FIRE-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?

The Proposed Project would not significantly alter the area's landscape, use, or traffic patterns. Construction activities may require closure of certain access roads for paving or maintenance; however, these would be consistent with current use and upkeep, rendering no change in the availability of those roads. Please see Section 3.7 Hazards and Hazardous Materials for more information on evacuations. As there are no substantial changes to access or availability of infrastructure and no expected notable increase in the area's use, and as recreation area users are temporary residents who can be evacuated without abandoning property when smoke becomes a hazard, the Proposed Project would have **No Impact** on emergency response or evacuation plans during construction and operations.

Impact FIRE-2: Due to slope, prevailing winds, and other factors, does the proposed project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The Proposed Project would not alter slope, alter site interaction with prevailing winds, or otherwise change or exacerbate wildfire risk. The Proposed Project would remain consistent with current conditions and as such would have **No Impact** during construction or operations.

Impact FIRE-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The Proposed Project would involve the rehabilitation and expansion of infrastructure and utilities, including power lines. These expansions and rehabilitations would generally occur in areas that are already occupied by similar infrastructure. In such cases, expansion and rehabilitation would reduce fire threat by updating equipment and replacing infrastructure that may malfunction and start a fire as it nears the end of its useful life. Such activities would occur within a pre-disturbed area managed by the Merced ID Wildfire Mitigation Plan (WMP).

Merced ID's 2023-2025 comprehensive WMP describes Merced ID's programs and initiatives aimed on reducing the risk of utility owned and operated facilities being the origin of or a contributing source to a catastrophic wildfire. Merced ID does not own or operate any transmission or distribution facilities within or abutting the California Public Utilities Commission (CPUC) defined as High Fire Threat District (HFTD), and the majority of the Merced ID distribution system is of underground construction, so this risk is minor, but in order to more completely mitigate the risk the WMP includes a number of principles, goals and objectives that adhere to the CPUC HFTD policies including the following.

- Construction, maintenance, and operation of transmission and distribution systems to provide safe and reliable power to customers; these include undergrounding power lines as possible and conforming to CPUC regulations regarding vegetation management as well as transmission, distribution, and substation facilities.
- Coordination with fire management personnel from responsible federal, state, county, and local agencies to implement the WMP.
- To immediately report fires caused by MEID facilities.
- To take corrective action when fire protection measures have not been properly installed or maintained.
- Compliance with all relevant requirements, including industry standards for transmission and distribution facilities established by CPUC.
- Maintenance of situational awareness of possible complicating factors and weather conditions through continuous coordination with Merced County Office of Emergency Services and monitoring of weather.
- Management of active power lines to prevent fires caused by downed lines, up to and including the preventative depowering of lines to mitigate wildfire risk.

On those occasions that infrastructure must be added to incorporate previously undisturbed areas, as may be the case with some park model cabins, the WMP would apply. Since any new construction or utilities would need to adhere to these management and mitigation plans, there would be **No Impact**.

Impact FIRE-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Proposed Project would maintain current land uses as well as management and mitigation plans, including the Merced ID WMP, as described in Impact FIRE-3. Adherence to mitigation and management plans would reduce wildfire threat by ensuring facilities and infrastructure are maintained at a level to provide safe and reliable power, by complying with all industry standards, maintaining situational awareness of increased hazards, managing quantity, proximity, and quality of vegetation, and through compliance with other plan elements discussed earlier in this section. This reduction in wildfire risk would reduce the formation of burn scars created by high temperature wildfires, which have been known to increase the possibility of runoff, post-fire slope instability, and landslides. With the reduction of such impacts from wildfires on site, there would be less loose soil, post-fire instability, drainage changes, runoff, or associated materials and threats to impact downslope or downstream environments. As such, it would not expose people or structures either at the location, downslope, or downstream to flooding or landslides. The Proposed Project would have **No Impact**.

3.11.4 Mitigation Measures

The Proposed Project requires no Mitigation Measures relating to wildfire threat.

3.11.5 Summary of Impacts

Impact	Level of Significance Before Mitigation	Mitigation	Level of Significance with Mitigation Incorporated
Impact FIRE-1: Substantially impair an adopted emergency response plan or emergency evacuation plan	No Impact	N/A	No Impact
Impact FIRE-2: Exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	No Impact	N/A	No Impact
Impact FIRE-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment	No Impact	N/A	No Impact
Impact FIRE-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	No Impact	N/A	No Impact

3.11.6 References

CAL FIRE. 2010. Madera Mariposa Merced Unit Strategic Fire Plan. https://cdnverify.osfm.fire.ca.gov/media/y3rhhwsh/2022-madera-mariposa-merced-unit-fire-plan.pdf accessed 10/28/2024

CAL FIRE. 2022. Fire Hazards Severity Zones OSFM. https://cdnverify.osfm.fire.ca.gov/media/y3rhhwsh/2022-madera-mariposa-merced-unit-fire-plan.pdf

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CAL FIRE. 2024b. Don Pedro Fire. https://www.fire.ca.gov/incidents/2024/7/30/pedro-fire Accessed 10/29/2024.

Mariposa County. 2006. Mariposa County General Plan Safety Chapter. https://www.mariposacounty.org/DocumentCenter/View/2934/General-Plan-Vol-1_Chapter-16?bidId= Accessed 6/20/2023

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Mariposa County. 2024. Community Wildfire Prevention Plan. https://www.mariposacounty.org/DocumentCenter/View/97555/2024-Mariposa-CWPP-Update?bidId= Accessed 8/7/2024

CHAPTER 4 ALTERNATIVES ANALYSIS

This chapter considers feasible alternatives to the Proposed Project, along with a No Project Alternative. CEQA requires the consideration of "…a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (CEQA Guidelines §15126.6(a)) These alternatives may be eliminated from further consideration on the grounds of "…**(i)** failure to meet most of the basic project objectives, **(ii)** infeasibility, or **(iii)** inability to avoid significant environmental impacts." (CEQA Guidelines 15126.6 (c)). Accordingly, the discussions that follow examine how potential alternatives relate to the Proposed Project's objectives, the feasibility of those alternatives, and the likelihood that such an alternative would avoid or mitigate significant environmental impacts.

4.1 Meeting Project Objectives/Reducing Environmental Impacts

The objectives of the Proposed Project include:

1. Replacing and expanding capacities of aging underground and surface water, sewer, and electrical utilities infrastructure, including, as necessary, reaches of pipe that are original equipment that date back to the 1970s;
2. Continuing the Merced ID recreation legacy by providing upgrades to existing facilities to meet new and evolving recreation customer demands and upgrading facilities to meet new accommodation standards;
3. Expanding capacities at day use and camping areas, houseboats moorings, and cabin rentals in response to recognized growth trends in recreation facilities' seasonal use, while minimizing potential recreation use impacts to natural, historic, and prehistoric resources; and
4. Modernizing existing recreation areas with new and enhanced features, such as restrooms, adding electric car charging stations, upgrading boat ramps to allow more use during dryer water years, and adding in more fish cleaning and recycling stations.

The Proposed Project is notable in that it is an update and a continuation of current uses. This is highlighted in the language used in its objectives: replacing, continuing, expanding, and modernizing. Most of the work required within the Project footprint is in areas that have already been disturbed by previous development, which limits potential impacts on many environmental resources, including terrestrial special-status species and cultural resources. The scope of the Proposed Project and incorporated MMs for pre-relicensing period, as well as commitments made by Merced ID as part of their FLA intentionally limit these potential impacts; therefore, the number of alternative projects with the potential to "avoid or substantially lessen" impacts is quite small.

4.2 Feasibility of Potential Alternatives

CEQA Guidelines §15126.6(b) discusses the selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly

accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are:**(i)** failure to meet most of the basic project objectives, **(ii)** infeasibility, or**(iii)** inability to avoid significant environmental impacts.

CEQA Guidelines §15126.6(f) notes that the range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making. As defined by CEQA Guidelines §15364, ”feasible” means capable of being accomplished in a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

4.3 Alternatives Presented

The ‘rule of reason’ that governs alternatives analysis in CEQA requires an EIR to examine in detail only the alternatives that the lead agency determines could feasibly attain most of the basic objectives of the project” (CEQA Guidelines §15126.6 (f)). As the Proposed Project would have no significant and unavoidable impacts, and as no alternatives were identified during scoping that meet project goals and meaningfully reduce environmental impacts, the alternatives carried forward in this EIR are limited to the Proposed Project and the No Project Alternative.

4.3.1 Alternatives Not Considered in This Analysis

As has been noted, most of the work required within the Project footprint is in areas that have already been disturbed by previous development, which limits potential impacts on many environmental resources. To meet the goals and objectives of the Proposed Project, applicable alternatives would primarily occur in changes of phasing schedule, which could reduce concentrations of air pollutant emissions, thus reducing impacts on air quality. However, the Proposed Project is already scheduled to stagger construction activities due to availability of funding and the need to maintain access for recreation activities at alternate Merced ID recreation areas (that is, not have all closed at same time). Therefore, a substantial reduction in impacts from such an alternative would be unlikely, and no such alternative is analyzed in the document.

As noted earlier, the Proposed Project primarily represents a continuation of operations currently performed by Merced ID under existing conditions, rehabilitation of existing facilities and minor expansions into areas that have not already been disturbed. Except for the potential access road proposed for new Sherlock Creek facilities (would need to cross BLM managed lands), all sites considered for work under the Proposed Project are currently owned by Merced ID. Many of the recreational uses available at the existing recreation areas rely on access to Lake McClure, so an alternative location for projects proposed at these recreation areas would severely limit their functionality. Alternative locations could be considered for recreation areas, but such alternatives

would include the abandonment of existing facilities and infrastructure and the disturbance of significant acreage that likely is currently undisturbed, which would increase the potential for environmental impacts related to resources such as terrestrial and aquatic biological resources, hydrology and water quality, geology and soils, and cultural resources. As such, alternative locations for the Proposed Project are infeasible and have not been considered further.

Another potential alternative is the removal of the Mack Island Recreation Area project. As noted in the Project Description, Mack Island is currently undeveloped; therefore, any projects on the island would create new disturbances in a previously undisturbed area. Removal of this project would avoid this disturbance and the potential environmental impacts it may cause. However, this EIR evaluated the environmental impacts of the entire project, including Mack Island, and found no significant and unavoidable impacts. In addition, this potential alternative would not meet the objective of expanding capacities at day use and camping areas in response to recognized growth trends in recreation facilities' seasonal use. It is possible that the recreation capacities of the proposed Mack Island development could be distributed to the other existing recreation areas. However, this may introduce or exacerbate environmental impacts at these areas. Therefore, the alternative of removing the Mack Island Recreation Area project is not considered further.

4.4 No Project Alternative

CEQA defines the No Project Alternative as:

> *"When the project involves the revision of an existing land use or regulatory plan, a policy, or ongoing operations, the No Project alternative will be defined as the continuation into the future of the existing plan, policy, or operation. The existing plan, policy, or operations should be assumed to continue and to apply to other projects implemented during the timeframe of the analysis. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan." (CEQA Guidelines Section 15126.6(e)(3)(A))*

Under the No Project Alternative, no improvements beyond existing O&M to existing recreation facilities and utilities infrastructure would occur. Merced ID currently maintains regulatory plans for land use, wildfire, and hazard mitigation. Under the No Project Alternative implementation of these plans would be assumed to continue. Continued operation of the hydroelectric facilities as currently licensed under FERC carries certain requirements relating to seasonal flows as well as management and upkeep of infrastructure to preserve environmental resources and prevent catastrophic failure of infrastructure. Such failures could include losses of public facilities, potable water access, or releases of sewage and could adversely impact diverse environmental resources including water quality, biological resources, susceptibility to wildfire, reduced recreation access and others. The No Project Alternative would maintain conditions required under the existing FERC hydropower licenses; however, it would not expand, rehabilitate, upgrade, or modernize recreation infrastructure, much of which will be required under potential new FERC hydropower licenses. To the extent possible, Merced ID maintains infrastructure in an operable state, but no improvements to recreation facilities may result in neglect of existing recreational infrastructure to its continued deterioration, which may culminate in its eventual abandonment.

Due to the conditions of the current license, the No Project Alternative poses no possible impact to most resources; existing plans and permits regulate operations and protect most environmental

resources. Most of the potential impacts under the Proposed Project occur as a result of construction, specifically ground disturbance. The No Project Alternative would not include additional construction and therefore would have no impacts on Air Quality, Cultural Resources, Paleontological Resources, Geology and Soils, Greenhouse Gases, or Tribal Cultural Resources. Existing license conditions and operations include management plans and/or conditions for Wildfire, Hydrology and Water Quality, and Hazardous Materials. As established previously in Section 3.1, a full examination for the Proposed Project was not required for Aesthetics, Agriculture and Forestry, Energy, Mineral Resources, Land Use and Planning, Population and Housing, Transportation, Utilities and Service Systems, Public Services, and Noise and Vibration. The reasons they were not fully analyzed for the Proposed Project are consistent with the No Project conditions, and as such the preliminary analysis regarding these resources (Section 3.1.3, Resources Not Impacted) remains sufficient for the No Project.

The primary resource that may be impacted under the No Project Alternative would be Recreation, which would experience significant impacts under this alternative. Not expanding, modernizing, and updating recreation areas to reliable standards that can meet growing demand would deprive residents of Merced, Mariposa, and other nearby counties of one of the most affordable, accessible campgrounds and recreation areas in the region. Increased costs of maintaining the existing facilities would likely be incurred, and inadequate maintenance may lead to physical deterioration of the facilities. Further, as discussed previously, abandonment of facilities or catastrophic failures of existing water and sewer systems could occur as a result of the No Project, which could then also result in impacts to Biological Resources, Hydrology and Water Quality, Wildfire, and Geology and Soils in some locations.

It should be noted that the No Project Alternative would also not be viable in the case of FERC granting a new license, as that license would be predicated on Condition 19 from the FEIS, which mandates the implementation of the Recreation Facilities Plan attached to that document.

4.5 Proposed Project Compared to No Project

The Proposed Project is outlined in preceding chapters of this document. It is only addressed here as a specific comparison to the No Project Alternative.

The Proposed Project represents the continued use and update of a series of recreation areas owned and operated by Merced ID. Merced ID has focused on limiting constituent project footprints to previously disturbed ground, which is often occupied by existing improvements. An expansion of recreation facilities may require limited disturbance of additional ground, but most of the improvements suggested in the Proposed Project are linked to Merced ID's ability to accept new FERC hydropower licenses, specifically those actions required by Condition 19 of the FEIS as part of the Recreation Facilities Plan published in 2015. Those few projects that are not mandated as part of the Recreation Facilities Plan are minor in scope and are reasonable extensions of the intent of that plan, with minimal disruption of new space.

CHAPTER 5 OTHER CEQA CONSIDERATIONS

5.1 Overview

This chapter includes the following discussions and analyses required by CEQA:

- Cumulative impacts
- Growth-inducing impacts
- Significant and unavoidable environmental impacts
- Significant irreversible environmental impacts
- Environmentally Superior Alternative

5.2 Cumulative Impacts

The CEQA Guidelines section 15130 states that an EIR shall discuss cumulative impacts such that when a Proposed Project's impacts are considered in conjunction with closely related past, present, or future projects, or when a Proposed Project's individual impacts are considered together, incremental effects of the Proposed Project's impacts maybe individually minor but cumulatively considerable. Past, present, and reasonably foreseeable future projects in the vicinity of the Proposed Project were compiled and considered to determine if the potential for new impacts or cumulatively considerable impacts when added to the Proposed Project's impacts could be anticipated. The list of local, additional projects includes only those within and around the Project Area.

5.2.1 Approach to Cumulative Analysis

Significant cumulative impacts would occur if impacts related to the implementation of the Proposed Project, combined with the environmental impacts of projects listed above, would result in a significant impact. To be considered a cumulative impact, the additional project's incremental impacts or potential incremental impacts must be related to the types of impacts caused by the Proposed Project and evaluated in Chapter 3 *Environmental Impact Analysis*. Therefore, the following analysis focuses on considering the potential for operations impacts identified in Chapter 3 *Environmental Impact Analysis* to make a considerable contribution to significant cumulative impacts. However, some of the resources have the potential to incur temporary, short-term impacts during the construction period. The potential cumulatively considerable impacts on these resources during construction, in combination with potential impacts from the local, additional projects described, are discussed below.

5.2.2 FERC Relicensing-Associated Projects

The Proposed Project includes supplemental analysis intended to support the procurement of new FERC hydropower licenses for Merced Falls and Merced River projects. The analysis above considered both with and without acceptance of new licenses. No additional relicensing-associated projects would be expected to add new or cumulatively considerable impacts when considered with the Proposed Project.

Activities and projects related to issuance of new FERC licenses for Merced Falls and Merced River hydropower projects could result in incremental impacts associated with those projects. However, as this document is being incorporated by reference into the analysis for acceptance of new FERC licenses, assuming acceptance of the new licenses, all reasonably foreseeable impacts associated with the Proposed Project coupled with other FERC license requirements will be evaluated and disclosed as part of the hydropower licensing Initial Study. That analysis will contain all information within this document and additional analysis related to other anticipated license conditions, including potential impacts to aquatic resources and hydrology and water quality not addressed in this Recreation PEIR.

Exchequer Mountain Bike Park

The Exchequer Mountain Bike Park is situated between the Barret Cove Recreation Area and the McClure Point Recreation Area, on the mainland west of the proposed Mack Island Recreation Area. The primary activities in the project were the creation of over 40 miles of bike trails and associated activities, including the creation of paved access roads, parking lots, and upgrades to existing trails. Additional phases to expand the bike park are anticipated to occur.

5.2.3 FERC License-Related Projects

Exchequer Mountain Bike Park

The area of the Proposed Project located west of the proposed Mack Island Recreation Area, between the Barrett Cove and McClure Point recreation areas is a footprint that is shared with the Exchequer Mountain Bike Park. Potentially significant impacts under the Exchequer Mountain Bike Park IS/MND (2016) were discovered relating biological and cultural resources by Merced ID, as the CEQA Lead Agency. Mitigation for these impacts was related only to the construction phase of the project as operations provide limited change from environmental baseline. Future phases for expansion to the bike park could require additional CEQA analysis by Merced ID; however, the work that would occur would be anticipated to be limited to the immediate area of the existing bike park, and there would be little overlap in footprints of disturbance for the Proposed Project and future phases of the Exchequer Mountain Bike Park. Further, since Merced ID is CEQA Lead Agency for both projects, Merced ID would coordinate the timing for future bike park expansions with implementation of the larger Proposed Project. As such, there would be no cumulative impact related to the Exchequer Mountain Bike Park.

5.3 Growth Inducing Impacts

Section 15126 of the CEQA Guidelines requires an EIR to discuss how a project, if implemented, could induce growth and what the impacts of that induced growth could have. CEQA requires the EIR to discuss the ways a project could foster growth through direct or indirect construction of housing, population growth, or economic growth. Growth may be beneficial, detrimental, or of little significance to the environment, however, CEQA does not require separate mitigation for induced growth because it is assumed that these impacts are already captured in the analysis of environmental impacts (Chapter 3, *Environmental Impact Analysis*).

According to the CEQA Guidelines, a project would have potential to induce growth if it would do either of the following.

- Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive those services), or through the provision of new access to an area, or a change in restrictive zoning or general plan land use designation.
- Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

5.3.1 Environmental Setting

The Proposed Project consists primarily of land owned by Merced ID, with a small portion of federal land managed by BLM, in unincorporated Mariposa and Merced counties. Permanent residences within the Proposed Project footprint are rare, occurring only in privately owned parcels on Boat Club Drive, just north of McClure Point, and in Horseshoe Bay. These areas are largely built out and have little space for expansion. Other housing within the Proposed Project area are camp host sites, RV sites, or campsites, and as such are temporary by nature.

The towns nearest the Proposed Project are Coulterville about 3 miles from the Horseshoe Bay Recreation Area, Lake Don Pedro about 6 miles from the Barrett Cove Recreation Area, Snelling about 8 miles from the McSwain Recreation Area, and Hornitos also about 8 miles from the McSwain Recreation Area. The nearest large city is Modesto, about 50 miles from Lake McClure.

5.3.2 Potential for Impacts

Growth inducement can lead to environmental effects, such as increased demand for utilities and public services, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, and conversion of agricultural and open space to urban uses. However, if the induced growth is consistent with or provided for by the adopted land use plans and growth management plans and policies for the area affected (e.g., city and county general plans, specific plans, transportation management plans), the secondary effects of such planned growth would have been identified and evaluated through a formal CEQA environmental review process and, as necessary, mitigation would have been adopted to address these effects.

There is very little room for growth within the Proposed Project's footprint. Most of the space dedicated to overnight stays is campground, designed and intended for temporary, seasonal use. No long-term residence or meaningful growth is possible in this environment. Even if improved amenities increase the seasonal occupancy of the recreation areas they maintain a capacity they cannot exceed, as such the maximum population in the campsites would not change. The space dedicated to permanent residences is small and not capable of significant expansion without significant acquisition of new or access to additional federally owned land, which would require its own clearance as a CEQA project. Therefore, the Proposed Project would induce no growth within its footprint.

It is possible, but unlikely, that the improved amenities surrounding Lake McClure and McSwain Reservoir would draw additional residents to surrounding communities. These improvements would not, however, induce growth to the same degree as a new source of employment, transit, or homes is expected to. The improved amenities are not expected to result in any significant influx of new residents to neighboring communities and predicting any such growth would be speculative.

Perhaps the mostly likely increase in occupancy that could occur from the Proposed Project would be increased use of campsites at associated Recreation Areas. This is not what is usually meant by

induced growth; however, increased seasonal use of Recreation Areas could result in increased demand for utilities and traffic, both of which are considerations in a discussion of Growth Inducement. Notably the Proposed Project includes multiple locations for potential concessionaires the presence of which would reduce the need for recreation area users to travel to access gas, food, or other goods and services that may require travel. Further, these concessionaires will be accounted for in the proposed Utilities Master Plan, and as such will not exceed the service capacity of the Proposed Project or its associated Recreation Areas.

5.3.3 Significant Unavoidable Impacts

A significant and unavoidable impact is an impact that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level under the Proposed Project alternative. The Proposed Project would result in no significant and unavoidable impacts. Significant Irreversible Environmental Impacts
The Proposed Project would have no significant and irreversible environmental changes resulting from the use of nonrenewable resources.

5.4 Environmentally Superior Alternative

The No Project Alternative would result in the fewest potential impacts to the environment, in that there could be less impacts that otherwise may occur to several environmental resources, including Air Quality, Geology and Soils, and Terrestrial Biological Resources. CEQA Guidelines 15126.6 requires that if the No Project Alternative is found to be the environmentally superior alternative, “the EIR shall also identify an environmentally superior alternative among the other alternatives.” (CEQA Guidelines 15126.6 (e)(2)). In this case, the Proposed Project would be the environmentally superior alternative, as no other feasible alternatives are presented.

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Appendix A. 2024 NOP Scoping Report

Appendix B. Site-Specific Environmental Evaluation Checklist (EEC)

Appendix C. 2015 FERC FEIS (Merced River Project) Recreation Plan

Appendix D. Air Quality & Greenhouse Gas Emissions Modeling

Appendix E. Biological Resources Materials

Appendix F. Cultural Resources and Tribal Consultation Technical Memo