US Army Corps
of Engineers ®
San Francisco District

Draft Lake Mendocino Master Plan

Mendocino County, California
U.S. Army Corps of Engineers
San Francisco District
Revised 2019

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APPROVAL

I have reviewed this Master Plan and Environmental Assessment for Lake Mendocino and Coyote Valley Dam for the guidance of future development for recreation and environmental stewardship efforts within the Lake Mendocino Project located near the City of Ukiah, Mendocino County, California.

This Master Plan is technically sound, environmentally acceptable, and is in compliance with ER/EP 1130-2-550, Project Operations, Recreation Operations and Maintenance Policies.

Therefore, I approve this Master Plan for the Lake Mendocino and Coyote Valley Dam Project, subject to updates as needed for the benefit of flood risk management, public use, and environmental stewardship.

_____

Date

_____

Travis J. Rayfield
Lieutenant Colonel
Commander, San Francisco District

Executive Summary

The Lake Mendocino Master Plan (Master Plan) provides the U.S. Army Corps of Engineers (USACE) a vision and direction to manage Lake Mendocino and its resources. The original Master Plan for Lake Mendocino was approved in 1959 and last updated in 1977, and serves as the guiding document for USACE responsibilities to preserve, conserve, restore, maintain, manage, and develop these project lands and associated resources. This revision to the 1977 Master Plan and the associated Environmental Assessment (EA) describe the existing conditions at Lake Mendocino and identify recreational opportunities and measures to preserve and protect natural and cultural resources. The Master Plan also outlines developmental needs, analyzes special problems, and provides guidance on public use, water quality, invasive species, natural areas, and historic properties within the USACE project boundaries.

The Master Plan and EA provide a synopsis of the history of the area and recreational development of Lake Mendocino. This Master Plan presents a comprehensive inventory of natural, cultural, and recreational resources; land use classifications to guide future management; modernization of existing park facilities; resource objectives for each management unit; and an evaluation of existing and future needs required to provide a balanced management plan to improve outdoor recreation opportunities and sustain natural resources. The Master Plan makes recommendations for future improvements to Lake Mendocino's facilities based on the land use classifications. It provides guidance to balance recreation opportunities, flood risk management, and the preservation of natural and cultural resources for current and future generations.

Public participation is an important aspect of the development of the Master Plan. Public scoping meetings were held in the City of Ukiah in February 2018 to kick off the Master Plan process. The purpose of the public meetings was to provide information to the public on the USACE master planning process and to identify the changes and improvements the public would desire to see in the future at Lake Mendocino. Coordination with Tribal partners was also part of the Master Plan development process. Following internal USACE reviews, the Master Plan and EA will be made available for a final public review under the National Environmental Policy Act (NEPA), and official NEPA public meetings will be held before the plan is finalized.

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

APPENDICES

PERTINENT DATA – COYOTE VALLEY DAM

GENERAL	
Location of Coyote Valley Dam	Lake Mendocino, Ukiah, California
Operating and Managing Agency	USACE San Francisco District (Sonoma Water owns storage space for water conservation)
Purposes	Storage for flood risk management, municipal and industrial water supply, irrigation, recreation, and power
Authorization	1950 Flood Control Act, Section 204
Year Construction Started	July 1956
Year Dam Placed in Operation	January 1959
Drainage Area	105 square miles on the East Fork of the Russian River
Flows at Dam Site:	
Mean annual	221,800 cubic feet per second (cfs)
Maximum of record	46,500 cfs
Standard project peak discharge	24,800 cfs
MAIN DAM	
Type	Earthen dam
Height	160 feet
Crest elevation	784 feet
Crest length	3,500 feet
Crest width	20 feet
Downstream slope	1Vertical:3Horizontal (V:H)
Upstream slope	1V:4H
SPILLWAY	
Type Gate	Fixed crest-channel control
Crest Elevation	764.8 feet
Crest Width	200 feet
Maximum water surface, spillway design flood	779.6 feet
Maximum discharge, spillway design flood	30,200 cfs
LAKE	
Elevation	737.5 feet
Gross Pool	764.8 feet
Spillway design flood pool	779.6 feet
Guide taking line (flowage easement)	806 feet
Surface Area	1,822 acres
Storage Capacity	122,500 acre-feet
Length of spillway at gross pool	6.8 miles
OUTLETS	

Type	Single Conduit
Gates	3 pairs, 5 feet by 9 feet in tandem
Capacity	6,500 cfs
Inlet elevation	637 feet
Conduit diameter	12.5 feet
HYDROELECTRIC POWER PLANT	
Operating and Maintaining Agency	The City of Ukiah operates and maintains the hydroelectric power plant. The power plant began operations in 1986.
Generator Capacity	3.5 megawatts
Turbine/generator units	1,000 kilowatt unit and 2,500 kilowatt unit

ACRONYMS

ARPA	Archaeological Resources Protection Act
CEQA	California Environmental Quality Act
CDFW	CA Department of Fish and Wildlife
cfs	Cubic Feet per Second
CVD	Coyote Valley Dam
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EOPs	Environmental Operating Principles
EP	Engineer Pamphlet
ER	Engineer Regulation
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FY	Fiscal Year
FONSI	Finding of No Significant Impact
HQUSACE	Headquarters, United States Army Corps of Engineers
LMHPP	Lake Mendocino Hydroelectric Power Plant
MU	Management Unit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
OHP	Office of Historic Preservation
OMP	Operational Management Plan
ORV	Off-Road Vehicle
SHPO	State Historic Preservation Officer
SCORP	Statewide California Outdoor Recreation Plan
SIP	State Implementation Plan
SW	Sonoma Water
USACE	United States Army Corps of Engineers
USC	U.S. Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VERS	Visitation Estimation and Reporting System

CHAPTER 1 – INTRODUCTION

1.1 PROJECT AUTHORIZATION

The Lake Mendocino and Coyote Valley Dam (CVD) project was authorized by the Flood Control Act of 1950 as part of the initial state of an adopted comprehensive plan for improvement of the Russian River for the primary purposes of flood risk management and water conservation. Recreational development was added to the project under provisions of Section 4 of the 1944 Flood Control Act and Headquarters, U.S. Army Corps of Engineers (HQUSACE) guidance in letter ENGCW-Y, 5 August 1965, subject: Implementation of the Federal Water Project Recreation Act (Public Law 89-72) in Previously Authorized Projects.

1.2 PROJECT PURPOSE

Flood Risk Management

Lake Mendocino is the reservoir resulting from construction of the CVD and is regulated for water supply and flood risk management. Construction of the CVD began in July 1956 and was completed in January 1959. The project consists of a 160-feet-high earth-filled dam and a reservoir with a storage capacity of 122,500 acre-feet. The concrete spillway structure is located 0.6 miles southeast of the left abutment of the CVD.

Conservation

Sonoma Water (SW) owns storage space in Lake Mendocino for water conservation, see Table 1. The storage allocation is expected to slightly change over time as sediment accumulates in the reservoir.

Table 1. Original Storage Allocation and Current Storage Allocation of Lake Mendocino[1].

	Original Storage Allocation[2] (acre-feet)	Current Storage Allocation (acre-feet)
Flood control	48,000	48,000
Water conservation	70,000	68,400
Sediment reservation	4,500	100
Gross reservoir storage	**122,500**	**116,500**

Hydroelectric Power

Water in the East Fork of the Russian River above the CVD and Lake Mendocino has been diverted for hydroelectric power generation purposes since the early 1900's. The City of Ukiah

[1] Data in this table is based on surveys conducted by Towill, Inc. in April 1994.

[2] Data from Design Memorandum No. 2 Hydrology and Hydraulic Analysis (1954) and the original Water Control Manual (1959).

operates a hydroelectric power plant, the Potter Valley Project, located at the base of the CVD. Operation of the power plant is independent of the CVD operation.

Recreation

Lake Mendocino is a destination for recreational uses such as camping, swimming, hiking, fishing, and boating. The demand for recreational opportunities has increased over the past several decades as the surrounding population has increased. New recreational facilities have been established at Lake Mendocino to support increased interest in recreation, and proposed activities and facilities are recommended in this Master Plan.

1.3 WATERSHED AND PROJECT LOCATION

Lake Mendocino is located on the East Fork of the Russian River, within the Coyote Valley, just outside the City of Ukiah in Mendocino County, California (see Map 1). The drainage area above the CVD is about 105 square miles, and the topography ranges from flat valley land downstream to mountainous areas in the headwater region.

1.4 PURPOSE OF THE MASTER PLAN

Master Plans are utilized at Civil Works projects and other fee-owned lands for which the U.S. Army Corps of Engineers (USACE) has administrative responsibility for management of natural and historic resources. The Master Plan provides a programmatic approach to the management of all of the lands included within the Lake Mendocino boundary. The Master Plan is the basic guiding document outlining the responsibilities of USACE, pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands and associated resources. The Master Plan is a planning document anticipating what could and should happen, with the flexibility to adapt to changing conditions over the life of the plan. Detailed management and administration functions are handled in the Operational Management Plan (OMP), which translates the concepts of the Master Plan into operational terms.

According to Engineer Pamphlet (EP) 1130-2-550, the primary goals of the Master Plan are to prescribe an overall land management plan, resource objectives, and associated management concepts that: (1) Provide the best possible combination of responses to regional needs, resource capabilities, suitability, as well as public interests consistent with authorized project purposes; (2) Contribute to a high degree of recreation diversity within the region; (3) Emphasize the particular qualities, characteristics, and potential of the project; and, (4) Exhibit consistency and compatibility with national objectives and other state and regional goals and programs.

The Master Plan identifies recreational opportunities and measures to preserve and protect natural and cultural resources. The Master Plan also outlines development needs, analyzes special problems, and provides guidance on public use, water quality, invasive species, natural areas, and historic properties within USACE project boundaries. The Master Plan does not address reservoir water levels or operations of the CVD.

The purpose of this Master Plan is to review existing land uses and resources within the Lake Mendocino project area, describe the needs and desires of community stakeholders, prescribe

land use classifications, and identify resource and land use objectives. The Master Plan is the USACE's guide for management of Lake Mendocino's natural resources.
The Master Plan is intended to be a guide for the development and management of all land and water resources of the project area. The existing recreational, ecological, geological, topographic, and water resources have been reevaluated for the purpose of the Master Plan. Recommendations for recreational opportunities and land use, based upon the best possible use of available resources with respect to recreational demand and the relationship to the flood risk management and water supply operation of the dam, are included in the Master Plan.

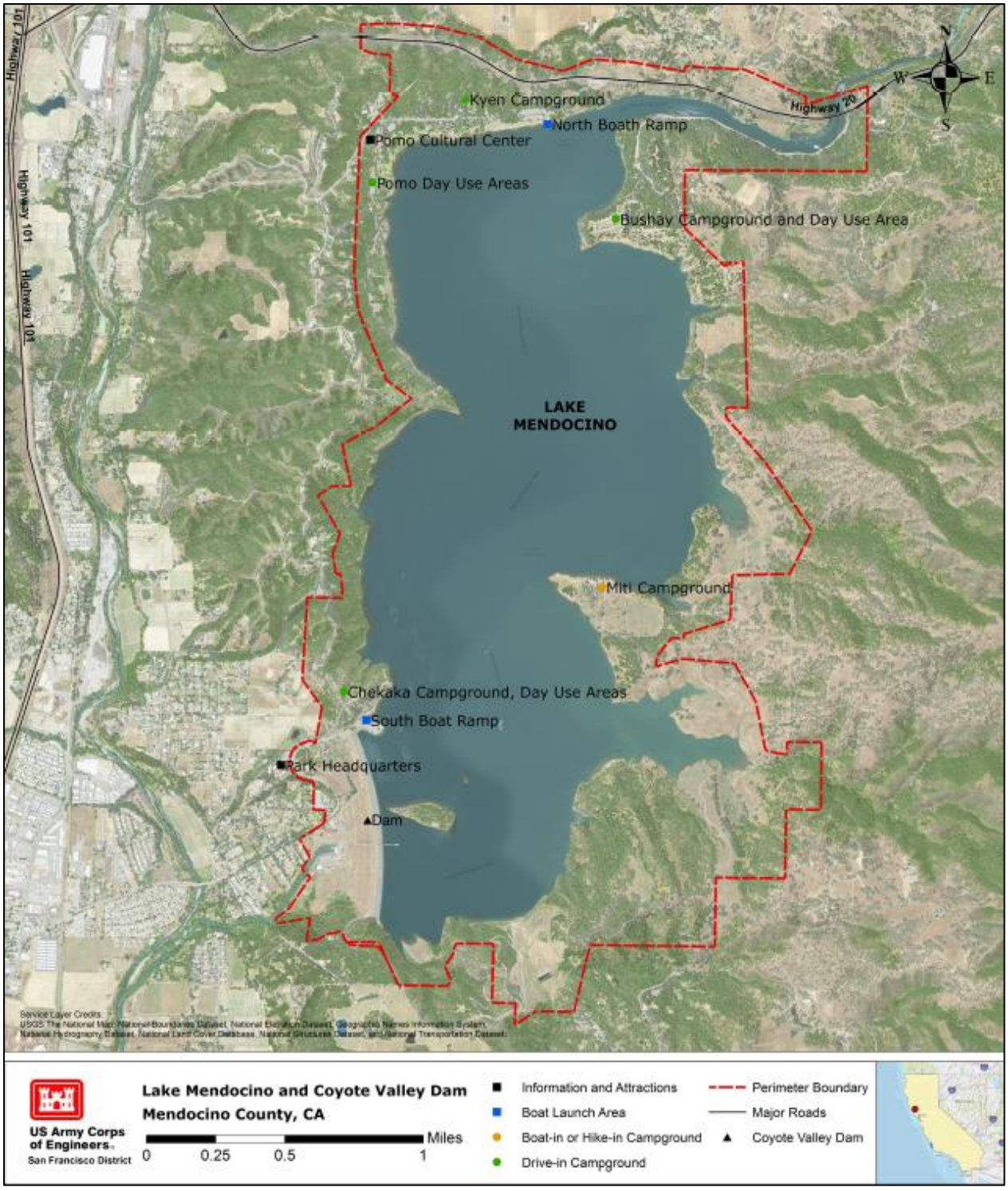
This Master Plan summarizes existing facility development and will serve as a guide for the recreation and resource management of the total project. The plans for future development will serve as a guide for the preparation of additional detailed plans. A concise review of the Master Plan should be conducted every 5 years to assess the need for possible supplementation or revision to accommodate changing conditions of the project or changing recreational interests of the public.

1.5 MASTER PLAN HISTORY AND REVISION

An initial Master Plan was developed for public recreational development in March 1959, prepared by Mendocino County and later adopted by USACE. At that time, the Federal Government had leased the Lake Mendocino area (approximately 3,000 acres) to Mendocino County, in accordance with the Master Plan. This plan recommended that USACE develop the essential public use facilities and that the development of other non-essential recreational facilities be the responsibility of Mendocino County.

USACE eventually assumed total responsibility from Mendocino County for the development of the recreational facilities proposed in the 1959 Master Plan. Consequently, USACE prepared supplements to the 1959 Master Plan, listed in Table 2, as a basis for preparation of construction plans. The Lake Mendocino Master Plan was last updated in January 1977.

The revision to the 1977 Master Plan provides an updated land management plan and resource objectives. It focuses on the management of land and water surface for recreation purposes and the environmental stewardship of natural and cultural resources. The Master Plan does not make recommendations related to the operation and management of the CVD, and it is independent of the USACE Coyote Valley Dam Restoration Feasibility Study.



Map 1. Lake Mendocino and Coyote Valley Dam Project Area.

Table 2. Supplements to Original Master Plan Dated March 1959 for Purpose of Construction of Recreational Facilities[3].

Supplement	Date Approved	Recreation Area	Initial Facilities	Future Facilities
Supplement A – Part I	April 1960	Chekaka Area (2)	Boat launch ramp and parking area	Expansion of parking area
Supplement A – Part II	July 1961	Bushay Area (5)	Access road from Highway 20 to Bushay Area	N/A
Supplement B – Part I	December 1962	Bushay Area (5)	Picnic and camp area (areas A, B, C)	Camp Area (area D)
Supplement B – Part II	March 1963	Updating of Master Plan for all areas	N/A	N/A
Supplement B – Part III	May 1965	Pomo Day Use Areas (3)	Access road, swimming beach, parking areas, restrooms and picnic shelters in sites A and B	Access roads, parking areas, restroom, and picnic sites in site C
Supplement B – Part IV	November 1968	Kyen Area (4)	Camp areas A and B	Camp area C

[3] A list of prior design memoranda for project facilities, as required by EP 1130-2-550, is not available.

1.6 APPLICABLE LAWS AND POLICY GUIDANCE

The following are a few of the major Federal laws and USACE regulations and guidance pertinent to the Master Plan. For a more comprehensive list, see Appendix A. Public Laws.

The Flood Control Act of 1944, Section 4, as amended (16 U.S.C. 460d) authorizes USACE to construct, maintain and operate public park and recreation amenities at water resource development projects; to permit construction of such amenities by local interests; to permit the operation and maintenance of such amenities by local interests; and to grant leases for public park and recreational purposes on Federally-owned lands controlled by USACE, including structure or amenities thereon. Preference for use is given to Federal, state, or local governmental agencies. The authority to issue licenses is included under this authorization and may be granted without monetary consideration.

The National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. §§ 4321 *et seq.*) provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential of environmental impacts of their proposed actions. Under NEPA, a Federal agency prepares an Environmental Assessment (EA) describing the environmental effects of any proposed action and alternatives to that action to determine if there are significant impacts requiring development of an Environmental Impact Statement (EIS) or if a Finding of No Significant Impact (FONSI) is appropriate. The EA must identify measures necessary to avoid or minimize adverse impacts, and all impacts must be reduced to a level below significance in order to rely upon a FONSI.

The Migratory Bird Treaty Act, as amended (16 U.S.C. §§ 703-712) prohibits the taking or harming of any migratory bird, living bird, any part of the bird, or bird eggs without an appropriate Federal permit.

The Federal Water Project Recreation Act of 1965, as amended (16 U.S.C. §§ 460*l*-12 to 460*l*-21), requires that recreation and fish and wildlife enhancement be given full consideration in Federal water development projects. The Act authorizes the use of Federal water resource project funds for land acquisition in order to establish refuges for migratory waterfowl.

The Clean Water Act (CWA), as amended (33 U.S.C. §§ 1251-1387) authorizes water quality programs; requires certification from the state water control agencies that a proposed water resource project is in compliance with established effluent limitations and water quality standards (Section 401); establishes conditions and permitting for discharges of pollutants under the National Pollutant Discharge Elimination System (Section 402); and requires that any non-USACE entity acquire a permit from USACE for any discharges of dredged materials into the waters of the United States, including wetlands (Section 404).

The Clean Air Act, as amended (42 U.S.C. §§ 7401-7671q), establishes Federal standards for seven toxic air pollutants. It also establishes attainment and maintenance of National Ambient Air Quality Standards (Title I), motor vehicles and reformulation (Title II), hazardous air

pollutant (Title III), acid deposition (Title IV), operation permits (Title V), stratospheric ozone protection (Title VI), and enforcement (Title VII).

The Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §§ 1531 et seq.), protects threatened and endangered species, as listed by the United States Fish and Wildlife Service (USFWS), from unauthorized take, and directs Federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Section 7 of the Act defines Federal agency responsibilities for consultation with the USFWS. The Archaeological and Historic Preservation Act, as amended (16 USC 469), requires that Federal agencies consider the effect of their undertakings, including any Federally-licensed activity or program, on historic American sites, buildings, objects, and antiquities of national significance when taking actions that include, but are not limited to, flooding, the building of access roads, relocation of railroads or highways, and other alterations of the terrain caused by the construction of a dam.

The National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. §§ 470 et seq.), requires that Federal agencies consider the effect of their undertakings, including Federally licensed activities or programs, on properties eligible for the National Register of Historic Places. Under Section 106 of the National Historic Preservation Act, a Federal agency establishes an undertaking and determines whether Section 106 review is needed for the proposed undertaking. If it is determined that Section 106 review is needed for the established undertaking, the Federal agency then works to identify potential historic properties by defining the Area of Potential Effects (APE) and working with the State Historic Preservation Office and interested Native American tribes to survey for any potential cultural resources within the APE. The Federal agency then works to assess whether or not the proposed undertaking will result in any adverse effects to historic properties within the APE. If it is determined that the proposed undertaking will result in adverse effects to historic properties, the Federal agency then works to either avoid or minimize those effects through the development of an agreement document.

The Section 106 process will be followed prior to the authorization of any projects that result from the implementation of the Lake Mendocino Master Plan Revision. This means that future projects will either be designed in such a way that they do not damage or otherwise impact significant cultural resources; or the damage they may cause will be mitigated. Section 110 requires that Federal agencies be good stewards of the cultural resources located on their lands. This includes a responsibility to maintain and preserve any historic structures, to conduct surveys to identify cultural resources on their lands and evaluate the significance of those resources.

Regulatory Framework

Federal Regulations

The NHPA of 1966 and its implementing regulations require projects conducted by a Federal agency, on Federally owned land, or involving Federal permits, grants or loans to evaluate the effects on historic properties including eligibility or listing on the National Register of Historic Places, and afford the Office of Historic Preservation (OHP) an opportunity to comment on these actions.

The National Register of Historic Places lists districts, sites, buildings, structures, and objects 50 years of age or more with significance in American history at the local, state, or national level, that meet one of the following criteria:

- association with events that made a significant contribution to the broad patterns of history;
- associated with the lives of persons significant to our past;
- embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- yielded, or may be likely to yield, information important in prehistory or history.

The Archaeological Resources Protection Act (ARPA) (16 USC 470 et seq.), of 1979 recognizes the importance of the Nation's heritage of archaeological resources on public and Indian lands, and sets forth a process for permitting the excavation or collection of archaeological resources on public or Indian lands and establishes criminal penalties, including fines and incarceration, for the unauthorized excavation or collection of such resources.

The American Indian Religious Freedom Act (AIRFA) (42 USC 1996), of 1978, protects the rights of Native American to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites.

The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001 et seq.), is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items – human remains, funerary objects, sacred objects, or objects of cultural patrimony – to lineal descendants, and culturally affiliated Indian tribes and Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and tribal lands, and penalties for noncompliance and illegal trafficking. In addition, NAGPRA authorizes Federal grants to Indian tribes, Native Hawaiian organizations, and museums to assist with the documentation and repatriation of Native American cultural items, and establishes the Native American Graves Protection and Repatriation Review Committee to monitor the NAGPRA process and facilitate the resolution of disputes that may arise concerning repatriation under NAGPRA.

State Regulations

The California Environmental Quality Act (CEQA) requires evaluation and mitigation of the effect of development on historical resources, including eligible or listed historic resources on the National Register of Historic Places, California Register, State Landmarks, Points of Historical Interest, and properties designated under a local preservation ordinance or identified in a local historic resources inventory. An archaeological site may also be considered an historic resource if significant to the history of California, if it meets the criteria for eligibility or listing on the California Register, or if determined to be a "unique archaeological resource."

USACE and other Federal agencies are not required to comply with CEQA; however, if a USACE action requires a permit or funding from a non-Federal agency, that agency may need to comply with CEQA.

Since 1971, CEQA has undergone significant changes affecting the reliability of resource studies. In 2001, the definition of historic era cultural resources was changed, from 100 to 50 years. The definition of cultural resources and archaeological sites also changed. Before the mid-1980s, historic era cultural resources less than 100 years old were not routinely recorded or included in reports. Therefore, as a rule of thumb, it is prudent to consider earlier reports as possibly inadequate in this regard.

The California Historical Resources Information System is the statewide system for managing information on historical resources in California. The Northwest Information Center at California State University, Sonoma is consulted by those with environmental review responsibilities in Mendocino County.

The State's OHP has primary responsibility for the administration of historic preservation programs in California through *California's Comprehensive Statewide Historic Preservation Plan* and other laws and regulations.

The Americans with Disabilities Act of 1990, as amended, (42 U.S.C. §§ 126 et seq.), prohibits public entities, defined as any state or local government, or division thereof, from excluding any individual with a disability from participation in or be denying the benefits of the services, programs, or activities of a public entity, or being subjected to discrimination by any such entity. A "qualified individual with a disability" is an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity.

Easements for Rights of Way, as amended (10 U.S.C. §§ 2688), authorizes USACE to issue easements for rights-of-way over, in, and upon Federal land controlled by USACE when such use will not be against the public interest.

Engineer Regulation (ER) 1130-2-550, Recreation Operations and Maintenance Policies, 15 Nov 1996, as amended establishes the policy for management of recreation programs and activities, and for the operation and maintenance of USACE recreation amenities and related structures, at civil works water resource projects. Chapter 3 of this regulation calls for preparation and implementation of project Master Plans and OMPs.

CHAPTER 2 – PROJECT SETTING AND FACTORS INFLUENCING RESOURCE MANAGEMENT AND DEVELOPMENT

2.1 LAKE MENDOCINO ACCESS

Lake Mendocino is readily accessible from U.S. Highway 101, which is located 2 miles to the west. This section of the highway, known as the Redwood Highway, is the major artery connecting the San Francisco metropolitan area with Federal and state redwood parks in Northern California. State Highway 20, which was relocated during the construction of the CVD, skirts the north shore of Lake Mendocino and connects to Highway 101. To the east, State Highway 20 crosses the state through Marysville and connects to U.S. Highway 80, which is a national east-west route.

Public access roads within the Lake Mendocino project boundaries are designed and maintained to provide maximum safety to pedestrians and traffic. The roads accessing the campgrounds and day use areas were intended to provide minimum disturbance to the terrain and provide safe grades, clearance and visibility. Lake Mendocino Drive also has one of the major existing bikeways in Mendocino County[4].

2.2 DESCRIPTION OF THE RESERVOIR

Land Ownership History

A recreation area consisting of 2,992 acres was leased from the Federal Government by the County of Mendocino on 1 July 1959 to be developed in accordance with a Master Plan. The County in turn entered into a concessionaire agreement with a private corporation to accomplish such development. The original lease agreement was amended on 9 February 1960 and on 9 June 1963, reducing the amount of land leased by 300 and 1,534 acres, respectively.

Difficulty in meeting the terms of the agreement resulted in the termination of the lease with Mendocino County in May 1966, and reversing the ownership of the land to the Federal Government. At that time, occupants of the land were given 6 months' notice to remove their property. One sub-concessionaire in the Kyen Recreation Area refused to comply and continued to occupy Federal property for a period of 2 years without a lease from either the county or Federal Government. The Federal Government pursued legal action against the sub-concessionaire and regained possession of the property in June 1968. Mendocino County constructed a boat launching ramp and parking area with funds provided by the State of California Wildlife Conservation Board. Mendocino County relinquished this area to the Federal Government on 13 May 1969.

[4] PMC 2009. The County of Mendocino General Plan.

Since that time, the development and the operation of all facilities at Lake Mendocino have been the responsibility of USACE. Management of the CVD and Lake Mendocino was transferred from the San Francisco District to the Sacramento District in the early 1980's; management was then transferred back to the San Francisco District in the early 1990's. The San Francisco District continues to manage and operate Lake Mendocino and the CVD.

Recreational Facilities Development

Development of recreational facilities at Lake Mendocino began immediately after the completion of CVD. The Federal Government developed an overlook, comfort station, boat launching ramp, parking areas, and fire protection access road. Picnic sites and campsites were programmed several years later when it became known that the county was planning to relinquish its lease to the Federal Government.

Reservoir

The Lake Mendocino reservoir comprises approximately 1,956 acres in Coyote Valley, with a gross pool capacity of 122,500 acre-feet. The East Fork of the Russian River, which originates in the Eel River watershed, flows into Lake Mendocino. A majority of the inflow into Lake Mendocino is regulated by the Potter Valley powerhouse diversion tunnel. Future reductions in this diversion could significantly impact the lake level. The reservoir is owned in fee by USACE.[5]

Embankment

The CVD is a compacted, impervious, earth filled embankment that was constructed in zones, comprising impervious clay and silt materials. The earthen embankment is 160 feet high and has a crest length of 3,500 feet.

Spillway

The spillway for CVD is located 0.6 miles upstream from the left abutment of the dam embankment. There is an approach channel, an un-gated concrete ogee spillway control section, and a discharge channel. The spillway is approximately 1,300 feet long and 200 feet wide. [6]

Outlet Works

The outlet works for Lake Mendocino comprise an approach channel, intake tower, conduit, outlet chute, and an outlet channel. The approach channel extends from the East Fork of the Russian River to the concrete intake structure. The reinforced concrete intake tower is located immediately upstream from the CVD, and is accessible via the dam crest. The tower contains a machinery room, shaft, and a control house. There are three 5 feet by 9 feet hydraulic slide

[5] Source: USACE 2012. Water Control Manual Coyote Valley Dam and Lake Mendocino, Exhibit E: Coyote Valley Dam and Lake Mendocino Operational Requirements for Pre-Food and Periodic Inspections and Maintenance Activities. San Francisco, California.

[6] Source: USACE 1962. Operation and Maintenance Manual for Coyote Dam and Lake Mendocino, Russian River Project, Mendocino and Sonoma Counties, California.

gates located in the control tower. The outlet chute includes a drop structure and stilling basin, and the outlet channel is about 50 feet wide and protected by riprap.[7]

Hydropower

The Lake Mendocino Hydroelectric Power Plant (LMHPP), Federal Energy Regulatory Commission (FERC) Project No. 2841, was completed in December 1986. The FERC issued a license to the City of Ukiah in 1982 to generate hydroelectric power through the CVD. The LMHPP is owned and operated by the City of Ukiah, and is an external facility at the base of the CVD. The City of Ukiah has a 50-year FERC license, issued in 1982, for project operation.

Operation of the LMHPP stalled in 1998 due to the minimum flow requirements for the protection of several fish species downstream, as required by the National Marine Fisheries Service (NMFS). NMFS required that minimum flows be maintained on the river to protect certain fish species, resulting in an inoperable hydroelectric plant based on its design. The City of Ukiah made alterations to the design of the LMHPP and operations of the power plant were resumed in January 2007.[8] The hydroelectric facility was designed to produce three megawatts of power during times of acceptable water flows, which comprises about 10% of the City of Ukiah's overall power production.[9]

2.3 HYDROLOGY (SURFACE WATER, GROUND WATER)

The Lake Mendocino project regulates the natural water runoff from approximately 105 square miles of Coast Range Mountains and from water diversions on the Eel River that are operated by Pacific Gas and Electric Company's Potter Valley Project No. 77, which is located in the Eel River Watershed.

2.4 WATER QUALITY

USACE Water Quality Management Program.

The USACE Water Quality Management Program for Civil Works Projects is described by ER 1110-2-8154, "Water Quality." ER 1110-2-8154 was updated in 2018 and encourages a holistic, ecosystem approach to water quality management. As stewards of a significant percentage of the nation's aquatic environment, USACE has a responsibility to preserve, protect, and, where necessary, restore water quality altered by USACE projects. This requires a comprehensive understanding of the interactions of uses and users of the resource.

[7] Source: USACE 1962. Operation and Maintenance Manual for Coyote Dam and Lake Mendocino, Russian River Project, Mendocino and Sonoma Counties, California.

[8] Source: National Marine Fisheries Service. 2008. Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, Sonoma Water, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed.

[9] Source: PMC 2009. The County of Mendocino General Plan.

Lake Mendocino Water Quality

Flow releases from Lake Mendocino are limited to the low-level flood risk management outlet conduit, where water in the tunnel through the dam can cause hydrogen sulfide related odor issues. Flows can also be released from the power plant and the spillway if the reservoir level exceeds the spillway crest. Aside from odor problems, turbidity is a water quality issue facing Lake Mendocino. Turbidity is typically increased during the first heavy runoff of the year and persists for several months, due to the large amount of fine sediment that is transported through the water diversion on the Eel River. [10] Sampling stations to determine water quality are located at the inlet and outlet of Lake Mendocino and one station is located within the Lake.[11] SW does water testing for temperature and dissolved oxygen during the spring and summer. NMFS monitors the water temperature within the lake and conducts monitoring downstream of the lake.

Lake Mendocino provides drinking water to the Cities of Ukiah, Healdsburg, Cloverdale, and Hopland and is subject to a water right permit under the Russian River Flood Control and Water Conservation Improvement District. This water right permit allows up to 8,000 acre-feet of water to be used for consumption annually[12]. SW is the local cost-sharing partner for Lake Mendocino. Working together to manage the lake levels, SW determines water releases when the water level remains in the water supply pool, while USACE is responsible for managing the releases when the water level rises to the flood control pool of the Lake to ensure flood risk management[13].

2.5 TOPOGRAPHY, GEOLOGY, SOILS, AND SEISMICITY

Topography

The hills to the east of Lake Mendocino are very rugged and continue for many miles. To the west and northwest, the hills are more rounded with benches that were once planted with vineyards. In general, the terrain is in its natural state and the recreational areas are developed on the benches above Lake Mendocino. Most of the western shore of Lake Mendocino is steep and not suitable for development, while the north and northeast shores are mostly flat and have a higher concentration of recreational development (see Map 2). The eastern and southern shores are undeveloped and located within the Wildlife Management Area (see Map 24).

Throughout the California north coast mountain ranges, the dominant structural features are the northwest trending faults and folds, which control the course of the middle and upper Russian River and much of the major drainage and ridge patterns within Mendocino County. Metamorphic rocks of the Franciscan Formation underlie almost all of the area. This formation is characterized by rocks which are fractured and contain numerous faults and local zones of intense shearing.

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[10] Source: USACE, 1986. Coyote Valley Dam and Lake Mendocino Russian River, CA Water Control Manual. Sacramento District, California.

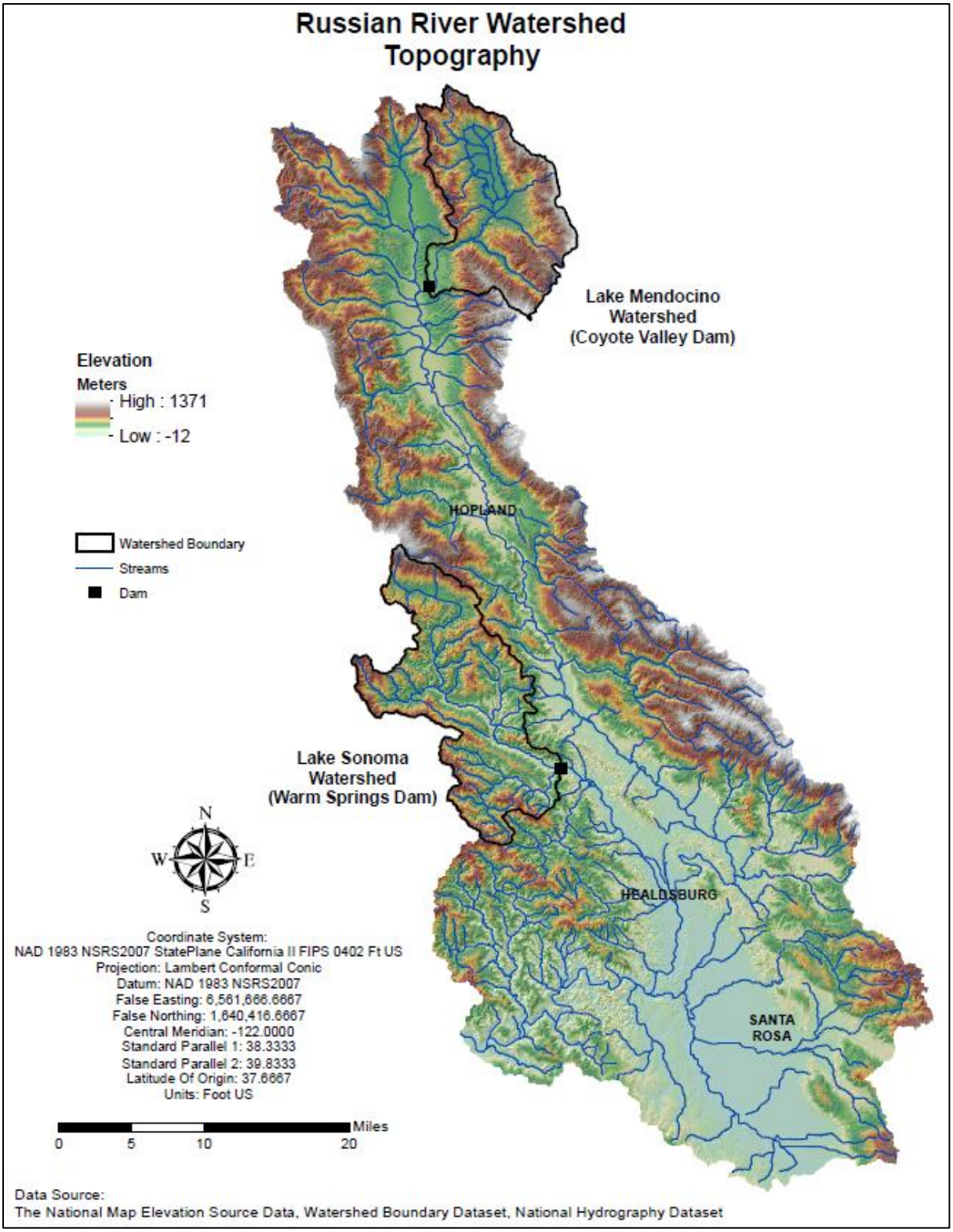
[11] ibid

[12] Source: Mendocino County, 2011. Ukiah Valley Area Plan. Accessed 28 June 2018.

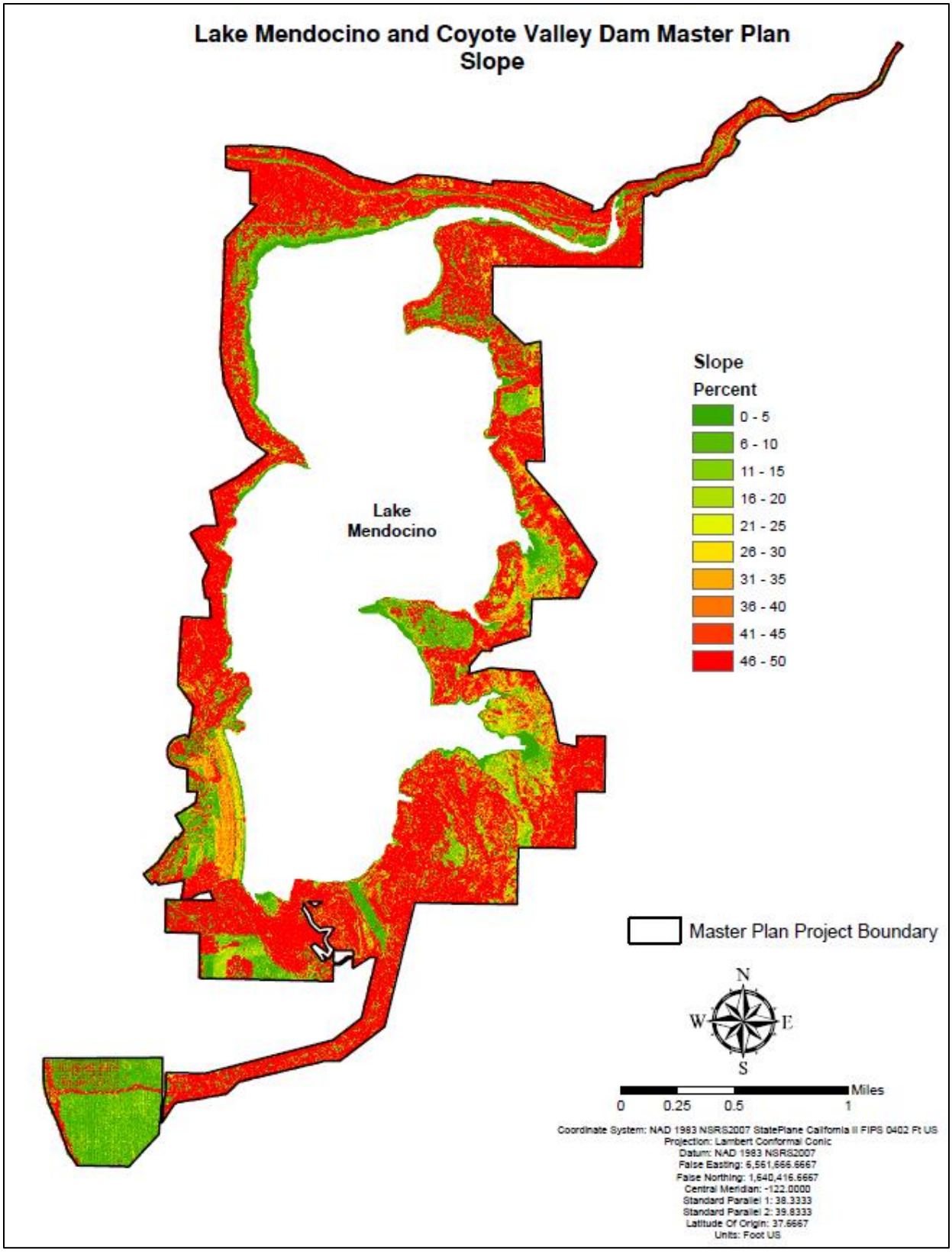
[13] Sonoma Water, 2018. "Reservoir Operations", available at: http://www.scwa.ca.gov/reservoir-operations/. Accessed on 28 June 2018.

The region surrounding Coyote Valley is of moderate relief. Elevations above mean sea level range from about 600 feet in the valleys near Ukiah to about 3,975 feet on top of Cow Mountain, which is east of Lake Mendocino. The lower ridges and hills that divide Coyote Valley from the adjacent valleys are somewhat rounded, but their shape is modified locally by the presence of old terraces. The East Fork Russian River enters Coyote Valley from the northeast through the canyon. Numerous terraces are present on the flanks of the ridges, reflecting earlier erosion and deposition levels of the river (see Map 3 and Map 4Map 4).

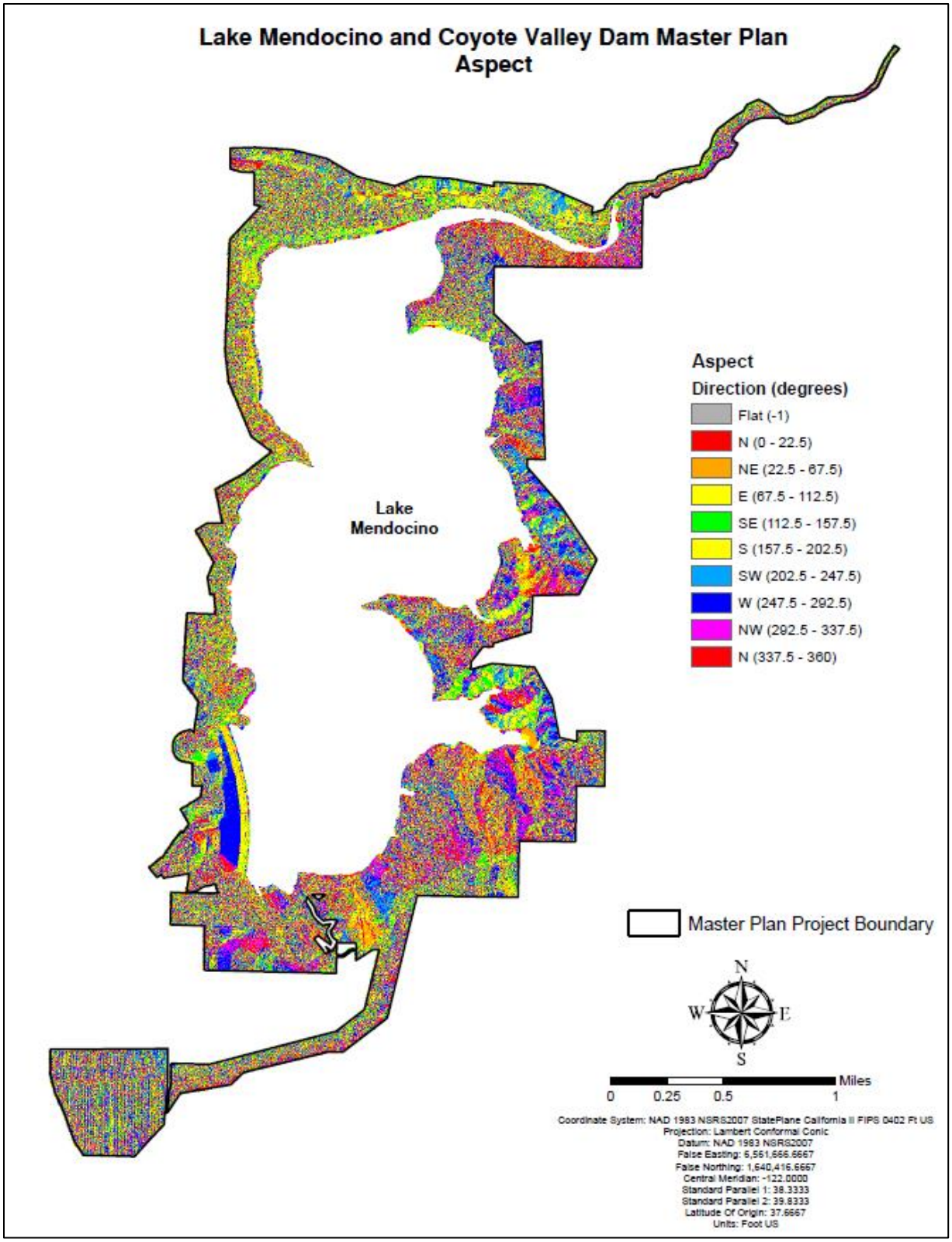
Coyote Valley is a southerly trending valley that is about 1 to 1.5 miles wide by 3 miles long, and lies about a mile east of the Redwood and main Ukiah Valleys. It is flanked by rolling hills that rise 400 feet about the valley floor to the west of Lake Mendocino and abuts against the steeper Franciscan bedrock hills to the east. The upstream end of the reservoir extends north-eastward up the gorge of the East Fork toward the mouth of Cold Creek.



Map 2. Topography of the Russian River Watershed, in which Lake Mendocino is located.



Map 3. Variety of Slopes that are Present at Lake Mendocino.



Map 4. Aspect of Lake Mendocino's Surrounding Lands.

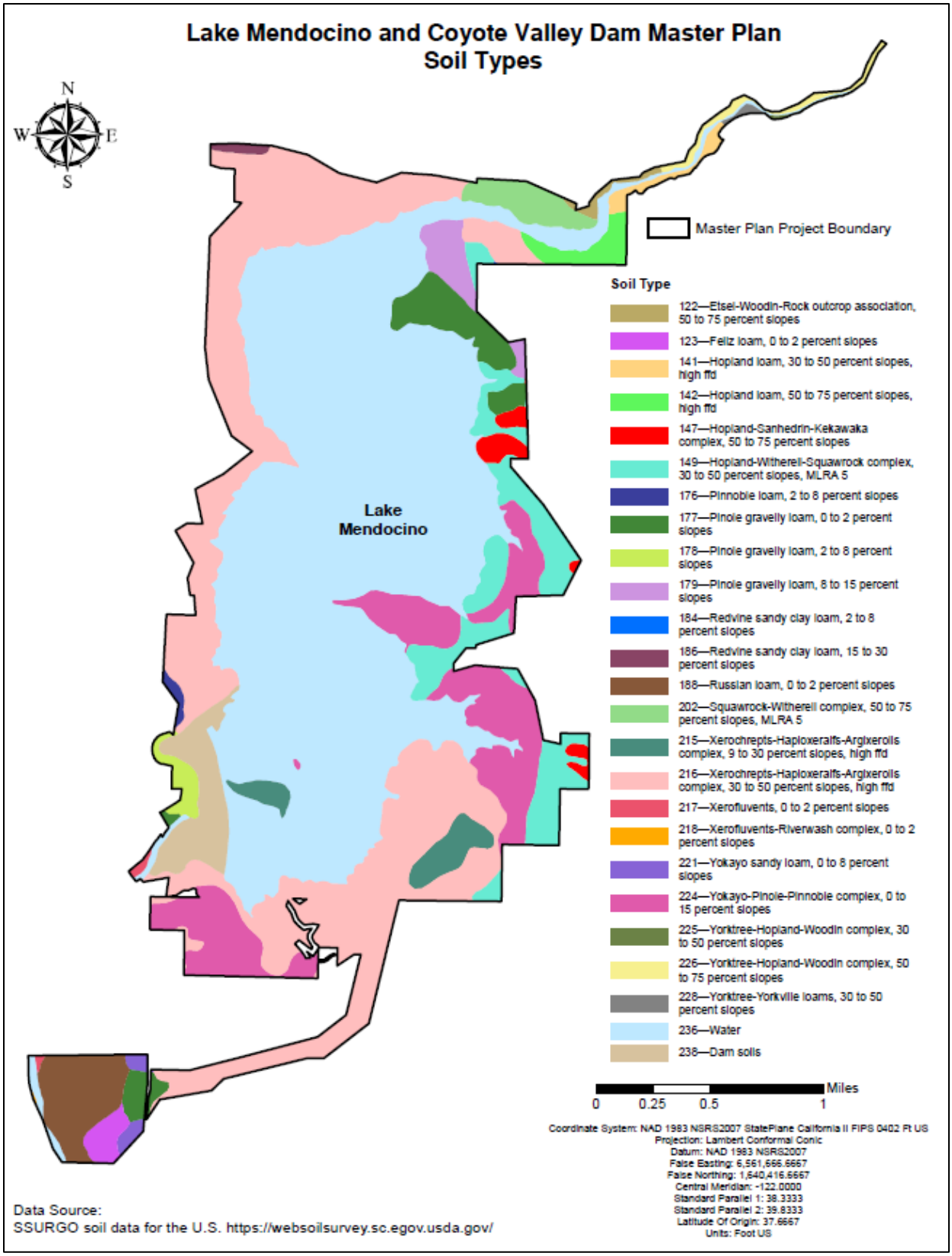
Geology, Soils, and Seismicity

Coyote Valley is underlain primarily by metamorphic rocks from the Franciscan formation. Most of the recreation areas located within the Lake Mendocino boundary have 6 to 12 inches of silt, or sandy silt, overlying the gravelly phase, Older Alluvium. The Older Alluvium is a highly consolidated formation of alluvium deposits consisting of variable mixtures of clay, silt, sand, gravel, and cobbles.

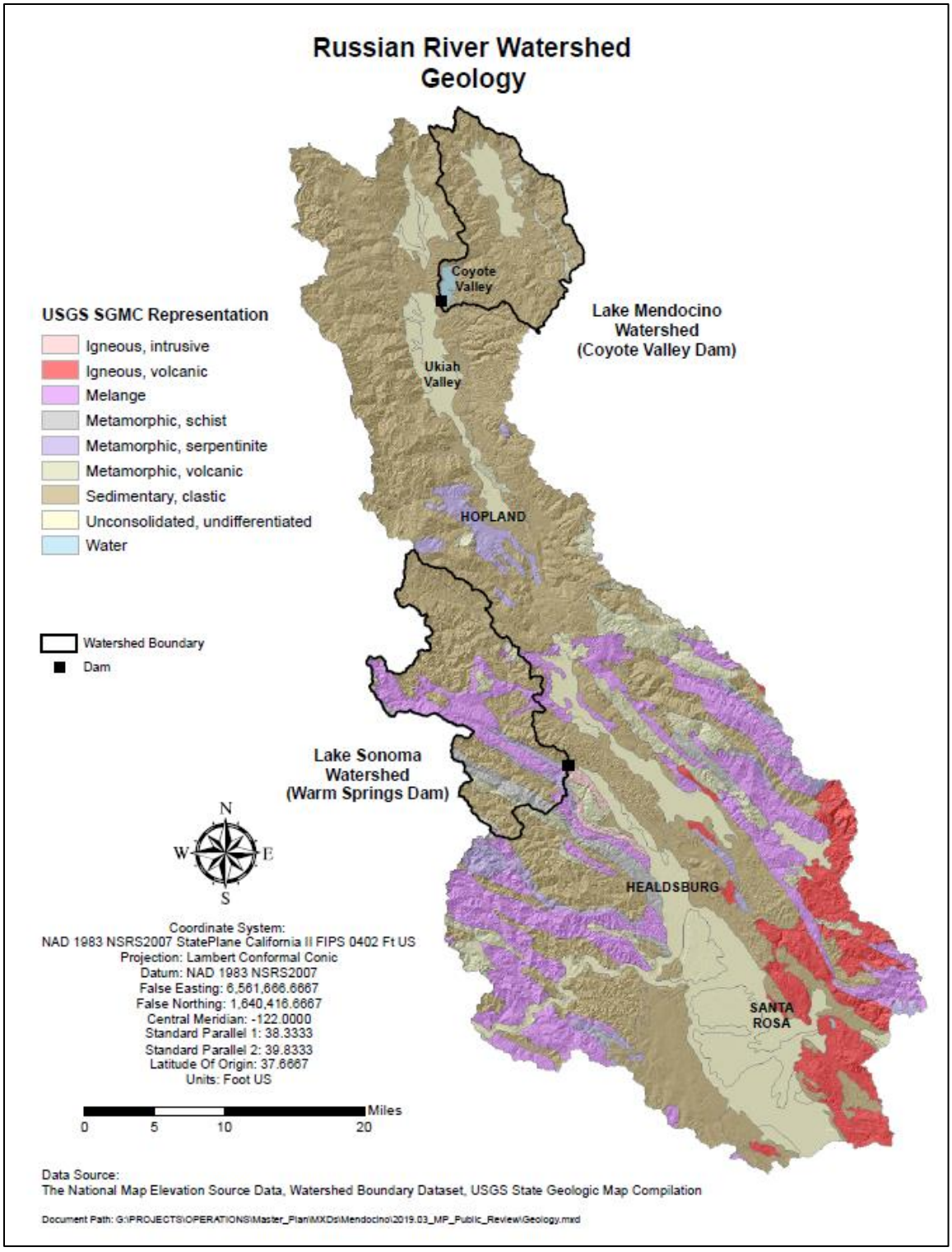
Because of the well-graded composition of the alluvial materials, soils within the recreation areas are well suited for planting turf, trees, shrubs, or ground cover. Soil preparation is required in areas of mowed turf or ground cover. Soil amendments are provided around tree and shrub planting sites as required. Most soils in the project areas are susceptible to heavy erosion (see Map 5).

The geology of the Ukiah Valley is comprised of gravel to sandy sediments that are primarily clayey and sandy gravels that have the characteristic structure of stream deposition (see Map 6). The San Andreas Fault is located about 40 miles west of the Russian River, in addition to two other recognized faults located in the Ukiah region.[14]

[14] Source: USACE, 1986. Coyote Valley Dam and Lake Mendocino Russian River, CA Water Control Manual. Sacramento District, California.



Map 5. Soil Types at Lake Mendocino.



Map 6. Geology of the Russian River Watershed.

2.6 CLIMATE

The climate of the Russian River watershed is mild, experiencing warm, dry summers and cool, wet winters. The close proximity to the Pacific Ocean helps regulate the climate experienced at Lake Mendocino. The temperatures in Ukiah typically range from an annual high temperature of 72.4 degrees Fahrenheit to an annual low temperature of 45.6 degrees Fahrenheit, with an average temperature of 59 degrees Fahrenheit. The average annual precipitation for Ukiah is 40 inches. Precipitation normally occurs between November and April, with winter storms originating from the Pacific Ocean.[15] See Map 7 and Map 8 for the average annual precipitation and the average annual mean temperature for the Russian River Watershed between the years 1981-2010.

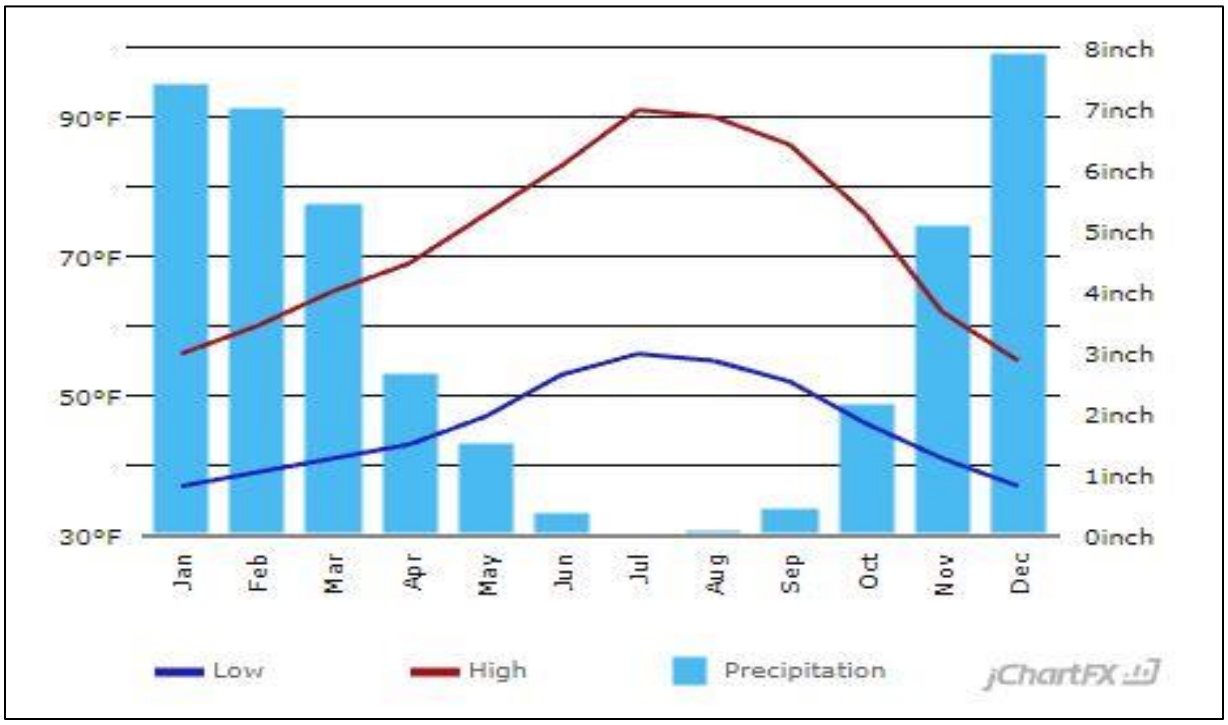
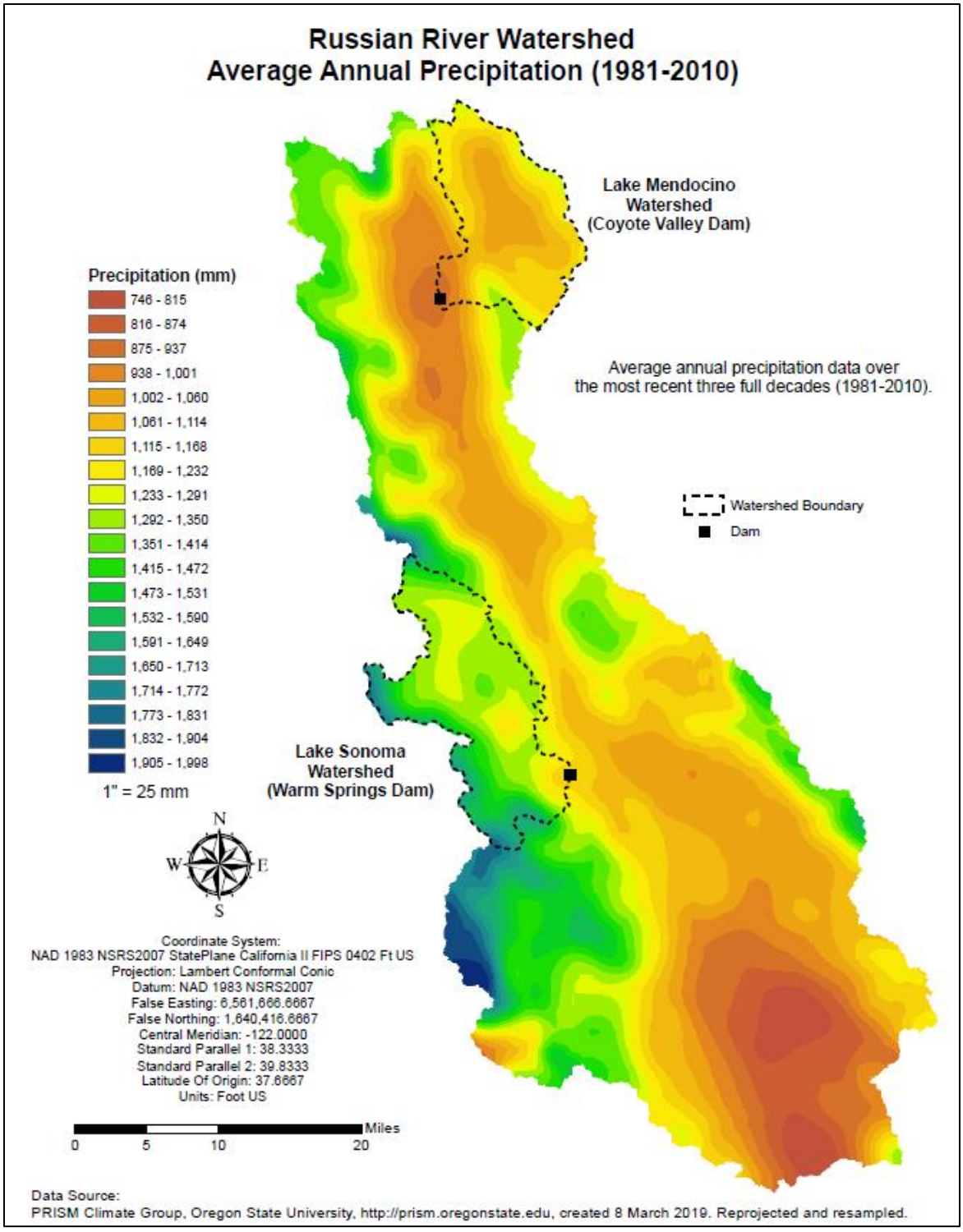


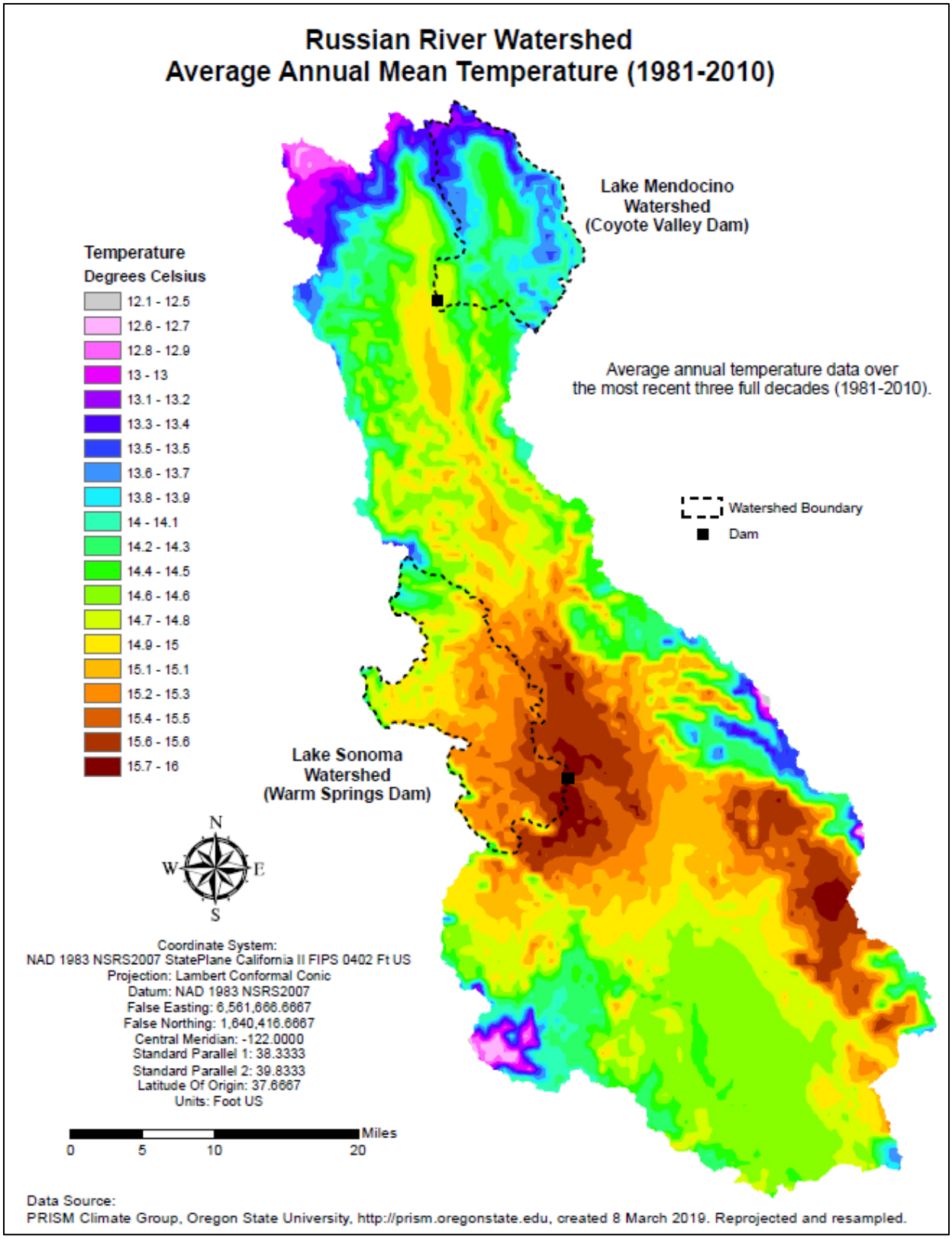
Figure 1. This figure shows average monthly climate data for the City of Ukiah, CA.[16]

[15] Source: U.S. Climate Data-Ukiah, California. https://www.usclimatedata.com/climate/ukiah/california/united-states/usca1176, date accessed May 4, 2018.

[16] Ukiah Weather by Month/Weather Averages. https://en.climate-data.org/north-america/united-states-of-america/california/ukiah-15737/#climate-graph



Map 7. Average Annual Precipitation for the Russian River Watershed from 1981-2010.



Map 8. The Average Annual Mean Temperature for the Russian River Watershed from 1981-2010.

2.7 FISH AND WILDLIFE RESOURCES

Fisheries

Native fish species that currently inhabit, or that have historically inhabited the East Fork of the Russian River, include Steelhead (*Oncorhynchus mykiss*), California Coast fall chinook salmon (*Oncorhynchus tshawytscha*), the Central Coast coho salmon (*Oncorhynchus kisutch*), coastal rainbow trout (*oncorhynchus mykiss irideus*), hardhead (*Mylopharodon conocephalus*), Pacific lamprey (*Entosphenus tridentata*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomas occidentalis occidentalis*), and the Russian River tule perch (*Hysterocarpus traskii pomo*).

Numerous non-native species also inhabit this fork including bluegill (*Lepomis macrochirus*), brown bullhead (*Ameiurus nebulosis*), common carp (*Cyprinus carpio*), golden shiner (*Notemigonus crysoleucas*), green sunfish (*Lepomis cyanellus*), largemouth bass (*Micropterus salmoides*), redear sunfish (*Lepomis microlophus*), smallmouth bass (*Micropterus dolomieu*), and western mosquitofish (*Gambusia affinis*)[17].

Construction of the CVD created a barrier to upstream migration for anadromous salmonids resulting in the loss of spawning habitat above the dam. The Don Clausen Fish Hatchery at Lake Sonoma along with the imprinting ponds and egg collection facility below CVD provide for the release of 40,000 steelhead smelt annually. These releases are to mitigate for the loss of upstream spawning habitat on the East Fork of the Russian River[18].

Fish habitat in the area inundated by the dam has been significantly altered. Summertime temperatures raise the surface water temperature and oxygen is drawn from the cooler deep water, resulting in lowered dissolved oxygen throughout the lake. Water temperatures and oxygen levels no longer support cold water species such as rainbow trout. In addition, reservoir management normally causes 20 feet of annual variation in water levels. This prevents the establishment of emergent and submerged vegetation around the lake perimeter. The resulting lack of cover and food sources has created challenges for fisheries management at the lake. Various methods of providing cover along the shore have been employed in coordination with the California Department of Fish and Wildlife (CDFW), including the placement of brush structures, Christmas trees and concrete tiles.

Common species in Lake Mendocino now include largemouth bass, smallmouth bass, striped bass (*Morone saxatilis*), bluegill, black crappie (*Pomoxis nigromaculatus*), white crappie (*Pomoxis annularis*), channel catfish (*Ictalurus punctatus*), white catfish (*Ictalurus catus*), brown bullhead (*Ameiurus nebulosis*) and a variety of non-game species. Rainbow trout

[17] University of California Davis. 2018. California Fish Website. http://calfish.ucdavis.edu/location/?ds=698&reportnumber=1293&catcol=4712&categorysearch=%27Burright%20Creek-East%20Fork%20Russian%20River-180101100101%27

[18] Lake Mendocino Operational Management Plan, U.S. Army Corps of Engineers, San Francisco District. June 2013. 430pp.

stocked in the river above the lake occasionally migrate downstream for brief periods in the spring and fall, when dissolved oxygen levels in the lake are higher.

Fish Stocking Practices

The CDFW, through their Inland Fisheries Division, has the overall responsibility for the fishery program at Lake Mendocino. The fish management program is supervised by professionally trained fisheries biologists stationed in Ukiah and Redding, California. The goal of the State's fisheries program is to produce the best fishing possible for the maximum number of people. The fisheries management program is geared to test, evaluate and provide a greater variety of fishing opportunities by using techniques to primarily favor native species. USACE policy is to cooperate with and support studies and subsequent fisheries management recommendations of the reservoir fishery biologist where mutually beneficial and consistent with established goals[19].

Lake Mendocino is stocked with largemouth and smallmouth bass, white and black crappie, bluegill, and 3 species of catfish. Striped bass are stocked in years when the local Striped Bass Club has the funding to conduct the stocking.

Wildlife

Federally Listed Wildlife

No Federally listed endangered or threatened species are known to occur at Lake Mendocino other than the steelhead that occur at the fish imprinting facility below the dam.

Habitat around Lake Mendocino supports a variety of wildlife that has shown little significant decrease as a result of recreational development. Although the total area of habitat available to wildlife has been reduced by the lake and its improvements, habitat quality is generally good. The land and its plant associations support populations of Black-tailed deer, predatory and small game species, and a variety of non-game mammals, birds, reptiles, amphibians and insects[20].

<u>Large Mammals</u>

Black-tailed deer are the most prevalent large mammal, with 80 to 140 deer per square mile observed in a CDFW helicopter survey of the wildlife area and adjoining private lands. Deer are most abundant in the oak woodlands within the wildlife area on the east and south sides of the lake. This area is shown in Map 9. Forbs, annual grasses, acorns and palatable shrubs provide ample food.

Irrigated lawns in Bushay Campground are grazed daily by deer. The west side of the lake supports a smaller deer population, limited by private development and thick stands of brush. The north end is sandwiched between highway and lake, and is heavily developed, thus supporting few deer.

[19] ibid
[20] ibid

Many predatory mammals inhabit the interspersed chaparral/oak woodland/grassland plant communities. See Map 9 for the location of the vegetation communities at Lake Mendocino. Occasionally observed are gray fox, coyotes, bobcats, skunks, raccoons and weasels, preying upon abundant small mammal and bird populations. There have been rare sightings of mountain lions and bears, usually on the east side of the lake. Feral domestic cats are prevalent in all the recreation areas, and are trapped and removed as time permits. In fall 1990, a family of river otters was observed in the river inlet and marina area at the north-east end of the lake. The family, consisting of five animals, was seen in Perry Creek Cove in the fall of 1995. One pup was spotted on the Inlet in 2002, and another otter was observed in 2006 just off Jet Ski Beach.

Small Mammals

Many species of rodents are common to all areas of the project. The brushier areas are inhabited by brush rabbits, blacktailed jackrabbits, California Ground squirrels, dusky-footed woodrats, deer mice and opossums. Western gray squirrels, Sonoma chipmunks, brush rabbits, house mice and western harvest mice are frequently observed in the wooded camping areas. Grasslands support pocket gophers, moles, shrews, California voles and the various mice, rats and ground squirrels associated with meadow habitat. Many species of bats are common, preying on the insects attracted by the lake environment. From 1997 to 1998, about a dozen bat boxes were installed, and 10 years later almost all of these are still utilized by bats[21].

Avian Fauna

The project supports varied and abundant avian fauna throughout all seasons of the year. As of 2003, a total of 194 species were sighted at least once.

In the fall and winter months, the lake serves as habitat for migratory waterfowl, such as western and eared grebes, American coots, buffleheads, wood duck, Canada geese, brown pelicans, cormorants, and many other ducks and geese. Feral domestic ducks and geese reside year-round at the north and south-east ends of the lake. These birds pose a management problem as they compete with native species for resources, and may transmit disease and parasites to them.

Great blue herons are year-long residents, while common egrets appear in the winter, summer and fall. Green herons nest in willow groves along the river inlet and outlet.

Osprey fish the lake coves and inlet. As many as six osprey were seen in the summer of 1990. However, today they are not consistently seen. There are no known nesting sites at the lake. Nesting platforms were installed in fall 1990 and to-date the platforms have not been used[22].

In the open grasslands, towhees, Brewer's blackbird, cowbirds, robins, sparrows, goldfinches, meadowlarks, phoebes, king birds, juncos, thrush, kinglets, larks and warblers are all abundant during the various seasons.

[21] ibid
[22] ibid

Ninety bird boxes were installed between 1996 and 1997. About 12 wood duck boxes were also installed at that time. Most of the bird boxes were cleaned out and/or repaired in 2006. The wood duck boxes were utilized more by screech owls than wood ducks[23].

Turkeys inhabit the upland oak woodlands/grasslands, and feed on mast and other seeds from annual and perennial grasses and forbs. Turkeys (*Meleagris gallopavo*) were introduced to the Ukiah area several years ago by the CDFW, and have since become an important game species in the wildlife area. The CDFW by-drawing-only hunts are held in the fall and spring. Fall turkey hunts are less successful as the turkeys cannot be called as easily.

Chaparral-covered hills provide habitat for quail, several hummingbird species, wrentits, wrens, and northern mocking birds.

Oak woodlands support the greatest abundance of predatory birds. Red-tailed hawks, bald and golden eagles, barn owls, screech and great-horned owls feed on larger rodents and rabbits, while sparrow hawks and kites feed on smaller rodents and insects. The oaks provide food and cover for the acorn woodpecker, red-shafted flicker, titmouse, nuthatch and scrub jay. In proximity to intensive use camping areas, starlings, blackbirds, ravens, crows and house finches are more numerous than in other habitats.

Amphibians and Reptiles

Western pond turtles occupy the shallow lake and river areas along with bullfrogs and foothill yellow-legged frogs. Exotic red-eared pond sliders share similar habitat with western pond turtles, and have the potential to displace them. Pacific tree frogs are common on shrubs close to streams or the lake's edge, and during the rainy season salamanders can be found under decaying logs and leaf litter. Western toads live among the vegetation, while newt inhabit the streambeds.

The western fence lizard is the most common reptile seen, and occupies rocky areas along with the western skink. Alligator lizards prefer wooded areas.

Both gopher snakes and the northern pacific rattlesnakes depend heavily on the high rodent population. Rattlesnakes are most common in the primitive areas of the project, but can been seen in other locations as well. The common and mountain kingsnakes feed on small mammals and other snakes. Garter snakes, racers, rubber boas, ringnecked snakes and sharp-tailed snakes are also seen in the park.

2.8 VEGETATION

Vegetation communities identified during the 2011 floristic survey conducted by SC Environmental Inc., as seen in Map 9, include: Ruderal (64.96 acres), Non-Native Grassland (286.43 acres), Native Grassland (2.77 acres), Northern Hardpan Vernal Pool (0.02 acres), Coastal and Valley Freshwater Marsh (0.35 acres), Northern Coyote Bush Scrub (9.42 acres),

[23] ibid

Chamise Chaparral (18.69 acres), Urban Mix (94.82 acres), California Bay Forest (11.39 acres), Interior Live Oak Woodland (532.53 acres), Black Oak Woodland (6.51 acres), Oregon Oak Woodland (20.86 acres), Blue Oak Woodland (189.56 acres), and Upland Douglas Fir Forest (1.08 acres). [24]

Sensitive Communities

Sensitive communities are those of special concern to resource agencies because of their rarity and/or value as wildlife habitat, or those that are afforded specific consideration under Section 404 of the CWA, such as riverine, riparian, marsh, and seasonal wetland habitats, and other applicable regulations. This concern may be caused by the locally or regionally declining status of such habitat, or because they are important habitat to common and special-status species. Many of these communities are tracked in the CDFW Natural Diversity Database, an inventory of the locations and conditions of the state's rarest plant and animal taxa and vegetation types.

A total of five sensitive communities were observed within the study area: Native Grassland, Northern Hardpan Vernal Pool, Coastal and Valley Freshwater Marsh, California Bay Forest, and Oregon Oak Woodland[25]

As recognized by Sawyer *et al*. (2009)[26] Native Grasslands on-site are expressed as the *Danthonia californica* Herbaceous Alliance, California Bay Forest as *Umbellularia californica* Herbaceous Alliance, and Oregon Oak Woodland as *Quercus garryana* Woodland Alliance. These alliances are considered of high inventory priority as they have a Subnational Conservation Status Rank of S3[27]. A rank of S3 indicates a vegetation alliance or association as "Vulnerable", meaning it is at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.

Northern Hardpan Vernal Pools are represented on site by the Burke's goldfield area located below the dam. Sawyer *et al*. (2009) has not described vegetation alliances dominated by *Lasthenia burkei* and it has not been assigned a Heritage Rank. However, Northern Hardpan Vernal Pool was assigned Heritage Rank or Subnational Conservation Status Rank of S1. A rank of S1 indicates a vegetation alliance or association as "Critically Imperiled" because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

Coastal and Valley Freshwater Marsh are considered of high inventory priority as they have Subnational Conservation Status Ranks of S2. A rank of S2 indicates a vegetation alliance or association as "Imperiled" because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.

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[24] Draft Floristic Survey Report, Coyote Valley Dam/Lake Mendocino, Mendocino County, California. SC Environmental Inc. Feb 2011. 119 pp.

[25] ibid

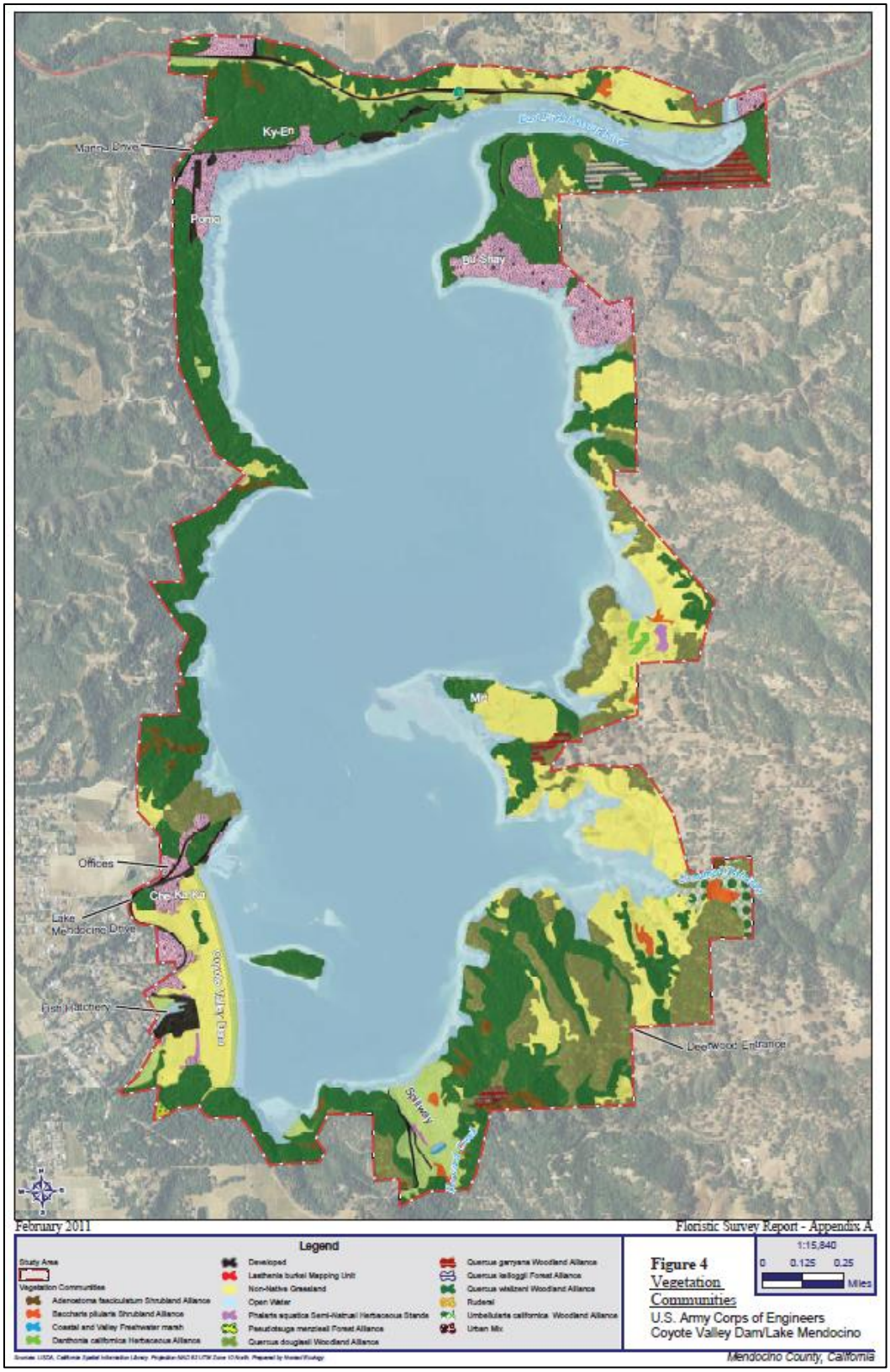
[26] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans, 2009. A Manual of California Vegetation. Second Edition. California Native Plant Society, Sacramento, California. 1300pp

[27] California Department of Fish and Game. 2010. List of California Vegetation Alliances. The Vegetation Classification and Mapping Program. Wildlife and Habitat Data Analysis Branch.

The East Fork Russian River, Lake Mendocino, Howard Creek, and the unnamed tributaries lie within the study area. These hydrologic features exhibit ordinary high water marks and evidence of scour. As potentially jurisdictional waters under Section 404 of the CWA, they are treated as sensitive natural communities[28].

A grazing program at Lake Mendocino would help reduce the hazard of wildfire by directly reducing the amount of vegetation. The program, through work-in-lieu-of rent, can be used to reduce maintenance costs of vegetation management, control invasive plant species (such as yellow star thistle and cocklebur), can be used to increase diversity of plant and animal species, control erosion from water runoff for improved water quality, improve vegetation along stream banks and provide opportunities to improve infrastructure. As part of Lake Mendocino's vegetation management program, it can be managed so that there are no conflicts with the recreation and public use of the project.

[28] Draft Floristic Survey Report, Coyote Valley Dam/Lake Mendocino, Mendocino County, California. SC Environmental Inc. Feb 2011. 119 pp.



Map 9. Vegetation Communities at Lake Mendocino.

Special Status Plant Species

A floristic survey conducted in 2011[29] found the potential for only one Federally listed species, the Burke's goldfields (*Lasthenia burkeri*), to occur within the project boundaries. Burke's goldfields is Federally and state listed as endangered and is designated a CNPS List 1B.1 species indicating it is rare and seriously endangered in California[30]. This species is an annual of the sunflower (*Asteraceae*) family.

This taxon is a small, slender annual herb that produces opposite leaves. Both the ray and disc flower of Burke's goldfields are bright yellow, while the pappus of the species usually consists of one long bristle and several short bristles. In similar members of the genus, the pappus is usually absent or consists of two or more long bristles. It is differentiated from other species in the genus by having greater than six free phyllaries, pinnately lobed leaves, lacking glands, and short fruits. It blooms from April to June.

Burke's goldfields occupy mesic meadows and seeps and vernal pools[31]. It has been recorded as occurring in Lake, Mendocino, Napa, and Sonoma Counties between 49 to 1,968 feet (15 to 600 meters) in elevation[32].

Management Unit # 4 Unique Wildflower Area (see Map 24) consists of three small areas that were designated as Unique Wildflower Areas due to the current or past presence of Burke's goldfields. This designation is designed for the protection of this species (see Chapter 4 for more information).

The 2011 survey detected Burke's goldfields in the Unique Wildflower Area located below the CVD. An approximate total of 1,200 individuals were included in three small depressions at the time of this survey. This occurrence represents the northernmost station for this taxon throughout its range. Currently these depressions do not contain invasive weed species and are generally dominated by Burke's goldfields.

The survey also determined that suitable habitat is present at Lake Mendocino for 11 State species of concern including watershield (*Brasenia schreberi*), bristly sedge (*Carex comosa*), Koch's cord moss (*Enosthodon kochii*), minute pocket moss (*Fissidens pauperculus*), small groundcone (*Kopsiopsis hookeri*), Hall's bush mallow (*Malacothamnus hallii*), Baker's navarretia (*Navarretia leucocephala* subsp. *bakeri*), Lobb's aquatic buttercup (*Ranunculus lobbii*), beaked tracyina (*Tracyina rostrata*), and western viburnum (*Viburnum ellipticum*). Of

[29] Draft Floristic Survey Report, Coyote Valley Dam/Lake Mendocino, Mendocino County, California. SC Environmental Inc. Feb 2011. 119 pp.

[30] 2011. Inventory of Rare and Endangered Plants (online edition, v7-06a). California Native Plant Society. Sacramento, CA. Accessed from http://www.cnps.org/inventory

[31] California Native Plant Society (CNPS). 2001a. Inventory of Rare and Endangered Plants of California. 6th Edition. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. Sacramento, California. 388 pp.

[32] 2011. Inventory of Rare and Endangered Plants (online edition, v7-06a). California Native Plant Society. Sacramento, CA. Accessed from http://www.cnps.org/inventory

these potential species only Baker's navarretia and Lobb's aquatic buttercup were identified during the survey[33]. The special status species and invasives can be seen in Map 10.

[33] Draft Floristic Survey Report, Coyote Valley Dam/Lake Mendocino, Mendocino County, California. SC Environmental Inc. Feb 2011. 119 pp.

Map 10. Special Status Species and Invasive Species Found at Lake Mendocino.

Critical habitat
There is no critical habitat for any Federally listed species of flora or fauna within the Lake Mendocino project boundary. A list of trust resources was obtained from the USFWS and is appended to the Environmental Assessment in Appendix B.

Invasive Species.
Exotic and invasive plant species are a part of the existing ecosystem at Lake Mendocino. These invasive species have the ability to rapidly disrupt land and water resources if not aggressively managed. Over time, native species can be replaced and the ecology altered. Additionally, the interdependence and connectivity between the flora and fauna will be out of balance, and the fauna may relocate to find habitat required for preferred food, shelter, or habitat structure. Invasive species not only have tremendous consequences on altering ecosystem compositions, but also economically high costs stem from labor, materials, and equipment to control.

The 2011 floristic Survey detected a number of non-indigenous species in the project area. These include: false brome (*Brachypodium distachyon*), yellow star thistle (*Centaurea solstitialis*), poison hemlock (*Conium maculatum*), orchard grass (*Dactylis glomerata*), oblong spurge (Euphorbia oblongata), fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana*), Klamath weed (*Hypercium perforatum*), Harding grass (*Phalaris aquatica*), Himalayan blackberry (Rubus armeniacus), medusahead (*Taeniatherum caput-medusae*), and periwinkle (*Vinca major*).

Executive Order (EO) 13112 provides direction and asks Federal agencies to identify and reduce actions that introduce or spread invasive species. All Federal land and water management agencies within the Department of Interior (DOI), National Oceanic and Atmospheric Administration (NOAA), and Department of Defense (DOD) have authority to control and manage invasive species as well as restore affected areas on their lands and waters. This authority arises from the various agency regulations and other statutes that govern management, uses, and planning on the lands and waters under their jurisdiction. The level of effort and budgetary resources for management, control, and restoration vary with each Department. None of them has the resources to control every invasive species present on Federal lands and waters. Departments and their agencies also work in partnership with states and private landowners to control invasive species on public lands.

Control of non-native grasses are accomplished at Lake Mendocino through mowing and spraying along road shoulders shorelines, and in the recreation areas. Yellow star thistle and cocklebur are pulled by hand.

Poison Oak, while a native, is also controlled in the Bushay and Kyen campgrounds, along the Shakota Trail and in the Frisbee golf courses.

2.9 CULTURAL RESOURCES

The cultural resources present at Lake Mendocino (prehistoric, ethnographic, and historic) play an important role in the future management of the Lake and surrounding lands. In the late summer of 2010, using funding provided under the American Recovery and Reinvestment Act

of 2009, a comprehensive inventory, evaluation, and condition assessment of archaeological and historical sites located above lake level at Lake Mendocino was conducted by Statistical Research Inc., under contract to the Corps. An outline of the historical context of the lake, from early Native American settlement through the recent historical period and dam construction, is available in the resulting publication titled *American Recovery and Reinvestment Act 2009 Section 110 Compliance Report for the U.S. Army Corps of Engineers, San Francisco District: Section 110 Survey and Condition Assessment of 15 Sites at Lake Mendocino, Mendocino County, California* (2011)[34]. Digital copies are available to the public by request from the San Francisco District.

Archaeological Work at Lake Mendocino

In the late 1940s, with plans underway for the construction of the dam, the first organized archaeological surveys of the Lake Mendocino area were undertaken by Franklin Fenenga for the Smithsonian Institution. Fenenga identified three Native American sites in the footprint of the then-proposed reservoir. In 1957, Adan Treganza conducted excavation work on one of the sites Fenenga identified, and documented 16 additional sites. Years after dam construction, in the 1970s, several additional studies were undertaken to assess the impacts of dam construction. Including these early efforts, at least 15 archaeological surveys and at least 31 sites have been identified within the footprint of Lake Mendocino. A more detailed description of the archaeological work at the lake, and the specific results, is provided in the 2011 Section 110 report.

Native American and Euro-American Historical Resources at Lake Mendocino

At least 14 Native American village sites are known to exist at the lake, as well as at least four other pre-contact Native American sites. Two historic period Rancheria sites have been identified, as well as more recent remains of ranching and farming operations. One historic winery, the Garzini Winery (MEN-1138H) was documented extensively by a graduate student in the 1997 and has been recommended eligible for inclusion in the National Register of Historic Places.

Best Practices for Cultural Resources Management

The Section 106 review process must be undertaken for all projects and undertakings conducted at the lake, either by, or with the approval of, the San Francisco District. To maximize the effectiveness of the process, and to minimize unexpected impacts, the process should begin during the very earliest phases of project planning. Work should be planned to avoid impacts to cultural resources whenever possible. The locations of archaeological and historical resources known to exist in the Lake Mendocino area should be taken into account, as well as professional

[34] Source: Seetha N. Reddy, 2011. Am*erican Recovery and Reinvestment Act 2009 Section 110 Compliance Report for the U.S. Army Corps of Engineers, San Francisco District: Section 110 Survey and Condition Assessment of 15 Sites at Lake Mendocino, Mendocino County, California*. Copies on file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

assessments of the potential for sites to exist underground. The 2011 Section 110 report includes an assessment of geoarchaeological sensitivity that should be taken into account. In addition to direct effects, it is imperative to consider the indirect results of an undertaking, such as induced recreational traffic through a sensitive area.

Locations of archaeological sites and any historical resources, especially in situations where visitation cannot be controlled and supervised, should not be unnecessarily disclosed to the general public. In the worst case, such disclosure may invite vandalism or looting. Additionally, many Native American tribes feel that the nature and location of archaeological sites associated with their history is private information that they would prefer not be widely known. That said, the variety of cultural resources at Lake Mendocino are an asset to the Corps and the region. They are irreplaceable physical reminders of the history of the area should be protected, but the story they tell should not remain a secret. Interpretive signage and programs are encouraged, and can provide a more well-rounded and enjoyable experience to visitors to the lake, to the extent that these activities do not threaten the resources.

Cultural resources within the Lake Mendocino property are afforded protection under the ARPA, NHPA, and NAGPRA. These laws govern the process for how we identify, assess, treat, and protect cultural and archaeological resources on public or Indian lands.

2.10 DEMOGRAPHICS AND ECONOMICS

As of the 2010 Census, the City of Ukiah had a total population of 16,075 people[35]. The annual population estimate for 2017 was 16,036[36]. In 2010, the median age was 35.9 years and the average household size was 2.48 persons[37]. The median household income in 2016 was $38,686[38]. The majority of residents in Mendocino County identified as white, with Hispanic being the largest minority group in 2010[39]. Table 3 compares the population in 2017 for several counties, including Mendocino County, to their corresponding growth rates between 2010 and 2017. Mendocino County experienced nominal population growth in this period. A forecast of population growth by county done by the California Department of Finance shows that the population of Mendocino County will have grown by about 2,500 between 2010 and 2020[40]. The projected population for Mendocino County by 2060 is just over 96,000[41].

[35] Source: U.S. Census Bureau. 2010. Demographic Profile.
[36] ibid
[37] ibid
[38] ibid
[39] ibid
[40] Source: California Department of Finance. 2007. *Population Projections for California and its Counties 2000-2050, by Age, Gender and Race/Ethnicity,* Sacramento, California.
[41] ibid

Table 3. Current Population by County and Average Growth Rate.[42]

County	2017 Population	Average Growth Rate (2010 to 2017)
Mendocino	88,018	0.2%
Sonoma	483,870	4.2%
Napa	136,530	3.3%
Butte	220,002	4.2%
Solano	413,344	7.8%

The great majority of the population that utilizes Lake Mendocino resides in or near the City of Ukiah. The average income in Ukiah is $64,014[43]. Table 4 shows additional statistics on the distribution of income ranges. Table 5 shows that the population of Ukiah increased slightly from 2000 to 2010, resulting in an increase in housing units but also two times the number of vacant housing units.

Table 4. Income Distribution in 2016[44]

Income Range	Households	Percent
Less than $25,000	1,958	31.9%
$25,000 to $34,999	812	13.2%
$35,000 to $49,999	753	12.3%
$50,000 to $74,999	1,100	17.9%
$75,000 to $99,999	594	9.7%
$100,000 to $149,999	631	10.3%
$150,000 to $199,999	136	2.2%
$200,000 or more	150	2.4%
Total	6,134	100%

Table 5. Population and Housing

Year	Population	Total Housing Units	Occupied Housing Units	Percent Vacant	Persons Per Household
2000[45]	15,497	6,137	5,985	2.5%	2.47
2010[46]	16,075	6,488	6,158	5.1%	2.48
2016[47]	15,884	6,521	6,134	5.9%	2.61

[42] Source: U.S. Census Bureau Quick Facts. Population Estimates, July 1, 2017.
[43] Source: ACS 5-Year Estimates
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk
[44] Source: ACS 5-Year Estimates
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk
[58] Source: 2000 U.S. Census Bureau
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF
[46] Source: 2010 Census Benchmark
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF
[47] Source: ACS Demographic and Housing Estimates 2012-2016 5-year estimates

An economic and demographic profile of Mendocino County was done in 2011 by the Center for Economic Development at California State University, Chico[48]. The study revealed that the utilities sector experienced the most growth in Mendocino County and farming jobs decreased significantly. Government jobs comprised the highest percentage of overall jobs in 2008 for Mendocino County, followed by retail and health care/social assistance jobs. Few opportunities for jobs in the arts, entertainment, and recreation fields existed in 2008 as compared to the other industries shown in Figure 2. In 2009, the City of Ukiah had the largest labor force of any other city or town within Mendocino County.

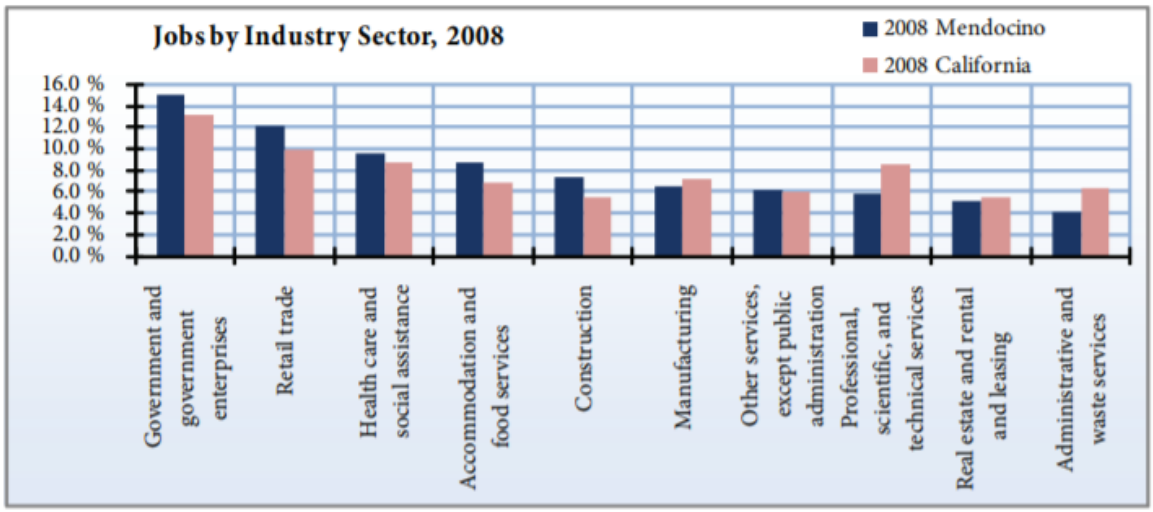


Figure 2. Distribution of jobs by industry in Mendocino County as compared to the State of California[49].

Travel related spending greatly influences the economy of Mendocino County. In 2016, a total of $386.1 million was spent directly on travel. In comparison, the North Coast Region, in which Mendocino County lies, experienced a total of $1.92 billion spent directly on travel, and the State of California had $126.3 billion spent directly on travel. Accommodations and food services comprised the majority of the travel expenditures in Mendocino County. The majority of lodging expenses related to travel were spent on hotels, with campgrounds generating the third highest visitor spending for lodging type. The recreation industry, which is grouped with arts and entertainment, generated $31.3 million in 2016[50].

[48] Source: California State University Chico Center for Economic Development. 2011. Mendocino County 2010-2011 Economic and Demographic Profile.
[49] Source: California State University Chico Center for Economic Development. 2011. Mendocino County 2010-2011 Economic and Demographic Profile.
[50] Source: Dean Runyan Associates. 2017. California Travel Impacts by County, 1992-2016p.

2.10 RECREATION FACILITIES, ACTIVITIES, AND NEEDS

Recreation Activities Available at Lake Mendocino

The Russian River Watershed is one of the most prominent and important recreational areas in northern California. Visitors to Lake Mendocino can enjoy an assortment of recreational activities on and around the lake. There are four campgrounds, several day use areas that support activities such as picnicking and disc golf, miles of trails, the Pomo Cultural Center, and a wildlife area (see Map 1). Further details on the variety of recreational opportunities offered at Lake Mendocino are provided in Chapter 5. Resource Plan.

The public use of the Lake Mendocino and CVD is subject to the Rules of Title 36- Parks, Forests and Public Property, Code of Federal Regulations (C.F.R.), Part 327 - Rules and Regulations Governing Public Use of Water Resource Development Projects administered by the Chief of Engineers. Title 36 allows USACE to manage the natural, cultural, and developed resources of each project while providing recreational opportunities and natural resource enhancement. Except as otherwise provided in Title 36 or by Federal law or regulation, state and local laws and ordinances shall apply on project lands and waters. The applicable parts of Title 36 can be found in Appendix A. Public Law.

Visitation to Lake Mendocino

Visitation data through the USACE Visitation Estimation and Reporting System (VERS) was available for the fiscal years (FY) 14-16 (October 1-September 30). At the time of this Master Plan the data for FY 17 and 18 was not yet released. Data for the total visitors to Lake Mendocino's recreational facilities for both day and night use is shown in *Visitation to Lake Mendocino*
. Several fields of VERS data are missing, likely due to the limited USACE staff available to record visitation regularly throughout the year. The day use areas and campgrounds generally saw an increase in use between FY 14 and 16. Visitation to the Coyote Dam Steelhead Facility decreased by more than half during that period. Overall, the data shows that between FY14 and FY16 the visitation to Lake Mendocino nearly tripled.

Table 6. Visitation to Lake Mendocino from FY14 to FY16. The data accounts for both day use visitors and overnight visitors.

	FY14 Total Visitors	% Change FY14 to FY15	FY15 Total Visitors	% Change FY15 to FY16	FY16 Total Visitors
Bushay Campground	0	0%	0	0%	0
Chekaka Campground	72,697	+80.77%	131,426	+ 54.08%	202,495
Coyote Dam Steelhead Facility	20,975	-41.85%	12,197	- 47.99%	6,344
Inlet Road	34,711	+ 39.80%	48,525	+ 113.67%	103,683
Kawayo Horse Staging Area	638	+1589.82%	10,781	- 94.68%	574
Kyen Campground	34,711	- 68.16%	11,052	+ 248.36%	38,501
Mesa Day-Use Area	2,999	-100%	0	--	0
Miti Boat-In Campground	0	--	642	+ 130.22%	1,478
North Boat Ramp	20,036	-18.42%	16,345	+ 126.08%	36,953
North Overlook Scenic Viewing Area	19,154	0%	19,154	0%	19,154
Oak Grove Day-Use Area	35,912	- 32.69%	24,180	- 50.73%	11,914
Overlook Day-Use Area	21,797	+ 63.79%	35,701	+ 114.69%	76,645
Pomo A Day-Use Area	15,514	+ 6.91%	16,586	+ 50.64%	24,985
Pomo B Day-Use Area	11,328	+ 382.52%	54,667	+ 67.87%	91,771
Pomo C Day-Use Area	11,328	+ 382.52%	54,667	+ 67.87%	91,771
Pomo Visitor Center	11,328	+ 382.52%	54,667	+ 67.87%	91,771
Total	300,909	+ 67.93%	505,315	+ 37.60%	809,764

Related Recreational Areas

The Russian River Watershed contains a wide range of natural environments that meet a variety of recreational purposes for all seasons. In addition, the region has a long and rich history of human activity. Many of these natural and historic areas were conserved and made available for public use through State parks, trust lands, historic monuments, national forests, wilderness areas, or other public recreation areas.

USACE also operates Lake Sonoma, located in Sonoma County, about 60 miles south of Lake Mendocino. The 2,700-acre lake with 50 miles of shoreline offers similar activities to Lake Mendocino and attracts visitors from the San Francisco Bay area. There is overlap in visitation to both lakes due to their proximity and similar available activities. Additional recreation areas that are located in close proximity to Lake Mendocino include the Mendocino National Forest, which is located about 40 miles west of Lake Mendocino and comprises over 900,000 acres. Clear Lake, the largest natural freshwater lake located entirely within California, is also located about 40 miles southeast of Lake Mendocino and offers an abundance of outdoor recreational opportunities.

Regional Recreation Analysis

The California State Parks' Planning Division develops the Statewide California Outdoor Recreation Plan (SCORP), the statewide master plan for parks, outdoor recreation, and open

space for California. The SCORP provides policy guidance to all outdoor recreation providers, including Federal, state, local, and special district agencies that provide outdoor recreational lands, facilities and services throughout California. The SCORP is also the primary tool for prioritizing Land and Water Conservation Fund grant allocations to local governments. At the time of this Master Plan, two elements within the SCORP are applicable, the 2012 *Survey of Public Opinions and Attitudes on Outdoor Recreation* and the 2013 *Outdoor Recreation in California Regions*[51].

Regional Trends and Challenges

Meeting the park and recreation needs for all current and future residents should be a goal of all park and recreation providers in California. Towards that end, it is essential that all park and recreation stakeholders have a basic understanding of both the State of California's demographics and the trends that are likely to influence the demand for outdoor recreation now and in the future. One of the greatest challenges affecting park and recreation providers is the enormous increase in the number of new Californians. Most of California's growth has been in its major metropolitan areas such as Los Angeles, San Diego, and the San Francisco Bay Area.

Lake Mendocino is within the Northern California region identified in the SCORP. Of all of California's regions it has the most acres of protected lands per resident, 96% of which is Federal land. However, it has one of the lowest accessibility rates for resident access to protected land, with only 26% of the region's population living within ¼ mile of protected lands. Planning for the future, the SCORP also identifies the top actions related to recreation for each region. The outdoor recreation activities offered at Lake Mendocino help fulfill these priority actions for the region. The following actions were identified for the Northern California region:

1. Fund outdoor recreation opportunities that target retirees.
2. Fund projects that provide low-cost or no-cost outdoor recreation opportunities.
3. Fund recreation facilities in incorporated areas proportionate to the area's population.
4. Fund walkable parks in urban areas.

The 2012 *Survey of Public Opinions and Attitudes on Outdoor Recreation* by the California State Parks Agency telephone surveyed over 4,000 individuals and completed a mail survey for over 1,000 individuals across California. The purpose of the surveys and subsequent report was to understand California residents' opinions and attitudes towards outdoor recreation and self-reported levels of physical activity that takes place in recreation areas. Below is a sample of some of the survey findings across California:

1. 91% of survey respondents visited a park within the past year, the majority of whom had also visited a park within the past month.
2. The most important facilities were wilderness areas, environmental/outdoor education facilities, picnic sites, and other recreation facilities at lakes/rivers/reservoirs.
3. The majority of outdoor recreation activities in the past year included picnicking, walking, beach activities, and swimming.

[51] Sources: California State Parks. 2014. Survey on Public Opinions and Attitudes on Outdoor Recreation in California. Sacramento, CA.
California State Parks, 2013. Outdoor Recreation in California Regions 2013. Sacramento, CA.

4. About one-third of respondents used an unpaved trail for hiking, biking or horseback riding at least one to two times per month.
5. The majority of respondents agreed that fees collected should also be spent in that recreation area.

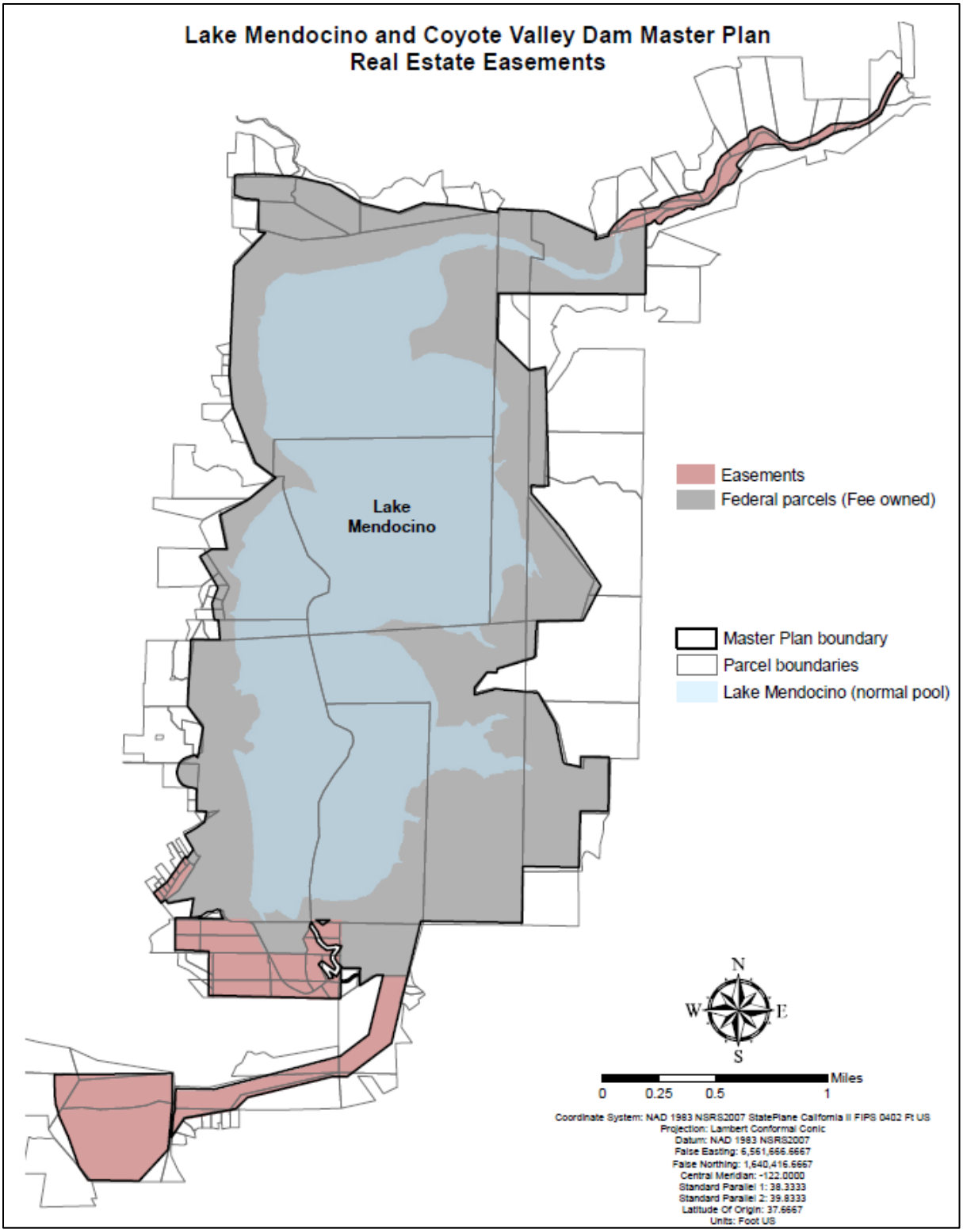
2.11 REAL ESTATE

Real Estate Acquisition Policy
Under the Flood Control Act of 1950, Congress authorized the Federal Government to acquire lands for the primary purposes of flood risk management and water conservation. Recreational development was subsequently authorized in accordance with the Federal Water Project Recreation Act of 1965. Over the life of the CVD and Lake Mendocino project, USACE analyzed lands for its needs in relation to the project. The Federal Government currently owns 3,209 fee acres within the project boundary, and has easement rights on 326 acres (see Map 11). USACE has management rights and responsibilities on these Federal lands. This master plan does not make any recommendations for acquiring additional real estate.

Real Estate Management
Periodic boundary inspections detect encroachments and trespasses. These are resolved at the lowest level possible. Unmarked monument boundaries and fence monument boundaries are surveyed where feasible. Project lands are made available to public agencies and individual interests under lease, permit, license, or easement agreement for industrial/commercial, public utility, scientific, or recreational purposes. The length of these agreements ranges between 5 and 50 years depending upon the type of real estate instrument and purpose involved.

At the time of this Master Plan, there are 28 agreements to use CVD and Lake Mendocino lands. All requests for real estate related actions are made to the Lake Mendocino Park Manager, who makes a recommendation through the USACE San Francisco District Chief, Operations and Readiness Division to the USACE Sacramento District Chief, Real Estate Division. The Sacramento District Real Estate Division maintains all current information on real estate agreements. Other management activities include creating Geospatial products and data for Civil Works property land tracts accountable or managed by USACE to include fee, easement, licensed and disposed tracts. The real estate products and data support the USACE CorpsMap system.

Encroachments
Encroachments on USACE-managed Federal lands directly conflict with the purpose for which the CVD and Lake Mendocino were established. USACE is, therefore, committed to resolving encroachments by the most expedient and effective means available. It is the intent of the USACE Sacramento District Real Estate Division to recapture use of encroached upon public lands for Federal project operating purposes and general use and enjoyment of the public. The general policy is to require removal of encroachments, restore the premises, and collect appropriate administrative costs and fair market value for the term of unauthorized use.



Map 11. Location of Easement Lands and Federally Owned Parcels (fee title) within the Lake Mendocino Project Boundary.

CHAPTER 3 – RESOURCE OBJECTIVES

3.1 GOALS AND OBJECTIVES

The terms "goal" and "objective" are often defined as synonymous, but in the context of this Master Plan, goals express the overall desired end state of the Master Plan whereas objectives are the specific task-oriented actions necessary to achieve the overall Master Plan goals.

The following are the goals for the Lake Mendocino Master Plan based on EP 1130-2-550, Chapter 3:

GOAL A. Provide the best management practices to respond to regional needs, resource capabilities and suitability, and expressed public interests consistent with authorized project purposes.

GOAL B. Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.

GOAL C. Provide public outdoor recreation opportunities that support project purposes and public demands created by the project itself, while also sustaining project natural resources.

GOAL D. Recognize the particular qualities, characteristics, and potentials of the project.

GOAL E. Provide consistency and compatibility with national objectives and other Federal, state, and local laws and regulations.

Objectives are clearly written statements that respond to identified issues and that specify measurable and attainable activities for resource development and/or management of the lands and waters under the jurisdiction of the San Francisco District Lake Mendocino Project Office. The objectives stated support the goals of the Master Plan, Environmental Operating Principles (EOPs), and applicable national performance measures.

The resource objectives are consistent with authorized project purposes, Federal laws and directives, regional needs, resource capabilities, and take public input into consideration. Recreational and natural resources carrying capacities are also accounted for during development of the objectives found in this Master Plan. The objectives in this Master Plan, to the best extent possible, aim to maximize project benefits, meet public needs, and foster environmental sustainability for Lake Mendocino. The objectives were reviewed and screened by the Master Plan Project Delivery Team, including USACE staff located at Lake Mendocino.

Table 7 below outlines the five main categories of resource objectives: recreational, natural resource management, environmental compliance, general management, and cultural resources. The table shows how the five Master Plan goals are fulfilled by each of the resource objectives using the grey highlighting. The shaded areas in the table indicate that the objective meets the goal.

Table 7. Goals and Objectives for Lake Mendocino Master Plan.

Recreational Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations
Evaluate need for improved recreation facilities (i.e. camp sites, picnic facilities,) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, etc.)					
Optimize recreational development within project boundary while maintaining or improving environmental sustainability of resources					
Regularly monitor resources to ensure recreational experience, environmental quality, and public safety are maintained					
Follow EOPs associated with recreational use of waterways for all water-based management activities and plans					
Increase accessible facilities, including ADA accessibility					
Evaluate need for commercial facilities					
Evaluate flooding to address potential impact to recreational facilities (i.e. campsites, etc.). Note that water level management is not within scope of this Master Plan					
Ensure consistency with USACE Recreation Strategic Plan and seek out partnership opportunities					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Natural Resource Management Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations
Evaluate flood/conservation pool[52] levels to optimize habitat conditions, consistent with flood risk management and water supply purposes[53]					
Actively manage and conserve fish and wildlife resources, with an emphasis on special status species, by implementing ecosystem management principles					
Use watershed approach during decision-making process					
Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats					
Optimize resources, labor, funds, and partnerships for prevention of invasive species in Lake Mendocino					
Minimize activities that disturb scenic beauty of lake					
Implement erosion reduction measures, such as planting vegetation whenever practical					
Identify and protect unique or sensitive habitat areas					
Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities					

[52] Refers to water supply and addresses the balance between water levels and subsequent impacts to natural resources (eg. trees, habitat, etc.).

[53] Note that water level management is not within the scope of the Master Plan.

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Natural Resource Management Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations
Stop unauthorized uses of public lands such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, off-road vehicle (ORV) use, trash dumping, and/or poaching that create negative environmental impacts					
Employ professionals in fields of recreation, biology, forestry, landscape architecture, ecology, and related sciences to implement and monitor resource management programs					
Maintain scenic overlook areas for public use and clear overgrown vegetation					
Improve environmental conditions for wildlife, fisheries, recreation, aesthetics, woodland, and grassland to promote compatible multiple uses in the park					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Environmental Compliance Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources.	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations
Ensure compliance with ER 200-2-2, Environmental Compliance Policies for Lake Mendocino.					
Comply with the USACE sustainability requirements.					
Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and avoid negative effects to public water supply, ensuring public health and safety.					
Include both point and non-point sources of water quality problems during decision-making.					
Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems.					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Visitor Information, Education, and Outreach Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources.	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations
Provide additional opportunities (i.e. town hall meetings) for collaboration between agencies, special interest groups, Tribes and general public					
Implement additional educational and outreach programs at lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology					
Establish a network among local, state, and Federal agencies concerning the exchange of lake policy and regulation-related information for public education and management purposes					
Increase public awareness of special activities at facility					
Promote USACE water safety messaging					
Educate visitors and volunteers on laws, regulations, and policies regarding, vegetation modification, earth moving activities, and control of animals (e.g. trail maintenance, erosion control, facility improvements, and leash laws)					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Economic Impacts Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project	**GOAL E.** Provide consistency with and enforcement of laws and regulations.
Balance economic and environmental interests involving Lake Mendocino					
Manage additional commercial development compatible with national USACE policy on both recreation and non-recreational outgrants on public lands classified for High Density Recreation					
Work with local communities to promote tourism and recreation use of lake to positively affect socioeconomic conditions surrounding lake					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

General Management Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources.	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project.	**GOAL E.** Provide consistency with and enforcement of laws and regulations.
Survey and mark project boundaries to ensure they are clearly recognized in all areas					
Develop year-round access to remote park lands in order to better manage park resources during all seasons					
Establish agreements with neighboring communities for their access gates into Lake Mendocino					
Maintain consistency with USACE Campaign Plan (national level), IPlan (regional level), OPlan (District level)					
Ensure consistency with Executive Orders 13423 and 13514, to guarantee compliance with Leadership in Energy and Environmental Design criteria for government facilities					
Manage non-recreation outgrants, such as utility easements, in accordance with national guidance set forth in ER 1130-2-550					
Ensure compliance with 36 C.F.R. Part 327					
Seek out partnership opportunities and establish a Friends Group or other non-profit for Lake Mendocino					

Table 7 (Cont'd). Goals and Objectives for Lake Mendocino Master Plan.

Cultural Resources Management Objectives	**GOAL A.** Provide best management practices	**GOAL B.** Protect natural and cultural resources.	**GOAL C.** Provide recreation opportunities	**GOAL D.** Utilize qualities, characteristics, and potentials of the project.	**GOAL E.** Provide consistency with and enforcement of laws and regulations.
Increase public awareness of regional history					
Maintain full compliance with Section 106 and 110 of the NHPA; ARPA; and Native American Graves Protection and Repatriation Act on public lands surrounding lake					
Work with Tribes to develop public outreach to educate public regarding traditional cultural landscapes and Native American interests at Lake Mendocino					
Work with Pomo Tribe to determine usage goals for existing Pomo Cultural Center					

CHAPTER 4 – LAND ALLOCATION, LAND CLASSIFICATION, WATER SURFACE, AND PROJECT EASEMENT LANDS

4.1 LAND ALLOCATION.

Lands are allocated by their congressionally authorized purposes for which the project lands were acquired. According to EP 1130-2-550, there are four land allocation categories applicable to USACE projects, which determine the land use classification.

1. *Operations*. These are the lands acquired for the congressionally authorized purpose of constructing and operating the project. Lands in this allocation can only be given a land classification of "Project Operations".

2. *Recreation*. These lands were acquired specifically for the congressionally authorized purpose of recreation. These lands are referred to as separable recreation lands. Lands in this allocation can only be given a land classification of "Recreation".

3. *Fish and Wildlife*. These lands were acquired specifically for the congressionally authorized purpose of fish and wildlife management. These lands are referred to as separable fish and wildlife lands. Lands in this allocation can only be given a land classification of "Wildlife Management".

4. *Mitigation*. These lands were acquired specifically for the congressionally authorized purpose of offsetting losses associated with development of the project. These lands are referred to as separable mitigation lands. Lands in this allocation can only be given a land classification of "Mitigation".

The land acquired by USACE for the Lake Mendocino and CVD project were originally acquired for the purposes of flood risk management and water conservation. The land allocation for the project is operations, as the lands were acquired for the purpose of constructing and operating the CVD and Lake Mendocino. Recreation was later added as a purpose for the project.

4.2 LAND CLASSIFICATION.

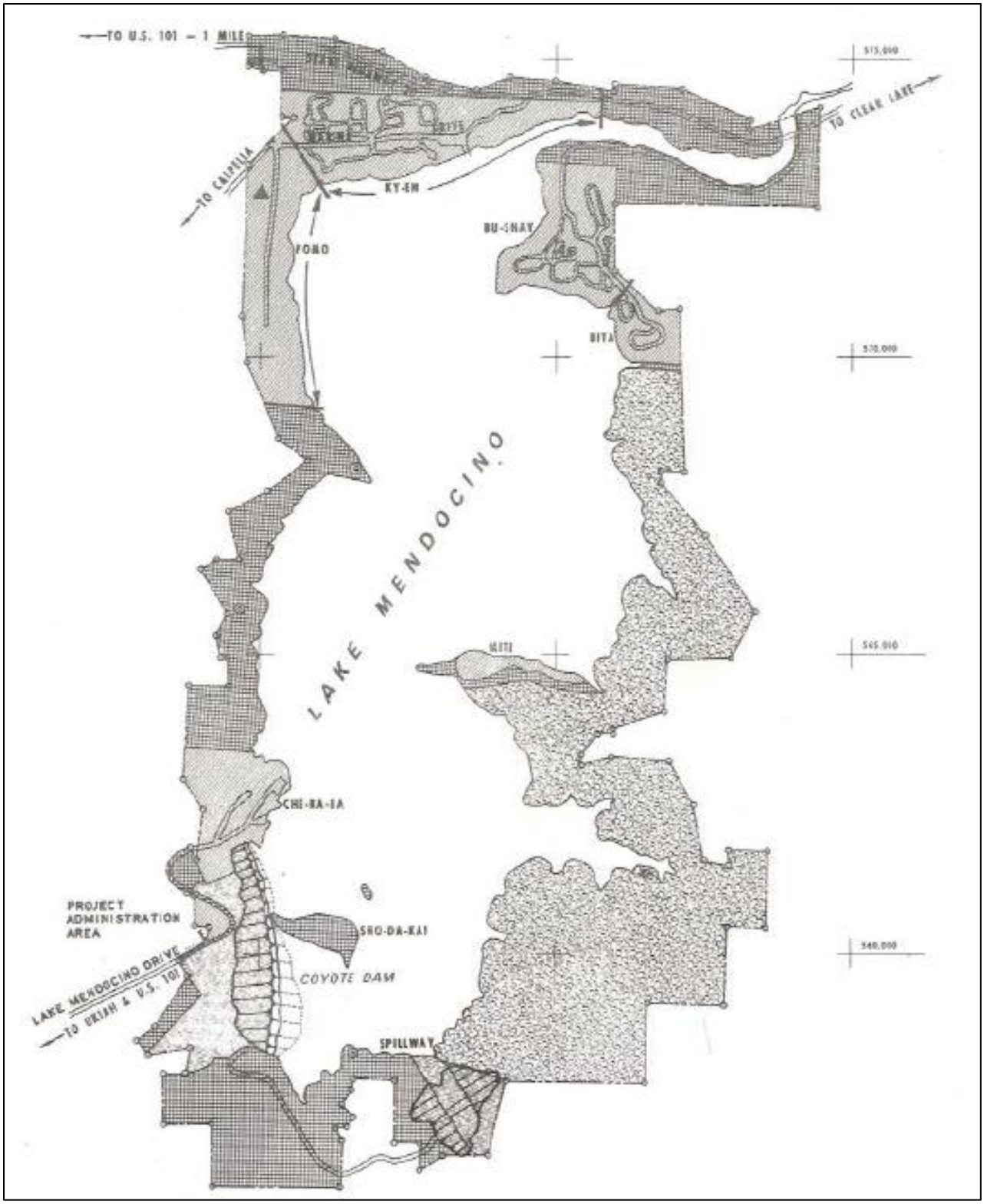
Land classification designates the primary use for which project lands are managed. Project lands are zoned for development and resource management consistent with authorized project purposes and the provisions of the NEPA and other Federal laws. In order to update the Master Plan and meet the current land classification definitions (per EP 1130-2-550), maps included in the 1977 Master Plan were reviewed and translated to the new definitions. Below are the definitions for the land use classifications that were used in the 1977 Master Plan. The land

uses were translated into the land use classifications used for the management units (MUs) outlined in this Master Plan.

The land classifications presented in this Master Plan, as well as the recommended future uses, are consistent with the land classifications and policies included in the 1977 Master Plan. The intent of the land classification process is to fully utilize project lands in accordance with authorized project purposes, consideration of public desires, and regional and project specific resource requirements and capabilities. For many MUs, the land classification was changed since the 1977 Master Plan to reflect the land classifications identified in current USACE Master Planning guidance (EP 1130-2-550). While the terminology has changed, the overall intent of how a specific MU is to be used and managed has remained the same. An overview of the land classifications for the Lake Mendocino Project is shown in Map 13.

Land use classifications from 1977 Lake Mendocino Master Plan:

- Class I: High density recreation areas
- Class II: General outdoor recreation areas, including lands reserved for visitor accommodations, administrative facilities, campgrounds, and water surface areas
- Class III: Natural environment areas that provide a transition between general outdoor recreation areas to primitive wilderness areas, such as trails, outlooks, and picnic sites
- Class IV: Outstanding natural or scientific areas that represent the most fragile natural areas
- Class V: Wildlife management areas
- Class VI: Historic or cultural areas including historic structures of historic or cultural significance
- Class VII: Nonpublic use project areas that can be altered from their natural conditions for project use, such as control towers, the spillway and the dam



Map 12. Land Use Classification Map from the Original 1977 Master Plan.

Land use classifications for the current Lake Mendocino Master Plan:

1. *Project Operations*. This category includes those lands required for the dam, spillway, offices, maintenance facilities, and other areas that are used solely for the operation of the project.

2. *High Density Recreation.* This category includes lands developed for intensive recreational activities for the visiting public including day use areas and/or campgrounds. These could include areas for concessions (marinas, comprehensive resorts, etc.), and quasi-public development.

3. *Mitigation*. This classification will only be used for lands with an allocation of mitigation and that were acquired specifically for the purposes of offsetting losses associated with development of the project.

4. *Environmentally Sensitive Areas*. These are areas where scientific, ecological, cultural or aesthetic features were identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the ESA, the NHPA or applicable state statues. Typically, limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration. These areas are typically distinct parcels located within another, and perhaps larger, land classification area.

5. *Multiple Resource Management Lands*. This classification allows for the designation of a predominant use as described below, with the understanding that other compatible uses described below may also occur on these lands (e.g. a trail through an area designated as wildlife management.). Land classification maps must reflect the predominant sub-classification, rather than just multiple resource management.

(a) *Low Density Recreation*. These lands are designated for dispersed and/or low impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as hiking, biking, fishing, sight-seeing, or nature study. Some limited facilities are permitted, including trails, parking areas and vehicle controls, as well as primitive camping and picnic facilities.

(b) *Wildlife Management*. These lands are designated specifically for wildlife management, although all project lands are managed for fish and wildlife enhancement in conjunction with other land uses. Wildlife management lands are actively managed or enhanced to create valuable habitat suitable for game and/or non-game species. These activities are conducted as identified by the managing agency's forest and wildlife management plans. The Wildlife Management Plan for Lake Mendocino can be found in the Appendices to the Operational Management Plan.

Wildlife lands are available for dispersed uses such as sightseeing, wildlife viewing, and nature study, hiking, and biking. Consumptive uses of wildlife, such as fishing are encouraged when compatible with the wildlife objectives for a given area and with Federal and state fish and wildlife management regulations.

(c) *Herbaceous Management:* Management activities in these areas focus on the protection and enhancement of forest resources and vegetative cover. USACE conducts active vegetation management activities, protect water quality, improve aesthetics, and enhance wildlife habitat.

(d) *Proposed Recreation:* This sub-classification consists of lands for which recreation areas are either currently in the planning stages, are held in an interim status for future recreation possibilities, or lands that contain existing recreation areas that were temporarily closed. The lands are managed for multiple purposes including wildlife and vegetation management and low density recreation until if and when they are developed as recreation areas.

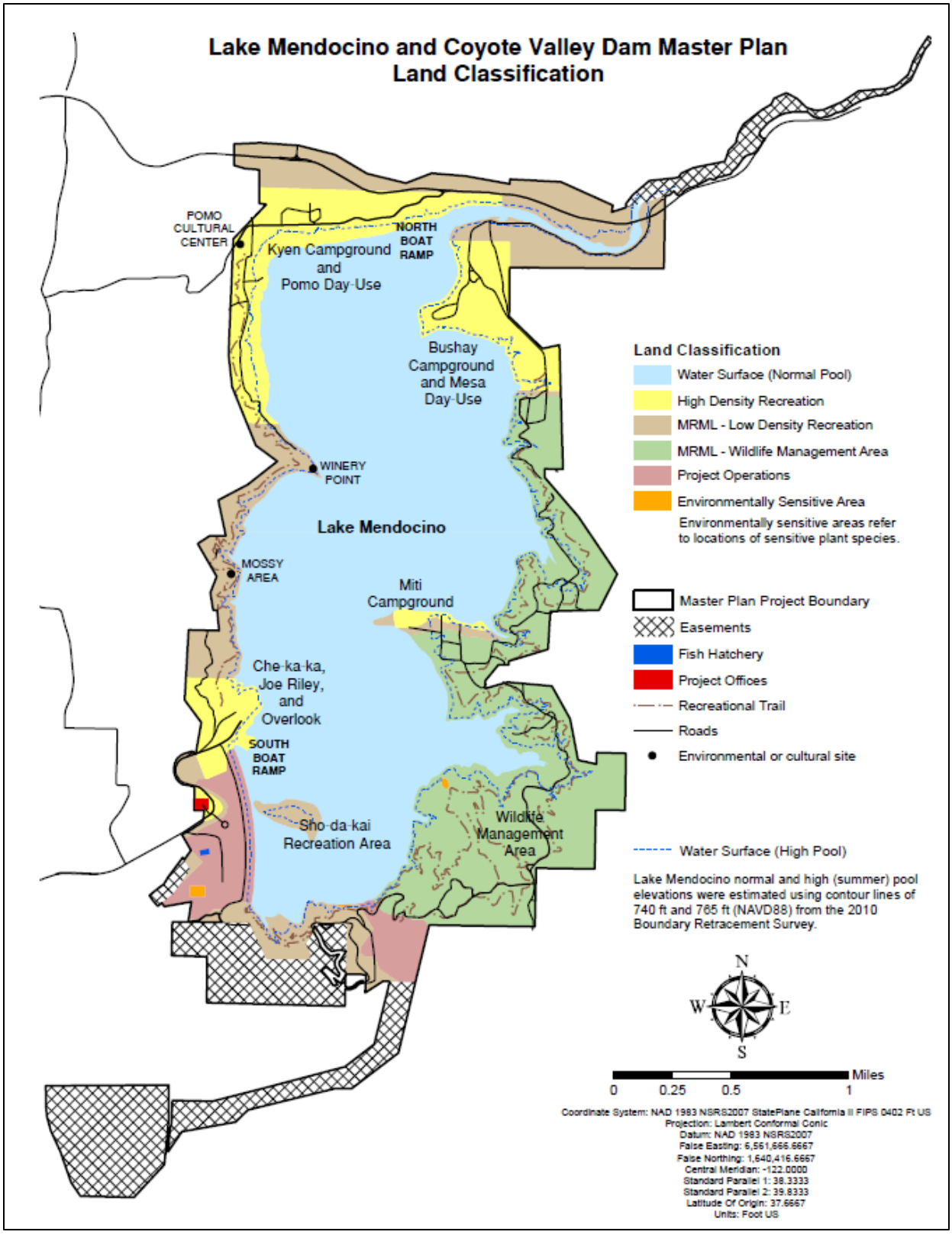
6. *Water Surface*. If the project administers a surface water zoning program, then it should be included in the Master Plan.

(a) *Restricted*. Water areas restricted for project operations, safety, and security purposes.

(b*) Designated No-Wake*. To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety.

(c*) Fish and Wildlife Sanctuary*. Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

(d) *Open Recreation.* Those waters available for year-round or seasonal water-based recreational use.



Map 13. Overview of Existing Land Use Classifications at Lake Mendocino.

CHAPTER 5 – RESOURCE PLAN

5.0 RESOURCE PLAN

This chapter describes in broad terms how project lands and resources will be managed. For Lake Mendocino, the management by area approach, as set forth in EP 1130-2-550, was chosen as the method for developing the resource plan for the Lake Mendocino Master Plan. This approach divides all USACE owned lands and waters within the Lake Mendocino project area into MUs and includes more detailed information that would typically be found in an OMP. The management by area approach was chosen due to the high level of stakeholder interest in Lake Mendocino and the master planning process, in addition to a variety of special topics and considerations that could influence management of the Lake Mendocino project (see Chapter 6). The following sections describe how project lands and resources are currently managed and recommendations for future management of Lake Mendocino and surrounding project lands.

A wide variety of factors must be considered when developing the Lake Mendocino project lands and resources. These factors include physical characteristics, land and lake access, compatibility with adjacent land uses, existing and projected visitation levels and visitor-use pattern, the economics of operation and maintenance, and Federal, state and local initiatives. It is vital that any future recreation development not destroy the features of the Lake Mendocino project that visitors come to enjoy. Therefore, the overall objective in development at the Lake Mendocino project is to maximize the recreation benefits while preserving the natural resources and scenic qualities.

The purpose of the Master Plan is to provide a long-range view of the project area development. As such, it is important to (1) examine the various segments of the project and their potential for development and (2) determine how each MU can be developed to fit with the overall goals of the CVD and Lake Mendocino project.

This chapter identifies the MUs and resource objectives established for Lake Mendocino. The resource objectives for each MU reflect site-specific application of the lake-wide resource objectives established in the previous chapter. Implementation of these objectives will help to satisfy identified regional needs and desires of other agencies and the public within the limits and capabilities of the lake resource base.

The recreational areas at Lake Mendocino have been given names in the Pomo Indian language. The discussion of each USACE-owned MU contains the following components. The location of the MUs is shown in Map 4, above.

Management Unit Name: The name of the MU is derived from the primary facility/recreation area being managed.

Land Use Classification: This is the land use identified in the original 1977 Lake Mendocino Master Plan.

Recommended Future Land Use and Rationale: The land classification is how the project land will be managed and updates the use to the current terminology. This provides a brief description of how the land classification was determined based on resources, required use, and constraints.

Location: This provides a brief description of the location of the MU, including access to the area.

Description: This section provides a brief description of the MU, including information on facilities, recreational opportunities, current conditions of the MU, and important historical information relevant to the MU.

Resource Objectives: This section provides a brief list of the objectives for each MU. Each unit has more than one resource objective, and these objectives are not prioritized. In some areas, the resource objectives may not be implemented for some time.

Development Needs: This section provides a summary description of the techniques that can or should be undertaken to implement the area resource objectives. The concepts discussed under this component are not all-inclusive; rather, they convey an understanding of the range of development and management strategies that could be used to implement the resource objectives. The development needs will be further refined and detailed in subsequent planning and design documents, including OMPs and future Design Memorandums. The ultimate decisions regarding the methods that are actually implemented will result from coordination between USACE, state, local agencies, non-governmental organizations, and the public where appropriate and as opportunities arise. Any applicable environmental compliance associated with these decisions would be carried out at the time of consideration for implementing any development activities.

Special Conditions: This optional component is used when there are very specific issues that apply to the MU that may affect the overall management outcome.

MANAGEMENT UNITS

5.1 MANAGEMENT UNIT #1 – LAKE MENDOCINO

Land Use Classification: Class II General Outdoor Recreation.

Recommended Future Land Use and Rationale: *Project Operations/Water Surface*. Lands in this MU were purchased for the creation of Lake Mendocino and were acquired for project operation purposes and are allocated for use as developed public areas. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Figure 3. Recreational Activities Such as Boating are Popular at Lake Mendocino.

Location: Lake Mendocino is a 1,822-acre reservoir located on the East Fork of the Russian River, just outside the City of Ukiah in Mendocino County, California. This MU covers the reservoir itself, up to the high water mark.

Description: Lake Mendocino provides an abundance of outdoor recreation opportunities ranging from camping to fishing to disc golf. The area has a rich Tribal heritage and ongoing presence of the Pomo Indian Tribe, which has a cultural center at Lake Mendocino.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Natural Resource Management:
    a. Evaluate flood/conservation pool levels to optimize habitat conditions, as long as there is no interference with the Project's other authorized purposes, i.e., flood risk management and water supply.
    b. Optimize resources, labor, funds, and partnerships for the prevention of invasive species in Lake Sonoma.
    c. Minimize activities that disturb the scenic beauty of the lake.
    d. Implement erosion reduction measures, such as planting vegetation whenever practical.
2. Environmental Compliance:
    a. Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and to avoid negative effects to public water supply, ensuring public health and safety.
    b. Include both point and non-point sources of water quality problems during decision-making.
3. Economic Impacts:

a. Work with local communities to promote tourism and recreation at the lake to positively affect socioeconomic conditions surrounding the lake.

Development Needs:

1. Implement additional "No Wake" zones on the lake. Zones are already delineated around the boat ramps. Add additional signage and information on the regulations regarding these zones so visitors are aware of the restrictions.
    a. "No Wake" zone for Miti Campground. Boats are parked along the shore due to an absence of a boat ramp, and can, therefore, flood from wave activity. Specifically add a "No Wake" zone to this area and adequate signage.
2. Implement a program to more intensively manage the invasive Quagga and Zebra mussels. It is recommended that USACE partner with stakeholder groups to develop a mussel management plan at Lake Mendocino that would minimize the potential for the introduction of these species and to respond rapidly if they are detected on-site.

5.2 MANAGEMENT UNIT #2 – DAM OPERATIONS, DAM, CONTROL TOWER, SPILLWAY

Land Use Classification: Class VII Nonpublic Use Project Area.

Recommended Future Land Use and Rationale: *Project Operations*. These are the lands acquired for the congressionally authorized purpose of constructing and operating the project. Project operations cover the dam operations and facilities. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: The CVD, control tower (see Map 14), and spillway (see Map 15) are located at the southwestern end of Lake Mendocino.

Figure 4. Paved pathway along the top of the CVD.

Description: Operation of the CVD began in 1959. The earth-filled dam is 160 feet high and the concrete spillway structure is located to the left of the dam embankment. The dam crest is flat and paved in an area accessible to the public, which is in good condition. The dam embankment is steep and there are several drainages in the area. Wildlife commonly observed near the dam include frogs, mice, and snakes. The publicly accessible area includes a vault toilet, comfort station, handicap accessibility, and recreational opportunities such as bird watching. This MU includes two unique wildflower areas: one of the two original sites that is located just west of the spillway, and a more recently identified site that is located just south of the egg collection facility and below the dam.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate flooding to address potential impact to recreational facilities (i.e. campsites, etc.).
2. Natural Resource Management:
    a. Evaluate flood/conservation pool levels to optimize habitat conditions, as long as there is no interference with the Project's other authorized purposes, i.e. flood risk management and water supply.
    b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.
3. Environmental Compliance:
    a. Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems.

b. Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and avoid negative effects to public water supply, ensuring public health and safety.

4. Visitor Information, Education and Outreach:
    a. Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and avoid negative effects to public water supply, ensuring public health and safety.
    b. Promote USACE water safety messaging.
    c. Establish a network among local, state, and Federal agencies concerning the exchange of lake policy and regulation related information for public education and management purposes.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.
    b. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.

Development Needs:

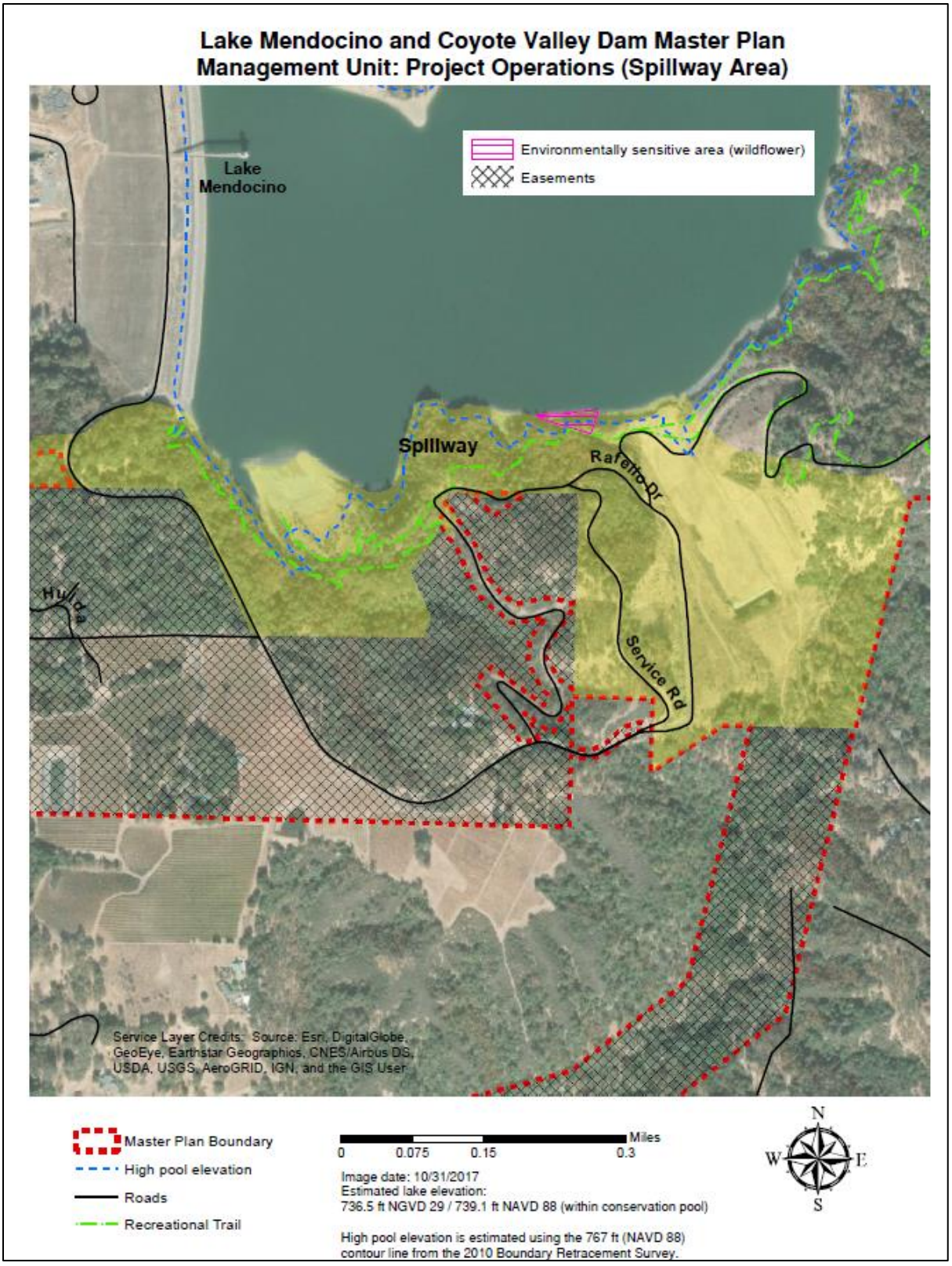
1. Manage the erosion and slope stabilization issues impacting the hillside adjacent to the spillway access road. The hillside experiences frequent erosion and mudslides that cut off access to the spillway. This is the biggest erosion issue facing the Lake Mendocino project. USACE patched the erosion in the past, but a detailed engineering study is required to evaluate and develop potential alternatives to permanently resolve the issue. The 2016 corrective action items report, which is part of the annual dam safety inspection, requested the following to address this issue. At the time of this master plan these corrective actions had been submitted for consideration but not yet implemented.
    a. Engineering study to focus on slope design to prevent future failure - $250,000 estimate
    b. Construction to stabilize the hillside - $5 million estimate
2. Improve existing interpretive signage and develop additional signage near the public entrance to CVD.
3.
4. Design and construct a drainage system at the downstream end of the dam. The 2016 pre-flood recommendation estimate is $155,000 for this effort, which has been requested but not funded at the time of this master plan.
5. Improvements to the access bridge that connects the control tower to the dam are needed. Specifically, the bridge is currently painted with lead-based paint that needs to be removed and re-painted. According to the 2016 pre-flood recommendation estimate, repainting the bridge would cost approximately $400,000, which includes tenting the bridge. This request was submitted, but not funded, at the time of this master plan.

6. Sandblast and repaint the slide gates in the outlet works control tower, which was done approximately 20 years ago. This is estimated to cost $275,000. This request has been submitted but funding had not yet been received at the time of this master plan.

Figure 5. Control tower at the CVD.

Figure 6. Spillway for CVD.

Map 14. Project Operations including USACE Project Offices, Dam, Outlet Works, and Control Tower.



Map 15. Project Operations including the Spillway Area.

5.3 MANAGEMENT UNIT #3 – POMO CULTURAL CENTER

Land Use Classification: Class I High Density Recreation (within Class II General Outdoor Recreation Area)

Recommended Future Land Use and Rationale: *High Density Recreation.* The Pomo Cultural Center (center) is surrounded by a high density recreation land use comprising the Pomo Day Use Areas.

Location: The center is located within the Pomo Day Use Area, in the northwestern corner of Lake Mendocino. The building is accessible via Marina Drive. See Map 22 for location.

Figure 7. Pomo Cultural Center.

Description: The center is operated by the Coyote Valley Band of Pomo Indians and USACE oversees management and maintenance of the building. The construction of the center was proposed in the 1977 Master Plan, which included a conceptual design that was mutually agreed upon by USACE and the Mendo-Lake Pomo Council.

The building itself is a 7,000 square foot structure modeled after a traditional Pomo roundhouse (Figure 7) and features an outdoor amphitheater intended to display and demonstrate traditional Pomo cultural activities such as dancing, basketry, and hunting (**Error! Reference source not found.**).

Figure 8. Tribal decorations and display cases within the Pomo Cultural Center and outdoor amphitheater.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation and increased public access on USACE-managed public lands and water for recreational activities.
2. Visitor Information, Education, and Outreach:
    a. Implement additional educational and outreach programs at the lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology.
    b. Increase public awareness of special activities at the facility.
3. Economic Impacts:
    a. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.
4. Cultural Resources:
    a. Increase public awareness of regional history.
    b. Work with the Tribes to develop public outreach to educate the public regarding the traditional cultural landscapes and Native American interests at Lake Mendocino.
    c. Work with the Pomo Tribe to determine usage goals for existing Pomo Cultural Center.

Development Needs:
Due to operational challenges and necessary renovations, the center has been closed to the public since 2011. This closure has resulted in degradation of the site, and the influx of bats, birds, snakes, and mice within the vacant building. Thorough cleaning and inspection of the building and grounds is necessary to re-open the center.

1. Renovate/repair the building and grounds so the center can be used for interpretive services for the public. The building has not been used in several years, but has the potential to be a main attraction for visitors to Lake Mendocino. The building is in good condition, but repairs and renovations are needed before opening to the public. Renovations needed include, but are not limited to:

a. Bat removal – USACE could potentially partner with the USFWS or another local agency or organization to oversee the removal/relocation of bats and other animals currently living in and around the building.
b. Cleaning – The building has not been used in several years. Deep cleaning is required before opening it to the public.
c. Signage – USACE could update existing interpretive signs and displays, as needed.

Figure 9. Main sign for the Pomo Cultural Center.

2. Re-establish the lease agreement with the Coyote Valley Band of Pomo Indians, and develop a management plan to maintain and operate the center for interpretive use.

Considerations for the future management plan of the Pomo Cultural Center include:

a. Explore future opportunities between USACE, the Tribe and other local partners (e.g. trails groups, schools, libraries, etc.) who have expressed interest in working through the center to provide interpretive services for visitors.
b. As the lake does not currently have a public-facing Visitor Center, the center could double as a ranger station, providing important information on Lake Mendocino and the USACE missions to the public.
c. In order to keep the center open to the public, USACE would need volunteer assistance to operate the center during visiting hours. The center could be operated by a combination of USACE, Tribal, and other partner organization staff. The center could be open part-time, depending upon the availability of staff to operate it.
d. The center is located within a high traffic day use area near the Kyen campground. A concessionaire would greatly benefit this area of Lake Mendocino, and the Tribe has expressed interest in working with local concessionaires to reinvigorate the areas adjacent to the center.

Special Considerations: USACE will work with the Coyote Valley Band of Pomo Indians to determine a sustainable management plan for the center. A new lease will need to be developed between USACE and the Tribe and any organization(s) that may wish to operate the center in the future.

5.4 MANAGEMENT UNIT #4 – UNIQUE WILDFLOWER AREA

Land Use Classification: Class IV Outstanding Natural or Scientific Area/Class VII Non-public Use Project Area

Recommended Future Land Use and Rationale:
Environmentally Sensitive Area. The three unique wildflower areas are located within larger land use areas. The terminology of the land use was updated since the original Master Plan, but the use has not changed. Two of the three sites were originally identified in the 1977 Master Plan, and one additional site has since been identified.

Figure 10. Burke's Goldfields. ***(Source: CDFW)***

Location: The two original sites are located in the Wildlife Management Area (site #1) and in an area next to the spillway (site #2). The newest site is located in an area below the dam (site #3). The original land use classification for sites 1 and 2 is being changed from Class IV Outstanding Natural or Scientific Area to Environmentally Sensitive Area. Site 3 is being changed from Class VII Non-public Use Project Area to Environmentally Sensitive Area.

Description: The topography of the unique wildflower areas is largely flat, with areas of wetlands, vernal pools, and dense riparian habitat. The endangered plant Burke's Goldfields (*Lasthenia burkei*) grows in the unique wildflower areas (Figure 10). A variety of animals can be found in these areas, including: song birds, waterfowl, wild turkeys, frogs, snakes, foxes, coyotes, raccoons, rabbits, and skinks.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Optimize recreational development on the land resources within the project boundary while maintaining or improving the environmentally sustainable resources.
2. Natural Resources Management:
    a. Minimize activities that disturb the scenic beauty of the lake.
    b. Identify and protect unique or sensitive habitat areas.
    c. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities
    d. Stop unauthorized uses of public lands such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.

e. Improve, enhance, restore or rehabilitate vegetation and other environmental conditions, including existing structures and features, for wildlife, fisheries, recreation, aesthetics, woodland, and grassland to promote compatible multiple uses in the park.

3. Environmental Compliance:
    a. Improve the lake's water quality to sustain healthy fish and wildlife populations, habitat conditions, recreation opportunities, and avoid negative effects to public water supply, ensuring public health and safety.
4. Visitor Information, Education and Outreach:
    a. Implement additional educational and outreach programs at the lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology.

Development Needs: It is recommended that USACE continue with the current management practices for these unique wildflower areas in order to maintain and protect the Burke's Goldfields. Interpretive signage that alerts the public to the endangered status of the Burke's Goldfields in appropriate publicly accessible areas is recommended as a protection measure.

Additional management considerations should be focused on annual monitoring that includes an assessment of Burke's goldfields population health and the potential of invasive weed species intrusion, which could do harm to the population by outcompeting this taxon or by changing the ecological conditions of this micro-habitat and potentially cause extirpation. There should also be a focus on minimizing invasive species spread and introductions into the area surrounding Burke's goldfields. Another floristic survey is recommended for each site to further confirm the presence of the Burke's goldfields.

Site #1 Wildlife Management Area: USACE last confirmed the presence of the Burke's Goldfields at this site in 2010. In January 2019, habitat supporting the flower, including two vernal pools, was identified in the Wildlife Management Area, as seen in

Figure 11 and Map 16. This location is in the same general area as identified in the original Master Plan, as seen in . . The site is located in an isolated area away from trails. No improvements are recommended for this site.

Figure 11. Burke's Goldfields site located in the Wildlife Management Area.

Map 16. Location of the Wildflower Area Located within the Wildlife Management Area.

Site #2 Spillway: This site was originally identified in the Master Plan as being located just east of the spillway, close to the shore. USACE staff visited the area in January 2019 to identify the general area where the flower might exist. No such area that had conditions related to the Burke's Goldfields was observed. It is believed that this unique wildflower area has since been eroded or washed away. A future floristic survey is recommended to confirm the presence of the Burke's Goldfields in this location.

Map 17. Wildflower Area Located Near the Spillway.

Site # 3 Below the CVD: This site, located below the CVD and just south of the egg collection facility, was first identified in a 2011 floristic survey (see Map 18). A site visit in January 2019 confirmed the presence of vernal pools, an indicator of Burke's Goldfields habitat (). This area is closed to public access. Development in this area is not recommended due to the presence of the flower and the possibilities to expand its range in the area. USACE should consult with the USFWS on improving the surrounding habitat and potential for spreading the flower.

Figure 12. Burke's Goldfields site identified below the CVD and south of the egg collection facility.

Map 18. Wildflower Area Located Below the CVD.

Special Considerations: USACE should continue with the careful management of the endangered Burke's Goldfields.

Figure 13. The map above is from the 1977 Master Plan and shows the location of 2 Wildflower Areas, as noted by the red circles.

5.5 MANAGEMENT UNIT #5 – WINERY POINT/OTHER AREAS

Land Use Classification: Class VI Historical Area (winery point) and Class IV Outstanding Natural Area (previously developed spring/mossy area) are located within an area classified as Class III Natural Environment Area.

Figure 14. Garzini Winery.

Recommended Future Land Use and Rationale: *Multiple resource use.* This MU includes open land that is not designated as a specific area, although the Shakota Trail runs through the area. It is also comprised of Winery Point, which is recommended to be classified as an *Environmentally Sensitive Area.* Winery point is a historic feature located within a larger land classification area. Although the Shakota Trail provides access to this site, the historical site itself is classified as an environmentally sensitive area due to the cultural significance of the site.

The 1977 Master Plan also identified a previously developed spring and mossy area located as a single point within the larger MU. This area is recommended to be classified as an *Environmentally Sensitive Area*. The terminology of the land uses have been updated since the original Master Plan, but the uses have not changed.

Location: The multiple resource use area, which includes the Winery Point and spring/mossy area sites, is located along the western edge of Lake Mendocino.

Description: The Garzini Winery is located at Winery Point, on the western side of Lake Mendocino. The Garzini family lived at this site and operated the winery from 1911 to 1936. Most of the structures associated with the winery are now underwater, however several concrete structures are still standing. This site has not been designated as a historic site. There have been small-scale excavations of the area that resulted in finding domestic artifacts and building debris[54].

Figure 15. Garzini Winery.

The area where the Garzini Winery and mossy/spring area are located is heavily

[54] Source: Newland, Michael, 1997. *The Garzini Winery 1911–1936: Prohibition and Patron-Client Relations in Coyote Valley, California.*

overgrown, mostly by oak and pine trees, with an abundance of poison oak. Deer and snakes are typically found in the area. The area is accessible to the public via the Shakota Trail.

The site is at risk of erosion and the cliff is deteriorating, posing many safety hazards. There are several unofficial trails to the site suggesting visitors walk through the area, and vandalism is an issue. There is a barbed wire fence around the area to deter visitors from walking near the cliff.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
2. Natural Resource Management:
    a. Minimize activities which disturb the scenic beauty of the lake.
    b. Implement erosion reduction measures, such as planting vegetation whenever practical.
    c. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.
    d. Stop unauthorized uses of public lands such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.
3. Cultural Resources:
    a. Increase public awareness of regional history.
    b. Maintain full compliance with Section 106 and 110 of the NHPA; the Archeological Resources Protection Act; and the Native American Graves Protection and Repatriation Act on public lands surrounding the lake.

Development Needs:
1. The remnant buildings of the Garzini Winery attract vandalism and criminal activity, are a nuisance, and pose safety risks, especially as USACE does not routinely patrol the area due to its remote location. It is recommended that the structures be demolished and removed from the site. The area should be allowed to return to its natural state.
2. Implement a "no wake zone" in this area to prevent further cliff-side erosion (Figure 16).

Figure 16. Cliffside erosion at Winery Point.

3. Until the buildings are torn down and removed, or a decision is made to keep them, it is recommended that better fencing be installed around the area to prevent access to the structures and deter vandalism.
4. In order to preserve the history of the Garzini Winery, the tractor artifact still located at the site could potentially be moved to a local offsite museum, which would require further investigation. (Figure 17).

Special Considerations: USACE cultural staff did a visual assessment of the site in July 2018 and a literature search, and have determined that the site is not of cultural or historical significance.

Figure 17. Tractor artifact at the Garzini Winery site.

Map 19. Location of Winery Point along the Western Edge of Lake Mendocino.

5.6 MANAGEMENT UNIT #6 – SHO-DA-KAI RECREATION AREA

Land Use Classification: Class III Natural Environment Area

Recommended Future Land Use and Rationale: *Low Density Recreation.* While this area is largely undisturbed, there are limited recreational opportunities. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: Sho-da-kai Recreation Area is on Rattlesnake Island, an approximately 3-acre island just east of CVD. The area is generally accessible only by boat; however, sometimes during the summer when the lake level is low enough, it is possible to reach the island on a sand bar that extends from the CVD to the island.

Description: There are no developed facilities on the island and public use is limited to day use activities such as fishing and picnicking. The terrain on the island is rough, with cut banks and is moderately wooded. Animals such as raptors, shore birds, wild turkeys, snakes, and squirrels can be spotted on the island.

Figure 18. Sho-da-kai/Rattlesnake Island on the right, as seen from the dam facing north.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
2. Natural Resource Management:
    a. Minimize activities that disturb the scenic beauty of the lake.
3. General Management:
    a. Develop year-round access to remote park lands in order to better manage all of the park resources during all seasons.

Development Needs: Not applicable. It is recommended that the current management for this area be continued. No additional recreation facilities are recommended as USACE staff do not regularly patrol the island.

Map 20. Location of Sho-da-kai Recreation Area on Rattlesnake Island.

5.7 MANAGEMENT UNIT #7 – CHEKAKA RECREATION AREA

Land Use Classification: Class II General Outdoor Recreation

Recommended Future Land Use and Rationale: *High density recreation*. There are paved roads, a 24 unit campground, an overlook area, restroom facilities, parking lots, the south disc golf course, and trails. There is also a boat ramp, picnic tables, and shelters. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: The Chekaka Campground, South Boat Ramp, Overlook, and Joe Riley Recreation Area are located at the base of the CVD near the USACE administrative buildings. Together they comprise the Chekaka Recreation Area. The area is accessible via Lake Mendocino Drive.

Description:

Campground
The 10-acre Chekaka Campground is not currently in use and has been closed since 2013 due to a lack of USACE resources to operate the campground. This campground is the closest to the City of Ukiah and, therefore, attracts a regular homeless population. This area includes the Kaweyo horse staging area and the trailhead for the Shakota trail. It offers handicap accessible paths and a paved road providing public access to CVD.

This area has not experienced a fire since the lake boundary was established, resulting in a heavy buildup of vegetative fuel. There is management concern about potential wildfires occurring in this area, especially considering the area's close proximity to outside housing developments. There are areas within the Chekaka Campground that are heavily wooded and there is also heavy wildlife use.

Figure 19. South Boat Ramp and Jet Ski Beach.

South Boat Ramp

Located adjacent to Chekaka Campground is the South Boat Ramp, which was constructed in the 1970's, and associated parking lot (Figure 19). An unofficial beach area, commonly referred to as "jet ski beach" (Figure 20), is located next to the boat ramp.

Figure 20. Jet Ski Beach, located below Joe Riley Recreation Area.

Joe Riley Recreation Area

Up the hill behind "jet ski beach" and the boat ramp is Joe Riley Recreation Area, which has several picnic tables, shelters, a restroom, and a parking lot.

Overlook

This is a popular overlook area, located north of Chekaka Campground and Joe Riley Recreation Area, and is frequently used by visitors because it offers a panoramic view of the lake. The vegetation in the area was overgrown and blocked the view in the past; however, vegetation removal and clearing was done in the summer of 2018. The main types of vegetation in the overlook include: manzanita, oak trees, and poison oak. Snakes, mice, and coyotes can be seen in this area. Within the overlook area are picnic tables and shelters, restrooms, and a paved parking lot.

Resource Objectives:

This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.)
    b. Optimize recreational development on the land resources within the project boundary, while maintaining or improving the environmentally sustainable resources.
    c. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
    d. Follow the EOPs associated with recreational use of waterways for all water-based management activities and plans.
    e. Minimize activities that disturb the scenic beauty of the lake.
    f. Increase universally accessible facilities on Lake Mendocino, including ADA.
    g. Evaluate the need for commercial facilities, including concessionaires, on public lands and waters.
2. Natural Resource Management:
    a. Use a watershed approach during the decision-making process.

b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.
c. Stop unauthorized uses of public lands, such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.
d. Maintain scenic overlook areas for public use and clear overgrown vegetation.

3. Environmental Compliance:
    a. Include both point and non-point sources of water quality problems during decision-making.
4. Visitor Information, Education, and Outreach:
    a. Promote USACE water safety messaging.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.
    b. Manage additional commercial development compatible with national USACE policy on both recreation and non-recreational outgrants on public lands classified for High Density Recreation.
    c. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.

Development Needs:

Campground

The Chekaka Campground, in addition to Bushay Campground, are potential sites for the construction of non-camping lodging facilities, such as a small hotel, cabins or yurts. Lake Mendocino would benefit from offering alternative sleeping arrangements in addition to camping. A resort or cabin would attract visitors who do not want to camp, but would want to stay at the Lake, rather than in town, and might attract more long distance visitors. Lake Sonoma introduced a successful pilot cabin (Figure 16) for visitor lodging. The cabin, which cost about $8,000 to construct, can be rented online similarly to the campsites. Since implemented, the cabin has been occupied every weekend during the summer. USACE is looking to construct additional cabins for visitor use in the future. Cabins or similar sleeping structures might also deter homeless persons from squatting in the Chekaka Campground, which is currently closed to the public.

Figure 21. Cabin at Lake Sonoma.

The Chekaka Campground could also be the potential site of a new parking lot, as is described in the following section.

South Boat Ramp
Construction of a new parking area for the South Boat Ramp facility is needed. The *Lake Mendocino South Ramp Boat Launching Facility Feasibility Report*[55] and associated preliminary site plans were developed in 2013. The report proposes a $1.4 million grant be considered by the Boating and Waterways Commission to USACE for the construction of a new parking lot that would provide 63 additional parking spaces. The project is justified due to the annual flooding of the existing parking lot since 2010, when the SWCA raised the normal pool elevation of Lake Mendocino. The inundation of the parking lot resulted in an increase in users to the north boat ramp, which often gets overcrowded with boats.

As there is a documented need for a new parking lot for the South Boat Ramp, and given that there are no dam safety implications, this Master Plan recommends the new parking lot be constructed to accommodate visitors to the area. For additional details on the site layouts and the feasibility report, see Appendix C.

Joe Riley Recreation Area
Develop a marina near the Joe Riley Recreation Area. The Chekaka Recreation Area is a popular destination for boaters and other day use visitors. The area would greatly benefit from a marina, which could provide fuel for boats, bait and tackle for fishing, and concessions. The marina could be built on piers or pilings, and access from Joe Riley Recreation Area would need to be established.

Overlook
1. Conduct regular maintenance of overgrown vegetation that obstructs the view. This site offers one of the best views of Lake Mendocino and should be maintained in order to meet the purpose of this overlook area (Figure 22).

Figure 22. Before and after images of vegetation clearing at the overlook.

[55] Boating and Waterways Commission. 2013. Lake Mendocino South Ramp Boat Launching Facility Feasibility Report, March 20, 2013.

2. Because the overlook is a focal point for visitors to Lake Mendocino, an observation deck or shelter should be constructed for this site. The original 1977 Master Plan recommended an overlook kiosk that was never constructed. The site and building plan for the kiosk are shown in Figure 23. The original recommendation stated:

> "A canopied kiosk will be developed as an interpretive feature at the eastern end of the overlook parking area in Chekaka Recreation Area. The concept of the kiosk is shown on Plate 14 and will incorporate benches, bulletin boards and maps of the lake. The structure will be sighted to provide direct visitor access and a panoramic view of the lake and adjacent land areas."

Nearby Lake Sonoma, which is owned and operated by USACE, has an overlook structure and several shelters with interpretive signs that could be used as a model for the Lake Mendocino overlook (Figure 24). The overlook should incorporate interpretive signage to educate visitors on the natural and cultural features of Lake Mendocino and the area. While a large structure like the one at Lake Sonoma might not be necessary at the Lake Mendocino overlook, it provides an example for what USACE has implemented at other lakes and could be used to further justify the development of the overlook area at Lake Mendocino.

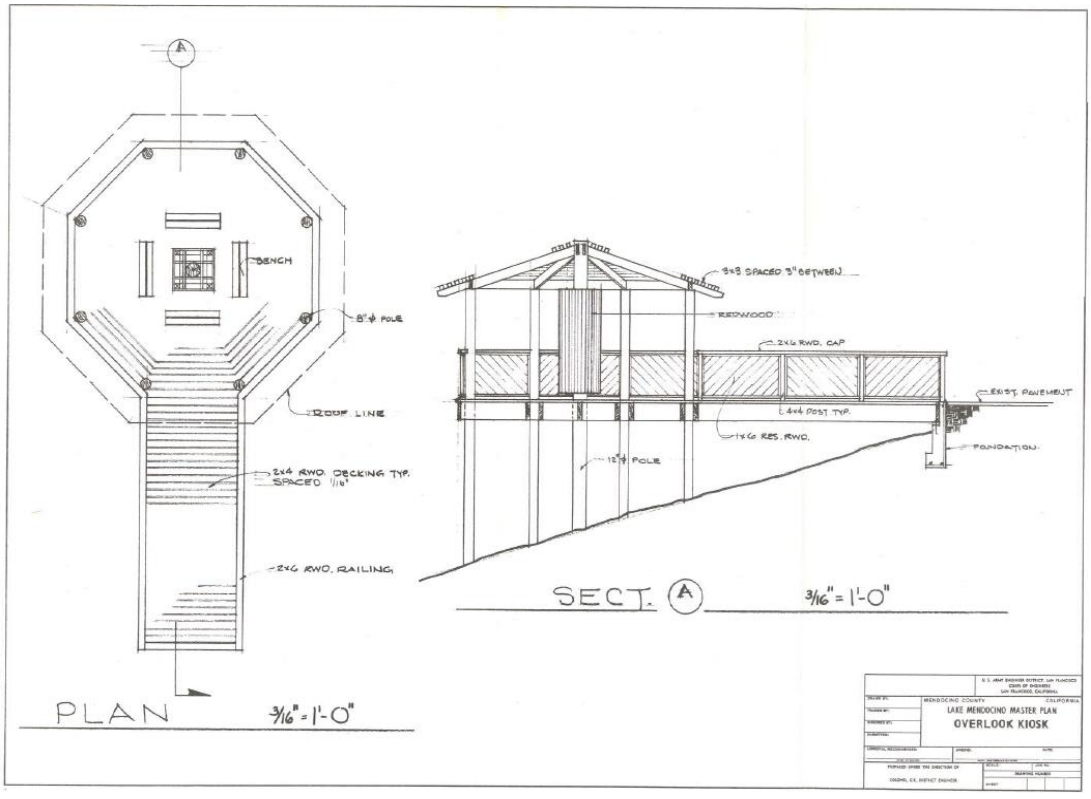


Figure 23. Site and building plan for overlook kiosk from original 1977 Master Plan.

Figure 24. Shelters with interpretive signage (left) and a large wooden overlook structure (right) are the main features of the overlook area at nearby Lake Sonoma.

3. The pavement for the main overlook area parking lot is cracking and needs to be resurfaced. This parking lot experiences high visitor use and parking and should be maintained to accommodate the large number of visitors using the area (Figure 25).

Figure 25. Parking lot at the overlook.

Figure 26. Illegal activity, such as graffiti on the plaque, occurs at the overlook area.

4. Illegal activity occurs at the overlook area. This includes graffiti and vandalism, which have marred the plaque adorning the main overlook feature (Figure 26). To deter future vandalism, it is recommended that security cameras be installed in the area. The cameras would likely need to be installed once a new feature, such as a shelter or overlook structure is developed since there is currently no permanent structure on which the cameras could be mounted.

5. In the past, there was a native plant garden near the pathway that leads to the restroom at the overlook area. The native plant garden should be resurrected and maintained by USACE. The garden will serve as an important interpretive site to discuss the plants and vegetation that exist at Lake Mendocino.

Special Considerations: The homeless population that frequently visits Lake Mendocino is a unique social issue that USACE must manage. The presence of homeless persons within the USACE park boundary poses safety risks to both USACE staff and recreational visitors to the Lake. USACE does not currently have the ability to address this issue and patrol the areas attracting this population. Future partnerships with outside law enforcement entities should be revisited as a means of deterring illegal activity on USACE-owned property. The recommendations provided above for improvements to the Chekaka Recreation Area will hopefully help deter illegal activity in this area.

Additionally, this area has not experienced a fire since the lake boundary was established, resulting in a heavy buildup of vegetative fuel. There is concern about potential wildfires occurring in this area, especially considering the area's close proximity to outside housing developments.

Map 21. The Chekaka Recreation Area, including the Campground, South Boat Ramp, Overlook, and Joe Riley Recreation Area.

5.8 MANAGEMENT UNIT #8 – POMO RECREATION AREA

Land Use Classification: Class II General Outdoor Recreation

Recommended Future Land Use and Rationale: *High density recreation.* The day use areas have restrooms, picnic shelters, and parking lots. The Shakota trail runs through the area. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: The Pomo Recreation Area, which includes the Pomo A, B, and C Day Use Areas, is located in the northwest corner of Lake Mendocino, adjacent to the Kyen Campground. The area is accessible via Marina Drive.

Description: The recreation area consists of the main swimming beach for Lake Mendocino, three separate day use areas (Pomo A, B, C), and the Pomo Cultural Center. The Pomo Cultural Center is identified as a separate MU, see Section 5.3 above. There are restroom and picnic facilities, a parking lot, and the north disc golf course in this recreation area. The area is generally flat and moderately wooded with oak trees, manzanitas, and poison oak. Waterfowl and Canada geese, which are nuisance animals, can typically be found in the area.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.)
    b. Optimize recreational development on land resources within the project boundary, while maintaining or improving the environmentally sustainable resources.
    c. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
    d. Follow the EOPs associated with recreational use of waterways for all water-based management activities and plans.
    e. Minimize activities that disturb the scenic beauty of the lake.
    f. Increase universally accessible facilities on Lake Mendocino, including ADA.
    g. Evaluate the need for commercial facilities, including concessionaires, on public lands and waters.
2. Natural Resource Management:
    a. Use a watershed approach during the decision-making process.
    b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.

c. Stop unauthorized uses of public lands, such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.

3. Environmental Compliance:
    a. Include both point and non-point sources of water quality problems during decision-making.
4. Visitor Information, Education, and Outreach:
    a. Promote USACE water safety messaging.
    b. Implement additional educational and outreach programs at the lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.
    b. Manage additional commercial development compatible with national USACE policy on both recreation and non-recreation outgrants on public lands classified for High Density Recreation.
    c. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.

Development Needs:

1. Continue to update and repair shelters as needed.
2. The designated swimming beach located between Pomo A Day Use Area and Pomo B Day Use Area does not currently meet USACE standards for a recreational beach. It is recommended that a beach nourishment plan be developed as the first step to replenishing the beach, which will level the slope of the beach. An evaluation of designated swimming area standards and how it applies to this area should be included in the beach nourishment plan. This beach is heavily used and the visitor experience would greatly benefit from improvements.
3. Future improvements to the infrastructure in this area should consider changes in water level and be resistant to inundation. This area has flooded in the past, resulting in total inundation of the picnic tables and shelters. Any future development proposed for this area should take this into consideration.
4. It is recommended that USACE pursue a partnership with the Mendocino Transit Authority to provide shuttle or bus service to Lake Mendocino. A permanent or temporary bus stop during the peak summer season could be added in the Pomo Recreation Area since it is located just off Highway 20. This would hopefully increase visitation and provide access for visitors who would otherwise be unable to get to Lake Mendocino. A bus stop could also be added in the Chekaka Recreation Area.

Special Considerations: Flood inundation of infrastructure and resulting environmental and safety implications.

Map 22. Pomo Recreation Area, including Pomo A, B, and C Day Use Areas and Pomo Cultural Center.

5.9 MANAGEMENT UNIT # 9 – KYEN CAMPGROUND/OAK GROVE DAY USE AREA/NORTH BOAT RAMP

Land Use Classification: Class II General Outdoor Recreation

Recommended Future Land Use and Rationale: *High Density Recreation*. There are paved roads, over 103 campground sites, parking lots, restroom facilities, an amphitheater and day use areas within the campground area. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: The Kyen Campground is located on the northern edge of Lake Mendocino, immediately south of Highway 20, and is accessible via Marina Drive. It is adjacent to the Pomo Day Use Areas and the Pomo Cultural Center. See Map 22 for the location.

Description: The Kyen Campground consists of 103 campsites. The campsites on the south side of Marina Drive and the shoreline day use area typically flood during the winter. The majority of the campsites are located on the north side of Marina Drive, further away from the lake. The area along the Russian River inlet into Lake Mendocino is very steep with little natural cover, resulting in high erosion potential. The MU has exposed shorelines and is moderately wooded with oak trees, manzanita, poison oak, and blackberry bushes. Feral cats also frequent the area.

The area between the North Boat Ramp and the Highway 20 Bridge, located east of the campground, was largely altered due to previous road construction. The Oak Grove Day Use area is also included in this MU.

The North Boat Ramp is located at the northern end of Lake Mendocino, directly to the east of Kyen Campground and is accessible via Highway 20 and Marina Drive. The Highway 20 turnout area is located directly off of the Highway, about 1,000 feet from the North Boat Ramp. The land for the Highway 20 turnout area is owned by USACE, but Caltrans has an easement for the road. In the past, there was a marina and concessionaire located at the North Boat Ramp (same owner as the marina at nearby Lake Sonoma). There is currently no concessionaire operating in the area. USACE rangers direct heavy parking lot traffic during peak times.

The Kyen campground was opened in February 2018 to hold up to 29 temporary housing units to accommodate Mendocino County residents who were displaced by the wildfires in October 2017. The FEMA disaster program is typically 18 months in length; however, it is possible that the program will be extended for a longer duration at Lake Mendocino.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive

signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.).

b. Optimize recreational development on the land resources within the project boundary, while maintaining or improving the environmentally sustainable resources.
c. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
d. Follow the EOPs associated with recreational use of waterways for all water-based management activities and plans.
e. Minimize activities that disturb the scenic beauty of the lake.
f. Increase universally accessible facilities on Lake Mendocino, including ADA.
g. Evaluate the need for commercial facilities, including concessionaires, on public lands and waters.

2. Natural Resource Management:
    a. Use a watershed approach during the decision-making process.
    b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.
    c. Stop unauthorized uses of public lands such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.
3. Environmental Compliance:
    a. Include both point and non-point sources of water quality problems during decision-making.
4. Visitor Information, Education, and Outreach:
    a. Promote USACE water safety messaging.
    b. Implement additional educational and outreach programs at the lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.
    b. Manage additional commercial development compatible with national USACE policy on both recreation and non-recreational outgrants on public lands classified for High Density Recreation.
    c. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.

Development Needs:

Kyen Campground

1. The existing fee booth located at the entrance to the campground is inadequate to support USACE ranger duties. When stationed inside the booth, rangers have poor visibility outside the booth, posing safety risks to them. Theft of the fees is a recurring issue. This Master Plan proposes two options for improvement of the fee booth:
    a. Renovate the fee booth to improve visibility for rangers. Continue to have rangers staff the booth and collect fees. Construct exclusion gates at

the entrance to prevent cars from entering the campground after hours in order to reduce theft from the fee booth.

b. Replace the existing fee booth with an automated, hardened booth. A brick structure enclosing the payment station could help deter theft. Construction of an automated booth would remove the need for rangers on-site, allowing them to patrol other areas of the Lake. Implementing an automated pay station would allow visitors to pay with a credit card, reducing cash and theft. USACE should purchase automated fee booths for Kyen and other campgrounds. The Ventech system or a similar system could be used for this effort. Under this option, exclusion gates should also be constructed at the entrance to prevent cars from entering the campground after hours and reduce theft from the fee booth.

2. Each campsite should be equipped with full utility hookups, including electric, sewer, and water. Recreation vehicle hookups and dump stations should also be added at several campsites.
3. Upgrades are needed to campground Loops A, B, and D. This includes renovations for the bathrooms, picnic tables and repaving/repainting the roads throughout the campground. Campground Loop C should be left as a primitive campground since it gets inundated regularly. Invasive species management is needed in Loop C.
4. An underutilized amphitheater is located within the Kyen campground. It is recommended that USACE implement an interpretive program that can use the amphitheater for events and outreach. USACE should pursue partnerships with the Student Conservation Association, Water Safety Council, and others to provide interpretive services at the campground.

North Boat Ramp

1. This Master Plan recommends constructing a marina and concessionaire near the boat ramp and Oak Grove Day Use Area. In the past, there was a marina and the public has expressed interest in bringing it back. There is existing infrastructure for a potential concessionaire, which would be beneficial for both the day use visitors and overnight campers using this area. The previous concessionaire was shut down due to contamination in the area, which was remediated in 2014.
2. The bathroom at the boat ramp is in disrepair and must be torn down and reconstructed.

Invasive Species Management

1. Construct exclusion gates at both ends of Marina Drive to prevent the spread of aquatic invasive species on boats. This measure would limit the number of vehicles entering the area and would allow USACE rangers to inspect the vehicles as needed. The gates would block the road during overnight hours and be open during the day.
2. Management of poison oak and Himalayan blackberry is needed throughout all campgrounds and day use areas. In the past, there was a pest management contract, which USACE should bring back.

Special Considerations: Floods can inundate the infrastructure, resulting in environmental and safety implications.

5.10 MANAGEMENT UNIT # 10 – MITI RECREATION AREA

Land Use Classification: Class II-general outdoor recreation

Recommended Future Land Use and Rationale: *Low Density Recreation.* The Miti Recreation Area/Boat-In Campground is low density due to the boat-in nature of the campground and limited access. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: The area is located on an eastern peninsula that juts out into Lake Mendocino. It is located adjacent to the wildlife management area.

Description: The Miti Recreation Area/Boat-In Campground includes a primitive campground with 18 campsites. Other than the campsites, there are no major improvements and the area is accessible only by foot or boat. The area is heavily wooded.

Figure 27. Beach used to park boats at Miti Campground.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.).
    b. Optimize recreational development on land resources within the project boundary, while maintaining or improving the environmentally sustainable resources.
    c. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
    d. Follow the EOPs associated with recreational use of waterways for all water-based management activities and plans.
    e. Minimize activities that disturb the scenic beauty of the lake.
2. Natural Resource Management:
    a. Use a watershed approach during the decision-making process.
    b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.
    c. Stop unauthorized uses of public lands such as unpermitted structures, clearing of vegetation, control of animals, unauthorized roadways, ORV use, trash dumping, and poaching that create negative environmental impacts.

3. Environmental Compliance:
    a. Include both point and non-point sources of water quality problems during decision-making.
4. Visitor Information, Education, and Outreach:
    a. Promote USACE water safety messaging.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.

Development Needs:

1. The campsite facilities at the Miti Campground need to be upgraded or replaced. Many of the picnic tables and fire pits are in poor condition (see Figure 23).
2. Remove an old fence in the campground through a debris removal project.
3. A horse staging area should be developed just north of the campground since the eastern side of the lake attracts horseback riders.
4. The campground is in need of bear-proof garbage receptacles.

Figure 28. Deteriorating campsite facilities at Miti Campground.

Map 23. Miti Recreation Area on the Eastern Edge of Lake Mendocino.

5.11 MANAGEMENT UNIT # 11 – WILDLIFE MANAGEMENT AREA

Land Use Classification: Class V Wildlife Management Area

Recommended Future Land Use and Rationale: *Wildlife Management.* This area's primary purpose is wildlife management, and it is only accessible via boat and hiking trails.

Location: The wildlife management area is a narrow strip of land located along the southeastern side of Lake Mendocino. The area is located just south of the Bushay Recreation Area to the spillway and runs adjacent to the Miti Campground Area. The wildlife management area does not include Miti Peninsula or the campground.

Description: Small game hunting has historically been permitted in the wildlife management area, but has recently been prohibited by USACE rangers for safety reasons. The area is accessible by hiking trails and by boat. Popular activities that take place within the area include hiking, photography, and bird watching.

The area is partly located within the floodplain, has areas of exposed shoreline, and is moderately wooded with oak trees, manzanita, and poison oak. A variety of wildlife can be found in the wildlife management area, including: raptors, song birds, waterfowl, wild turkey, frogs, snakes, deer, fox, coyote, rabbits, raccoons, and mice.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.).
2. Natural Resource Management:
    a. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
    b. Actively manage and conserve fish and wildlife resources, with an emphasis on special status species, by implementing ecosystem management principles.
    c. Minimize activities that disturb the scenic beauty of the lake.
    d. Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats.
    e. Identify and protect unique or sensitive habitat areas.
    f. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities
    g. Improve, enhance, restore or rehabilitate vegetation and other environmental conditions, including existing structures and features, for wildlife, fisheries,

recreation, aesthetics, woodland, and grassland to promote compatible multiple uses in the park.

3. Environmental Compliance:
    a. Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems.
    b. Educate visitors and volunteers on laws, regulations, and policies regarding, vegetation modification, earth moving activities, and control of animals (e.g. trail maintenance, erosion control, facility improvements, and leash laws).

Development Needs:

1. The Kaweyo trail runs through the wildlife management area and is in need of enhancements that could be accomplished through regular trail maintenance.
2. The connection of the Kaweyo trail to the Shakota trail in order to create a loop trail around Lake Mendocino is recommended and should be explored. Cultural resources would need to be considered for this proposal.
3. USACE should pursue options for managing the feral pigs that can be found in the wildlife management area. The pigs cause extensive damage to habitat and vegetation and are a nuisance. A managed pig hunt or other depredation technique should be implemented to control and reduce the damage.

Special Considerations: Any development of a loop trail connecting the Kaweyo and Shakota trails should consider the current land use classification as a wildlife management area, and any development plans should explicitly limit future expansion of the trail beyond low-density recreation use. In order to complete a loop trail managed by USACE, any property held in an easement where the trail would be located would need to be acquired in fee title for recreational purposes.

Map 24. The Wildlife Management Area along the Eastern Edge of Lake Mendocino.

5.12 MANAGEMENT UNIT # 12 – BUSHAY CAMPGROUND/MESA DAY USE AREA

Land Use Classification: Class II-general outdoor recreation

Recommended Future Land Use and Rationale: *High density recreation.* Bushay Campground/Mesa Day Use Area is a heavily used recreational area. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: Bushay Campground and Mesa Day Use Area are located at the northeastern corner of the lake. The road to the area, Inlet Road, which follows the East Fork of the Russian River, is accessible via Highway 20.

Description: Inlet Road is approximately 13 feet above the river, and therefore the road regularly floods. Therefore, the campground is closed during the winter, even though the campsites are elevated high enough so they do not flood. There are paved roads, over 160 campground sites, restroom and picnic facilities, and trails to access the lake, including the Kaweyo trail. The campground includes the Mesa Day Use Area.

The topography of the Bushay Campground and Mesa Day Use Area is mostly flat and moderately wooded with oak trees, manzanita, and poison oak. Deer, wild turkeys, and squirrels can be spotted in the area.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives:
    a. Evaluate the need for improved recreation facilities (i.e. campsites, picnic facilities, viewing areas, trails, dog off-leash area, courtesy docks, interpretive signs/exhibits, and parking lots) and increased public access on USACE-managed public lands and water for recreational activities (i.e. camping, walking, hiking, biking, fishing, wildlife viewing, etc.).
    b. Optimize recreational development on the land resources within the project boundary, while maintaining or improving the environmentally sustainable resources.
    c. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
    d. Follow the EOPs associated with recreational use of waterways for all water-based management activities and plans.
    e. Minimize activities that disturb the scenic beauty of the lake.
    f. Increase universally accessible facilities on Lake Mendocino, including ADA.
    g. Evaluate the need for commercial facilities, including concessionaires, on public lands and waters.
2. Natural Resource Management:
    a. Use a watershed approach during the decision-making process.

b. Increase visitor awareness of impacts caused by misuse of natural resources through improved public participation programs, media information programs, and interpretive activities.

3. Environmental Compliance:
    a. Include both point and non-point sources of water quality problems during decision-making.
4. Visitor Information, Education, and Outreach:
    a. Promote USACE water safety messaging.
    b. Implement additional education and outreach programs at the lake. Topics may include: water quality, history, cultural resources, water safety, recreation, nature, and ecology.
5. Economic Impacts:
    a. Balance economic and environmental interests involving Lake Mendocino.
    b. Manage additional commercial development compatible with the national USACE policy on both recreation and non-recreational outgrants on public lands classified for High Density Recreation.
    c. Work with local communities to promote tourism and recreation use of the lake to positively affect socioeconomic conditions surrounding the lake.
6. General Management:
    a. Develop year-round access to remote park lands in order to better manage all of the park resources during all seasons.

Development Needs:

Inlet Road

1. Inlet Road, the only vehicle access route to Bushay Campground and Mesa Day Use Area for the public, suffers frequent inundation, causing closure to the popular campground. It is recommended that Inlet Road be raised in order to ensure year-round access for the public. The frequent inundation of Inlet Road causes additional environmental concerns, especially as the porta-potties and picnic tables are carried into the Lake by the flooding. USACE was given permission from the adjacent landowner in the past to access the campground via the private property in emergency situations; however, such access is dependent upon the landowner's agreement and is not open to the public.

Figure 29. View of Inlet Road leading to Bushay Campground.

2. Inlet Road should be widened in order to create designated parking areas for lake access.

Bushay Campground

1. It is recommended that the existing fee booth be renovated or replaced to provide better ranger safety and automated fee collection to prevent theft. See further details for this

recommendation under the "Development Needs" (Section 5.9) for the Kyen Campground MU.

2. Each campsite should be equipped with full utility hookups, including electric, sewer, and water. This would include upgrading the Campground Host's vault toilet to septic. There is currently no sewer hookup and therefore vault toilets are used instead, which require regular maintenance by park rangers. Septic is used elsewhere in the park, including the showers in Kyen Campground, and should be implemented in Bushay Campground.
3. Restroom #8 in the Fig Loop needs to be upgraded. All other restrooms were upgraded in the recent past.
3. Construct a horse staging parking lot near the Kaweyo trailhead/horse trail and pave the road that leads to the trailhead.
4. An underutilized amphitheater is located within Bushay Campground. It is recommended that USACE implement an interpretive program that can use the amphitheater for events and outreach. USACE should pursue partnerships with the Student Conservation Association, Water Safety Council, and others to provide interpretive services at the campground.
5. Bushay Campground is another prime location, in addition to Chekaka Campground, to offer a non-camping lodging option such as a small resort or cabins. Such development would require the above mentioned improvements for Inlet Road. The resort or cabins would be best located in either the Little Bear or Fig Loops of the campground. For additional details, refer to "Development Needs" (Section 5.7) under the Chekaka Recreation Area MU.

Special Considerations: Improvements to Inlet Road to alleviate the recurring flooding will allow for future development in Bushay Campground.

Map 25. Bushay Campground Located on Northeastern Corner of Lake Mendocino, Including the Mesa Day Use Area.

5.13 MANAGEMENT UNIT # 13 – BILL TOWNSEND FISH HATCHERY

Land Use Classification: Class VII: Nonpublic use project area. This includes areas that can be altered from their natural conditions for project use, such as control towers, the spillway and the dam.

Recommended Future Land Use and Rationale: *Project Operations.* This includes lands required for the dam, spillway, offices, maintenance facilities, and other areas that are used solely for the operation of the project. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Figure 30. Bill Townsend Fish Hatchery as Seen From the Top of the CVD.

Location: The hatchery is located at the base of the CVD.

Description: The Bill Townsend Fish Hatchery at Lake Mendocino is a collection facility for Steelhead Trout eggs. The eggs are fertilized at the hatchery and are then transported to the fish hatchery at Lake Sonoma, where they are raised. The Steelhead Trout are then returned to Lake Mendocino for 30 days then released into the Russian River. USACE has a contract with the CDFW, which operates the hatchery and oversees the fish collection. The Ukiah Rod and Gun Club, located adjacent to the fish hatchery building, assists with the release of the Steelhead Trout eggs. See Project Operations Map 14 for the location of the hatchery.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1) Natural Resource Management
   a) Actively manage and conserve fish and wildlife resources, with an emphasis on special status species, by implementing ecosystem management principles.
2) Environmental Compliance
   a) Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems.
3) Visitor Information, Education, and Outreach

a) Implement additional education and outreach programs at the lake. Topics may include: water quality, history, cultural resources, fisheries, water safety, recreation, nature, and ecology.
b) Increase public awareness of special activities at the facility.

Development Needs:
The main objective for this MU is to maintain the integrity of the structures and infrastructure that support this important facility. As of July 2018, there were several maintenance issues that needed correction at the facility, which were expressed in a letter dated 11 July 2018 from the CDFW to USACE. It is recommended in this Master Plan that the necessary repairs be made to support a fully functioning fish hatchery. The repairs needed at the time included, but are not limited to, the following:

- Replacement of alarm and backup battery in the event of a power outage
- Construction of a permanent roof over the hatchery rearing ponds to provide shade and protection
- Replacement and repair of office windows and flooring

Additional overall upgrades are needed to the interpretive displays and signage at the facility.

Special Considerations: Maintain partnerships with the CDFW and the Ukiah Rod and Gun Club.

5.14 MANAGEMENT UNIT # 14 – DISC GOLF COURSE

Land Use Classification: Class II General Outdoor Recreation

Recommended Future Land Use and Rationale: *High density recreation.* The north and south disc golf courses are part of the Kyen Campground and the Chekaka Campground; however, they were given their own MU due to the unique nature of the activity and recommendations.

Location: The north disc golf course is adjacent to the parking lot in the Pomo A Recreation Area and Kyen Campground. The south disc golf course is located at the overlook day use area near the south boat ramp and Chekaka Campground.

Description: The disc golf course was established in the 1990's. The course length spans over 4,000 feet and is divided into the north course and south course. The south disc golf course consists of 18 holes, each with an alternate location. The tees are cement or rubber matting and most holes have light to moderate amounts of trees. The north disc golf course consists of 9 holes, each with an alternate location. The tees are rubber matting and the holes are mostly medium to heavily wooded.

Figure 31. Disc golf basket.

Resource Objectives:

This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives
    a. Evaluate the need for improved recreation facilities and increased public access on USACE-managed public lands and water for recreational activities.
    b. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
2. Natural Resource Management
    a. Minimize activities that disturb the scenic beauty of the lake.
3. Environmental Compliance
    a. Improve coordination, communication, and cooperation between regulating agencies and non-governmental organizations to resolve and/or mitigate environmental problems.
4. Visitor Information, Education, and Outreach
    a. Increase public awareness of special activities at the facility.

Development Needs:

1. It is recommended that a second alternate hole be added to both the north and south disc golf courses. This desire was expressed by the local visitors who regularly use the course. Additionally, it is recommended that the course be upgraded with moveable foundations. This will allow the baskets to be moved and the course to be modified more often, providing variety to the course.

2. USACE should support and promote disc golf tournaments at Lake Mendocino. This would be a fairly low effort way to attract more visitors to the lake for this free activity.

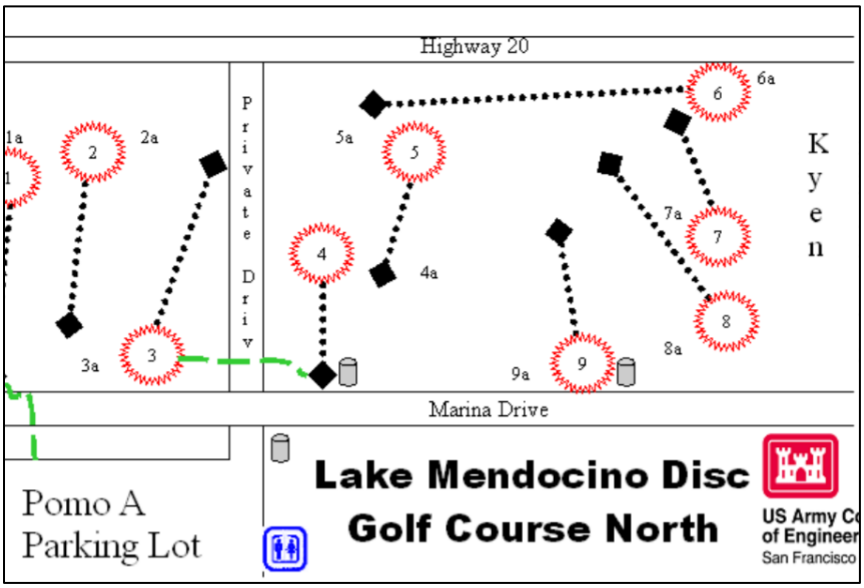


Figure 32. Map for the north disc golf course.

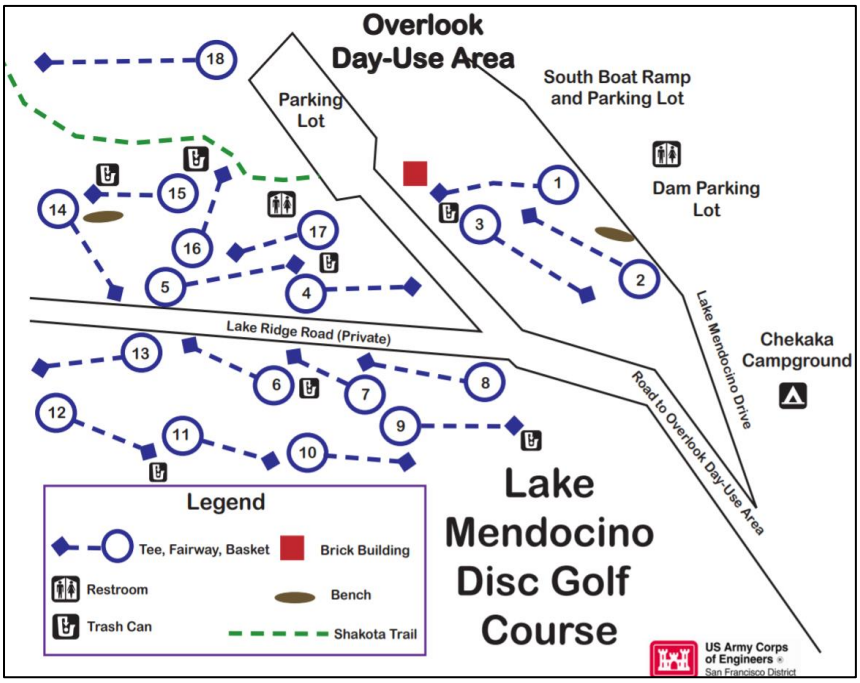


Figure 33. Map for the south disc golf course.

5.15 MANAGEMENT UNIT # 15 – PROJECT ADMINISTRATIVE BUILDINGS

Land Use Classification: Class II General Outdoor Recreation Area.

Recommended Future Land Use and Rationale: *Project Operations.* This includes lands required for the dam, spillway, offices, maintenance facilities, and other areas that are used solely for the operation of the project. The terminology of the land use was updated since the original Master Plan, but the use has not changed.

Location: USACE administrative buildings for Lake Mendocino are located at the base of the CVD on Lake Mendocino Drive, south of the Chekaka Recreation Area.

Description: Lake Mendocino has several project buildings operated by USACE that support the administrative functions. The area is gated and generally closed to public access. Animals that can be found near the offices include snakes, mule deer, and mice. See Project Operations Map 14 for the location of the USACE administrative buildings.

Resource Objectives:
This MU meets the following resource objectives for the Lake Mendocino Master Plan:

1. Recreational Objectives
    a. Evaluate the need for improved recreation facilities and increased public access on USACE-managed public lands and water for recreational activities.
    b. Regularly monitor recreational resources to ensure the recreational experience, environmental quality, and public safety are maintained.
2. Natural Resource Management
    a. Minimize activities that disturb the scenic beauty of the lake.
3. Environmental Compliance
    a. Comply with USACE sustainability requirements.

Development Needs:

1. Upgrades are needed to multiple buildings with the project administration area:
    a. The bathrooms in building #1 are very old and use water inefficiently, and are in need of renovation.
    b. The wood shed needs to be modernized.
    c. An alarm system for the buildings is necessary to ensure the safety of USACE staff and contractors. This is especially justified given the illegal activities that occur regularly within the Lake Mendocino project boundary, and given the project administration area's close proximity to Chekaka Campground where homeless persons often frequent.
2. Build housing for multiple rangers to use, in accordance with USACE policies.

Special Considerations: Not applicable

CHAPTER 6 – SPECIAL TOPICS/ISSUES/CONSIDERATIONS

This chapter discusses the special topics, issues, and considerations that will be critical to the future management of Lake Mendocino, as identified by USACE staff and through public involvement. Special topics, issues, and considerations are defined in this context as any problems, concerns, and/or needs that could affect or are affecting the stewardship and management potential of the lands and waters under the jurisdiction of the San Francisco District, Lake Mendocino Project Office Area of Responsibility. For simplicity, the topics are discussed below under generalized headings.

Public Safety

- Lake Mendocino experiences a variety of illegal activities ranging from graffiti and drug use to occupancy of campgrounds by homeless persons. Safety concerns for the USACE staff and the public will be considered in the future management of Lake Mendocino.

Partnership

- USACE will seek out future partnerships and collaboration with other Federal, Tribal, state and local agencies to support the management and operation of Lake Mendocino, as needed.
- USACE will continue with its existing partnerships that aid in the operation of various facilities at Lake Mendocino.

Public Outreach

- Educate the public on invasive species, unauthorized trails, water safety, etc. Discuss the effects that these issues have on ecosystem health and public safety.
- Educate the public regarding cultural and historic landscapes.

Tribal Coordination

- Continue coordination with local Tribes and plan for the future of the Pomo Cultural Center.

CHAPTER 7 – AGENCY AND PUBLIC COORDINATION

In 2017, USACE began revising the Lake Mendocino Master Plan, which was last updated in 1977. In February 2018, USACE held a public meeting to kick off the master planning process. The purpose of this meeting was to seek public input regarding (1) the long-range goals for the Lake Mendocino Master Plan and (2) the management and development of project lands and water. Additional coordination with Tribal and other agency representatives was done during the planning process.

Draft Master Plan/Draft EA

The Draft Master Plan and EA will be released for a 30-day public review period in early 2019. Additional public meetings will be held at that time. The Final Master Plan and EA will take into consideration public input and comments received during the review period.

Figure 34. A kick off meeting was held for the public in Ukiah in February 2018.

Summary of Public Comments

Below are the main topics of interest and recommendations from the initial kickoff public meetings in February 2018. A total of 23 comments were received. Based on two comments received requesting separate Tribal coordination, USACE gave a presentation on the master planning effort to the Mendocino, Lake Sonoma Tribal Environmental Program in March 2018. Another meeting to discuss culturally sensitive topics with the Tribe took place in November 2018. A third meeting with the Tribe is expected in spring 2019, in advance of public review release of the draft Master Plan. A more in-depth summary of public comments following the formal public review period for this draft Master Plan will be included in the Final Lake Mendocino Master Plan.

<u>Recreation:</u>

1. Keep campgrounds open for public use and add a store for campers to use.
2. Build longer boat ramps to allow lake access during lower water level conditions and re-institute boat ramp fees, which will provide additional revenue for maintenance of the lake.
3. Add a paved walking trail and exercise stations/outdoor gym around the lake.
4. Establish a “trail around the lake” by closing trail gaps on the north and north-east sides of the lake.
5. Import sand to build a better beach at Pomo B and Oak Grove Day Use Areas.
6. Add signage for trails.
7. Have boat, kayak, canoe, and stand-up paddleboard rentals at the north side of the lake.

8. Continue to allow horseback riding as there are limited public lands open for horseback riding in Mendocino County. Keep Bushay Campground open to horses and add dedicated horse trailer parking spots.
9. Make campsites dog friendly and add a fenced off-leash dog park.
10. Public use areas are not well maintained by USACE and staffing at the lake is limited.
11. Projects such as expanding campgrounds, roads, boat launches and septic systems should consider the current proposal to raise the dam.
12. Passive, non-motorized use should be prioritized.
13. Trails should continue as exclusively passive (non-motorized).
14. All efforts to budget staff time to support the maintenance and development of trails should be pursued.
15. "Quiet days" should be established with trolling motors only during the winter months and select "quiet days" two to three days a week year-round.
16. Lake Mendocino has a number of redundant roads that should be decommissioned or converted to trails.
17. Continue the practice of having a specific ranger act as liaison with groups like the Ukiah Valley Trail Group and establish a protocol to ensure a seamless transition when new staff assignments are made.
18. Expedite approval of trail projects with a specific goal for making decisions.

Water Management:

1. The release of water from the CVD creates a foul odor that impacts nearby residents. USACE should provide residents with a schedule for releases, and air quality testing would be useful.
2. Serious consideration should be given to "fixing" the spillway.

Safety:

1. Need consistent law enforcement, including speed control for cars. Additional signage may help prevent speeding and entrance fees might reduce dumping, drug use, and other illegal activities. Establish ranger patrols of the lake with citations issued for boater speeding and loud stereos.
2. Need rangers or Sheriffs patrolling the lake in boats and patrolling the area at night. The crime and drug problems increased significantly over the past 15 years.
3. A functioning and proper warning system for the dam needs to become a high priority for the protection of the community.

Environmental Management:

1. Mendocino and Sonoma Counties are urging USACE to partner with them on a program to prevent the quagga mussel from being introduced to the lakes by watercraft.
2. Clear out brush to reduce the tick problem.

Other:

1. There is a large homeless problem, with many homeless people choosing to stay in campgrounds at Lake Mendocino. Recommend designating a free camping area for the homeless.
2. Do not let the public land surround Lake Mendocino be privately developed.

3. Lack of resources to manage the lake are negatively impacting the user experience. Usage is down to the point that it is negatively affecting the local economy that depends on their visits.

CHAPTER 8 – SUMMARY AND RECOMMENDATIONS

8.1 SUMMARY OVERVIEW

The proposals made in previous chapters of this Master Plan are for the courses of action necessary to manage Lake Mendocino. Actions set forth in this plan can promote the future health and sustainability of Lake Mendocino's natural resources while still allowing for continued use and development. The factors considered cover a broad spectrum of issues including, but not limited to, public use, the environment, socioeconomic considerations, and staffing levels. Information on each topic was thoroughly researched and discussed by the Project Delivery Team before any proposals were made.

This Master Plan is a living document that establishes the basic direction for development and management of Lake Mendocino consistent with the capacity of the resources present and public needs. The Master Plan is also flexible in that supplements may be achieved through a formal process to address unforeseen needs, and evaluations of future actions can tier off and utilize the information in the Master Plan NEPA document (a draft EA is included with this draft Master Plan) as needed. The Master Plan will be periodically reviewed to facilitate the evaluation and utilization of new information as it becomes available, subject to funding.

The overall Master Plan provides guidelines for land use activities, improvement of environmental quality, and protection of cultural resources. Additionally, the Master Plan provides management with critical information necessary to determine funding levels for operations, maintenance, and staffing needs.

8.2 LAND CLASSIFICATIONS

As described in detail in Chapter 5, the project delivery team strived to achieve a 'balanced' approach in making the land classification decisions. The team took environmental constraints, regulations, ordinances, opportunities, and public concerns into consideration when determining land classification for this revision to the Lake Mendocino Master Plan, which included but were not limited to:

- How lands were previously classified in the original Master Plan
- Land allocations
- Environmental and cultural considerations
- Existing Federal, state, and local laws and regulations
- Development or land management adjacent to USACE-managed property
- Activities adjacent to USACE-managed property
- Recreational and visitation trends
- Public and agency input
- Funding and staffing constraints

8.3 RECOMMENDATION

This Master Plan shall be followed in managing the resources at Lake Mendocino. The policies and objectives within this Master Plan are consistent with authorized project purposes, land allocations, resource capabilities, and accommodate Federal, state, local and Tribal needs. These policies and objectives represent sound stewardship of resources and increase opportunities for public enjoyment of outdoor recreation activities. It is recommended that this Master Plan be approved as the basis for future development and management of Lake Mendocino's land and water resources.

Table 8 Summary of Development Recommendations for the Lake Mendocino Management Units.

Management Unit	Recommended Land Use	Recommendations
1. Lake Mendocino	Project Operations/Water Surface	1. Implement additional "No Wake" zones on the lake, including "No Wake" signage at Miti Campground. 2. Implement a program to more intensively manage the invasive Quagga and Zebra mussels. It is recommended that USACE partner with stakeholder groups to develop a mussel management plan at Lake Mendocino that would minimize the potential for the introduction of these species and to respond rapidly if they are detected on-site.
2. Dam Operations, Dam, Control Tower, Spillway	Project Operations	1. Manage the erosion and slope stabilization issues impacting the hillside adjacent to the spillway access road, including an engineering study and construction to stabilize the hillside. 2. Improve existing interpretive signage and develop additional signage near the public entrance to CVD. 3. Design and construct a drainage system at the downstream end of the dam. 4. Improvements to the access bridge that connects the control tower to the dam are needed. Specifically, the bridge is currently painted with lead-based paint that needs to be removed and re-painted. 5. Sandblast and repaint the slide gates in the outlet works control tower, which was done approximately 20 years ago.
3. Pomo Cultural Center	High Density Recreation	1. Renovate the Pomo Cultural Center so it can be utilized for interpretive services for the public, including bat removal, cleaning, and updated signage. 2. Partner with Tribe or other organization(s) to maintain and operate the Pomo Cultural Center for interpretive use. Renewal of leases with the Tribe and other agreements would be required for defining the terms of the partnerships.
4. Unique Wildflower Area	Environmentally Sensitive Area	1. It is recommended that USACE continue with the current management practices for these unique wildflower areas in order to maintain and protect the Burke's Goldfields. Interpretive signage that alerts the public to the endangered status of the Burke's Goldfields in appropriate publicly accessible areas is recommended as a protection measure.

5. Winery Point	Environmentally Sensitive Area	1. It is recommended that the structures be demolished and removed from the site due to the vandalism they attract. The area should be allowed to return to its natural state. 2. Implement a "no wake zone" in this area to prevent further cliff-side erosion. 3. Until the buildings are torn down and removed, or a decision is made to keep them, it is recommended that better fencing be installed around the area to prevent access to the structures and deter vandalism. 4. In order to preserve the cultural history of the Garzini Winery, the tractor artifact located at the current site could be moved to an area appropriate for interpretation.
6. Sho-da-kai Recreation Area	Low Density Recreation	1. It is recommended that the current management for this area be continued. No additional recreation facilities are recommended as USACE staff do not regularly patrol the island.
7. Chekaka Recreation Area	High Density Recreation	1. Chekaka Campground: The Chekaka Campground, in addition to Bushay Campground, are potential sites for the construction of non-camping lodging facilities, such as a small hotel, cabins or yurts. Lake Mendocino would benefit from offering alternative sleeping arrangements in addition to camping. A resort or cabin would attract visitors who do not want to camp, but would want to stay at the Lake, rather than in town, and might attract more long distance visitors. 2. South Boat Ramp: Construction of a new parking area for the South Boat Ramp facility is needed. 3. Joe Riley Recreation Area: Develop a marina near the Joe Riley Recreation Area. The area would greatly benefit from a marina, which could provide fuel for boats, bait and tackle for fishing, and concessions. The marina could be built on piers or pilings, and access to the marina from Joe Riley Recreation Area would need to be established. 4. Overlook: Conduct regular maintenance of overgrown vegetation that obstructs the view. 5. Overlook: Because the overlook is a focal point for visitors to Lake Mendocino, an observation deck or shelter should be constructed for this site. Nearby Lake Sonoma, which is owned and operated by the USACE, has an overlook structure and several shelters with interpretive signs that could serve as a model for the Lake Mendocino overlook. 6. Overlook: The pavement for the main overlook area parking lot is cracking and needs to be resurfaced. 7. Overlook: Illegal activity occurs at the overlook area. This includes graffiti and vandalism, which have marred the plaque adorning the main overlook feature. To deter future vandalism, it is recommended that security cameras be installed in the area. 8. Overlook: In the past, there was a native plant garden near the pathway that leads to the restroom at the overlook area. USACE staff should re-establish and maintain the native plant garden.

8. Pomo Recreation Area	High Density Recreation	1. Continue to update and repair shelters as needed. 2. The designated swimming beach located between Pomo A Day Use Area and Pomo B Day Use Area does not currently meet the USACE standards for a recreational beach. It is recommended that a beach nourishment plan be developed as the first step to replenishing the beach, which will level the slope of the beach. An evaluation of the USACE designated swimming area standards and how it applies to this area should be included in the beach nourishment plan. 3. Future improvements to the infrastructure in this area should consider changes in water level and be resistant to inundation. 4. It is recommended that the USACE pursue a partnership with the Mendocino Transit Authority to provide shuttle or bus service to Lake Mendocino. A permanent or temporary bus stop during the peak summer season could be added in the Pomo Recreation Area since it is located just off Highway 20.
9. Kyen Campground/Oak Grove Day Use Area/North Boat Ramp	High Density Recreation	1. Kyen Campground: The existing fee booth located at the entrance to the campground is inadequate to support USACE ranger duties. The fee booth should either be renovated to improve visibility or replaced with an automated hardened booth. 2. Kyen Campground: Each campsite should be equipped with full utility hookups, including electric, sewer, and water. Recreation vehicle hookups and dump stations should also be added at several campsites. 3. Kyen Campground: Campground Loops A, B, and D are in need of upgrades. This includes renovation of the bathrooms, picnic tables, and repaving/repainting the roads throughout the campground. Campground Loop C should remain a primitive campground since it is flooded regularly. Invasive species management is needed in Loop C. 4. Kyen Campground: An underutilized amphitheater is located within the Kyen campground. It is recommended that the USACE implement an interpretive program that can use the amphitheater for events and outreach. 5. North Boat Ramp: It is recommended to construct a marina and concessionaire near the boat ramp and Oak Grove Day Use Area. In the past, there was a marina and the public has expressed interest in bringing it back. There is existing infrastructure for a potential concessionaire, which would be beneficial for both the day use visitors and overnight campers using this area. 6. North Boat Ramp: The bathroom at the boat ramp is in disrepair and must be torn down and reconstructed. 7. Invasive species management is recommended. It is recommended to construct exclusion gates at both ends of Marina Drive as a method for preventing the spread of aquatic invasive species on boats. Management of poison oak and Himalayan blackberry is needed throughout all campgrounds and day use areas.

10. Miti Recreation Area	Low Density Recreation	1. The campsite facilities at the Miti Campground need to be upgraded or replaced. Many of the picnic tables and fire pits are in poor condition. 2. Remove an old fence in the campground through a debris removal project. 3. A horse staging area should be developed just north of the campground since the eastern side of the lake attracts horseback riders. 4. The campground is in need of bear-proof garbage receptacles. 5. Add interpretive signage to denote the unique wildflower area and protection measures as necessary, such as fencing, to protect the area from human activity.
11. Wildlife Management Area	Wildlife Management	1. The Kaweyo trail runs through the wildlife management area and is in need of enhancements that can be accomplished through regular trail maintenance. 2. The connection of the Kaweyo trail to the Shakota trail to create a loop trail around Lake Mendocino is recommended and should be explored. Cultural resources would need to be considered for this proposal. 3. The USACE should pursue options for managing the feral pigs found in the wildlife management area. The pigs cause extensive damage to habitat and vegetation and are a nuisance. A managed pig hunt or other depredation technique should be implemented to control and reduce the damage.
12. Bushay Campground/Mesa Day Use Area	High Density Recreation	1. Inlet Road: Inlet Road, the only vehicle access route to Bushay Campground and Mesa Day Use Area for the public, suffers frequent inundation and subsequent closure of a popular campground. It is recommended that Inlet Road be raised in order to ensure year-round access for the public. 2. Inlet Road: Inlet Road should be widened to create designated parking areas for lake access. 3. Bushay Campground: It is recommended that the existing fee booth be renovated or replaced to provide better ranger safety and automated fee collection to prevent theft. 4. Bushay Campground: Each campsite should be equipped with full utility hookups, including electric, sewer, and water. This would include upgrading the Campground Host's vault toilet to septic. 5. Bushay Campground: Restroom #8 in the Fig Loop needs to be upgraded. All other restrooms were upgraded in the recent past. 6. Bushay Campground: Construct a horse staging parking lot near the Kaweyo trailhead/horse trail and pave the road that leads to the trailhead. 7. Bushay Campground: An underutilized amphitheater is located within Bushay Campground. It is recommended that USACE implement an interpretive program that can use the amphitheater for events and outreach. 8. Bushay Campground: Bushay Campground is another prime location, in addition to Chekaka Campground, to offer a non-camping lodging option such as a small resort or cabins. Such development would require the above mentioned improvements for Inlet Road. The resort or cabins would be best located in either the Little Bear or Fig Loops of the campground.

13. Bill Townsend Fish Hatchery	Project Operations	It is recommended in this Master Plan that the necessary repairs be made to support a fully functioning fish hatchery, including the following: 1. Replacement of alarm and backup battery in the event of a power outage. 2. Construction of a permanent roof over the hatchery rearing ponds to provide shade and protection. 3. Replacement and repair of office windows and flooring.
14. Disc Golf Course	High Density Recreation	1. It is recommended that a second alternate hole be added to both the north and south disc golf courses. This desire was expressed by the local visitors who regularly use the course. Additionally, it is recommended that the course be upgraded with moveable foundations. This will allow the baskets to be moved and the course to be modified more often, providing variety to the course. 2. USACE should support and promote disc golf tournaments at Lake Mendocino.
15. Project Administrative Buildings	Project Operations	1. Upgrades are needed to multiple buildings with the project administration area. a. The bathrooms in building #1 need renovating. b. The wood shed needs to be modernized. c. An alarm system for the buildings is necessary to ensure USACE staff and contractor safety. 2. Build housing for multiple rangers to utilize, in accordance with USACE policies.

8.4 USING THE MASTER PLAN

This Master Plan serves two primary purposes that are equal in importance. First, it is the primary management document for the project and provides direction for many of the other plans that guide the management of Lake Mendocino. This Master Plan sets the stage for the update of many of the USACE resource management plans. The Resource Objectives contained in this Master Plan can serve as a basis for developing plans to manage resources within the project boundary. The Resource Objectives approved in this plan can serve as a basis for developing more specific management plans at the project. The accompanying EA includes additional information on the environmental effects of the recommended Master Plan update including the land use and management unit classifications. Regular supplements or updates to the Master Plan will allow the project to maintain updated resource management plans, as needed.

The document also serves as a land use tool, since this Master Plan provides USACE, other management partners, and the public with the Land Allocations and the current Land Classifications, Recommended Future Use, and Resource Objectives applied to project lands. The current classification of project lands allows USACE, other management partners, and the public to visually evaluate the distribution of uses for project lands. Supplementing and/or updating the Master Plan will allow USACE to respond effectively to development plans made internally or by outside parties.

8.5 UPDATING THE MASTER PLAN

This policy-based Master Plan, along with the accompanying draft EA, provides USACE, other management partners, and the public with a "living" management document. This living document sets goals and objectives but does not establish detailed development plans. Stand-alone NEPA documents will be developed when projects, presented as Development Recommendations in this Master Plan or otherwise identified, are determined required, funded, and feasible to develop or execute.

Maintaining a current and updated Master Plan is accomplished through the following steps:

- Regular review of project needs and priorities
- Regular review of updates to the reports used to inform this plan
- Regular consultation and coordination with local, State, and Federal agencies and Tribes, as well as groups with regulatory purview or interest in the management of Lake Mendocino
- Review of annual visitation statistics. Sites with spikes in visitation or regular high levels of use would likely hold high priority in actions taken to achieve important Resource Objectives
- Review objectives yearly to ensure that they are still appropriate.

The annual reviews will help prepare for a general revision or significant update to the Master Plan. Any revision or update will include appropriate NEPA documentation. The five-year revision may be as simple as updating the Resource Objectives; however, it may be as complex as changing Land Classifications presented in this Master Plan. The process through which the plan is updated should follow standard USACE approval protocols.

The information obtained during regular revisions of this Master Plan also benefit other activities at the project. Data may be used to update a specific resource management plan, improve educational programs, or inform project staff about relevant issues.

A review of the Master Plan should include the following:

- Identify resource conditions that have changed and require documentation in Section 2.0
- Review the issues described in Section 3.0 and note changes in the manner in which these issues are addressed or other issues that have arisen over the last year
- Review the Resource Objectives and Development Needs to identify priorities or changes in management strategy.

8.6 INCLUDING OTHERS IN THE MASTER PLANNING PROCESS

This Master Plan emphasizes the need for consultation and coordination with regulatory agencies prior to implementing elements of the Master Plan. Coordination also may occur in updating the Master Plan and obtaining additional data sources to inform the plan.

In some cases, coordination with other government agencies is required by regulation. In all cases, coordination with the appropriate groups and agencies prior to implementing an action

will ensure a well-informed plan that avoids unnecessary impacts to project resources. Such an approach also streamlines the review and approval process with regulatory agencies. The accompanying EA to this Master Plan lists the Federal and state agencies that would be included in the consultation process for a proposed project at Lake Mendocino. It should be noted that similar agencies and groups exist at the local level and should be included in the planning process. Further agency consultation and coordination is critical to the success of this policy-based, programmatic document and associated EA.

CHAPTER 9 – BIBLIOGRAPHY

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Appendix A. Pertinent Public Laws

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APPENDIX A. PERTINENT PUBLIC LAWS

Development and management of federal reservoirs are regulated by a number of statutes and guided by USACE documents. The following sections provide a summary of the relevant policies and federal statutes.

USACE Authority.

Rules and regulations governing public use of water resources development projects administered by the USACE are contained in Title 36, Part 327 of the Code of Federal Regulations. As stated in Title 36, Section 327.0 Applicability *"…All other federal, state and local laws and regulations are in full force and effect where applicable to water resources development projects".* Section 327.1 (a) Policy states, *"It is the Policy of the Secretary of the Army, acting through the Chief of Engineers, to manage the natural, cultural, and developed resources of each project in the public interest, providing the public with safe and healthful recreational opportunities while protecting and enhancing these resources."* Section 327.1 (c) Policy also states, *"The term project or water resources development project refers to the water areas of any water resources development project administered by the Chief of Engineers, without regard to ownership of underlying land, to all lands owned in fee by the Federal Government and to all facilities therein or thereon of any such water resources development project".*

Persons designated by the District Commander have the authority to issue citations for violations of rules and regulations governing public use of the USACE water resources development projects. If a citation is issued, the person charged with the violation may be required to appear before a U.S. Magistrate. 33 C.F.R. § 327.25.

Civil Authority.

Except as otherwise provided in Title 36 or by federal law or regulation, state and local laws and ordinances shall apply on project lands and waters. Enforcement of state and local laws, and ordinances will be handled by the appropriate state and local law enforcement agencies. These include, but are not limited to, the following:

- Operation and use of motor vehicles, vessels, and aircraft;
- Hunting, fishing, and trapping;
- Display or use of firearms or other weapons;
- Camping, starting or tending fires, and use of fireworks;
- Civil disobedience and criminal acts;
- Littering, sanitation, and pollution
- Control of animals

Federal Authority.

The following federal public laws, Executive Orders, and cooperative agreements pertain to authorization of the project, present and future development, and operation of project lands and waters.

Public Law 534, 78th Congress (58 Stat. 887), 22 December 1944. Flood Control Act of 1944, as amended. This act authorizes the construction of certain public works on rivers and harbors for flood control and other purposes. Section 4 authorizes providing facilities at reservoir areas for public use, including recreation and fish and wildlife conservation. As amended in 1962 by Section 207 of Public Law 87-874, the act authorizes the USACE to develop and maintain park and recreation facilities at all water resources projects controlled by the Secretary of the Army.

Public Law 1928, 84th Congress (70A Stat. 150), 10 August 1956. Section 2667 of this law authorizes the Secretary of a military department to lease non-excess land when it is advantageous to the United States. Grazing leases are also authorized under this provision. Sections 2668 and 2669 authorize the granting of easements and rights-of-way for many purposes, including transmission lines and gas, water, and sewer pipelines.

Public Law 90-483 (82 Stat. 731), 13 August 1968, Flood Control Act of 1968, as amended. Section 210 of this Act restricts the collection of entrance fees at the USACE lakes and reservoirs after 31 March 1970 to users of highly developed facilities requiring the continuous presence of personnel.

Rivers and Harbors Act of 1899 (30 Stat. 1151), 3 March 1899.
Because the USACE will be conducting any projects under the updated Master Plan, no authorization is required as the law specifically exempts the USACE from regulation under Section 10. However, activities by non-USACE entities in waters of the U.S. at Lake Mendocino are regulated under Section 10. Work such as a boat dock installation or water intake line requires a Section 10 permit application; for work that includes placing fill, a joint Section 404/10 permit application can be made.

Executive Order 11644, 8 February 1972, Use of Off-Road Vehicles on Public Lands; amended by Executive Order 11989, 24 May 1977, Off-Road Vehicles on Public Lands. This Executive Order establishes a uniform federal policy regarding the use of vehicles such as trail bikes, snowmobiles, dune buggies, and other ORV on public lands. Section 3 provides guidance for establishing zones of use for such vehicles. This order was amended by Executive Order 11989. Currently the USACE restricts ORV use on project lands.

Public Law 99-662 (100 Stat. 4082), 17 November 1986, Water Resources Development Act of 1986. This legislation sets forth non-federal cost-sharing requirements for all water resources projects. Section 906 of this act supplements the responsibility and authority of the

Secretary of the Army pursuant to the Fish and Wildlife Coordination Act. This section requires any mitigation for fish and wildlife losses to be undertaken or acquired before any construction of the project commences, or shall be undertaken or acquired concurrently with lands and interests in lands for project purposes. The USACE will coordinate with the USFWS when constructing any projects under the Master Plan and will address any fish and wildlife mitigation that is required before the construction of any project commences.

Public Law 65-128 (40 Stat. 755), 13 July 1918, Migratory Bird Treaty Act (MBTA), as amended. The MBTA of 1918 is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts and nests. All migratory birds are governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent overutilization. Executive Order 13186 (2001) directs executive agencies to take certain actions to implement the act. When development proposed in the Master Plan is scheduled to occur, compliance with the MBTA will be considered along with environmental compliance for the specific activities.

Public Law 76-567 (54 Stat. 250), 8 June 1940, Bald Eagle Protection Act of 1940, as amended. This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The act provides criminal penalties for persons who take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The act defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. Individual projects proposed as a result of the Master Plan will adhere to the management guidelines developed by the USFWS to avoid disturbing bald eagles.

Public Law 85-624 (72 Stat. 563), 12 August 1958, Fish and Wildlife Coordination Act. This law amends and renames the Fish and Wildlife Coordination Act of 10 March 1934. The 1958 act requires that: (1) fish and wildlife conservation receive equal consideration with other features of water resources development programs; (2) proposals for work affecting any body of water be coordinated with the USFWS and state wildlife agency; (3) recommendations of the USFWS and state wildlife agency be given full consideration; and (4) justifiable means and measures for wildlife purposes, including mitigation measures, be adopted. It also required that adequate provisions be made for the use of project lands and waters for the conservation, maintenance, and management of wildlife resources, including their development and improvement. The act provides that the use of project lands primarily for wildlife management by others be in accordance with a General Plan approved jointly by the Department of the Army, Department of the Interior, and state wildlife agencies. When site-specific proposals are made under the Master Plan, the USACE will coordinate with the USFWS and CDFW.

Public Law 86-717 (74 Stat. 817), 6 September 1960, Conservation of Forest Lands in Reservoir Areas. This law provides for the development and maintenance of forest resources on the USACE managed lands and the establishment and management of vegetative cover so as to encourage future resources of readily available timber and to increase the value of such areas for conservation.

Public Law 87-88 (75 Stat. 204), 20 July 1961, Federal Water Pollution Control Act Amendments of 1961, as amended. Section 2(b)(1) of this act gives the USACE responsibility for water quality management of the USACE reservoirs. This law was amended by the Federal Water Pollution Control Act Amendment of 1972, Public Law 92-500.

Public Law 89-80 (79 Stat. 244), 22 July 1965, Water Resources Planning Act. This act is a congressional statement of policy to meet rapidly expanding demands for water throughout the Nation. The purpose is to encourage the conservation, development, and use of water-related land resources on a comprehensive and coordinated basis by the federal, state, and local governments; individuals; corporations; business enterprises; and others concerned. The Master Plan is in accordance with this Public Law by providing a comprehensive evaluation of the existing water-related land resources at Lake Mendocino and making recommendations for future management of such resources.

Public Law 90-583 (82 Stat. 1146), 17 October 1968, Noxious Plant Control. This law provides for a control of noxious weeds on land under the control of the Federal Government. Resource objectives and development needs for management units include the control of noxious weeds.

Public Law 91-190 (83 Stat. 852), 1 January 1970, National Environmental Policy Act of 1969 (NEPA). Section 101 of this act establishes a national environmental policy. Section 102 requires that all federal agencies shall, to the fullest extent possible, (1) use a systematic, interdisciplinary approach that integrates natural and social sciences and environmental design arts in planning and decision making; (2) study, develop, and describe appropriate alternatives to recommend courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources; and (3) include an Environmental Impact Statement (EIS) in every recommendation or report on proposals for major federal actions significantly affecting the quality of the human environment. The Environmental Assessment attached to this Master Plan serves to ensure the Project's compliance with NEPA. Should specific or additional development be proposed, additional NEPA analysis may be required.

Public Law 91-224 (84 Stat. 114), 3 April 1970, Environmental Quality Improvement Act of 1970. This act assures that each federal department or agency conducting or supporting public works activities that affect the environment shall implement the policies established under existing law. The USACE ensures that activities at Lake Mendocino are in compliance with existing laws.

Public Law 91-604 (84 Stat. 1676), 31 December 1970, Clean Air Amendments of 1970, as amended. The purpose of this act is to protect public health and welfare by the control of air pollution at its source, and to set forth primary and secondary National Ambient Air Quality Standards (NAAQS) to establish criteria for states to attain, or maintain. Some temporary emission releases may occur during construction activities that are recommended under the Master Plan; however, air quality is not expected to be impacted to any measurable degree.

Public Law 92-500 (86 Stat. 816), 18 October 1972, The Federal Water Pollution Control Act Amendments of 1972, as amended. This law amends the Federal Water Pollution Control Act and establishes a national goal of eliminating pollutant discharges into waters of the United States. Section 404 authorizes a permit program for the disposal of dredged or fill material in the Nation's waters that is to be administered by the Secretary of the Army acting through the Chief of Engineers. This law was later amended by the Clean Water Act of 1977, Public Law 95-217, to provide additional authorization to restore the Nation's water. The project is in compliance with this law. If any non-USACE construction activities involve the temporary or permanent placement of dredged or fill material into any water body or wetland area at Lake Mendocino, a permit pursuant to Section 404 is required.

Public Law 92-574 (86 Stat. 1234), 27 October 1972, Noise Control Act, as amended. This act establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. Federal agencies are required to limit noise emissions to within compliance levels. Noise emission levels at sites where development was proposed in the updated Lake Mendocino Master Plan would increase above current levels temporarily during periods of construction; however, appropriate measures will be taken to keep the noise level within the compliance levels.

Public Law 93-205 (87 Stat. 884), 28 December 1973, Endangered Species Act of 1973, as amended. This law supersedes the earlier Endangered Species Conservation Act of 1969. It also directs all federal departments/agencies to carry out programs to conserve endangered and threatened species of fish, wildlife, and plants and to preserve the habitat of these species in consultation with the Secretary of the Interior. This act establishes a procedure for coordination, assessment, and consultation. This act was amended by Public Law 96-159. The USACE management and construction activities proposed by the Master Plan would have no effects on federal or state listed or candidate threatened and endangered species known to exist in Lake Mendocino areas for which the USACE is responsible.

Public Law 93-523 (88 Stat. 1660), 16 December 1974, Safe Drinking Water Act, as amended. This act amends the Public Health Service Water Act to assure that the public is provided with safe drinking water. This law states that all potable water at civil works projects will meet or exceed the minimum standards required by law. This act was amended by the Safe Drinking Water Act Amendments of 1986, Public Law 99-339, and Public Law 104-182. The

Master Plan includes information related to management of the drinking water supply, which is management by Sonoma Water.

Public Law 93-629, (88 Stat. 2148), 3 January 1975, Federal Noxious Weed Act of 1974, as amended. Section 15, added to the Act in 1990, Public Law 101-624, requires noxious weed control management on federal lands and sets forth the process by which it is to be accomplished. Resource objectives and development needs for management units in the Master Plan include the control of noxious weeds.

Executive Order 11988, 24 May 1977, Floodplain Management. This Order outlines the responsibilities of federal agencies in the role of floodplain management. Each agency shall evaluate the potential effects of actions on floodplains and should not undertake actions that directly or indirectly induce growth in the floodplain, unless there is no practical alternative. Agency regulations and operating procedures for licenses and permits should include provisions for evaluation and consideration of flood hazards. Construction of structures and facilities on floodplains must incorporate flood proofing and other accepted flood protection measures. Agencies shall attach appropriate use restrictions to property proposed for lease, easement, right-of-way, or disposal to non-federal public or private parties.

Any development proposed in the Master Plan must be in compliance with South Pacific Division (SPD) Regulation 1110-2-5, Land Development Guidance at USACE Reservoir Projects, dated April 30, 2004. This regulation establishes SPD guidance for evaluating land development proposals within the USACE reservoir projects with authorized flood storage allocations. The USACE has responsibility to assure that the authorized project purposes are not compromised, that the public is not endangered, and that natural and cultural resources associated with project lands are not harmed, in accordance with applicable federal and state regulations. The criteria and procedures for evaluation of development proposals in this regulation are to assist in meeting these responsibilities and complying with applicable laws and directives. Existing structures are exempted from this policy. However, significant modifications and/or replacement of existing structures are subject to this policy.

Executive Order 11990, 24 May 1977, Protection of Wetlands. This Order directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands. Section 2 states that agencies shall avoid undertaking or assisting in new construction located in wetlands unless there is no practical alternative. Prior to construction of any facilities proposed in the Lake Mendocino Master Plan, a site-specific NEPA analysis, including an assessment of potential impacts to wetlands, would be coordinated with federal and state agencies and Tribes. If a Section 404 permit is required, coordination regarding compliance with E.O. 11990 would be accomplished prior to permit issuance.

Public Law 95-217 (91 Stat. 1566), 27 December 1977, Clean Water Act of 1977, as amended. This act amends the Federal Water Pollution Control Act of 1970 and extends the

appropriations authorization. The Clean Water Act is a comprehensive federal water pollution control program that has as its primary goal the reduction and control of the discharge of pollutants into the Nation's navigable waters. The Clean Water Act of 1977 has been amended by the Water Quality Act of 1987, Public Law 100-4. Any action involving placement of fill in waters of the U.S. at Lake Mendocino by the USACE, a non-USACE entity, or any individual, with the exception of certain minor activities as discussed in 33 C.F.R Part 323.4, would require a Section 404 authorization and Section 401 water quality certification.

Executive Order 12088, 13 October 1978, Federal Compliance with Pollution Control Standards. The purpose of this Order is to ensure federal compliance with applicable pollution control standards. Section 1-4, Pollution Control Plan, in which each agency was required to submit an annual plan for the control of environmental pollution to the Office of Management and Budget, was revoked by Executive Order 13148.

Public Law 95-632 (92 Stat. 3751), 10 November 1978, Endangered Species Act Amendments of 1978. This law amends the Endangered Species Act Amendments of 1973. Section 7 directs agencies to conduct a biological assessment to identify threatened or endangered species that may be present in the area of any proposed project. This assessment is conducted as part of a federal agency's compliance with the requirements of Section 102 of the NEPA. The USACE would conduct biological assessments on proposed projects when necessary.

Public Law 96-159 (93 Stat. 122), 28 December 1979, Endangered Species Act of 1973, as amended. This amendment expanded the act to protect endangered plants. This amendment requires the publishing of a summary and map when proposing land as critical habitat and requires federal agencies to ensure projects "are not likely" to jeopardize an endangered species. In addition, it authorizes all those seeking exemptions from the act to get permanent exemptions for a project unless a biological study indicates the project would result in the extinction of a species. The USACE would ensure that any development or management activities proposed in the Master Plan are not likely to jeopardize an endangered species.

Public Law 96-366 (94 Stat. 1322), 29 September 1980, Fish and Wildlife Conservation Act of 1980. This law enables states to obtain funds to conduct inventories and conservation plans for nongame wildlife. It also encourages federal departments and agencies to use their statutory and administrative authority to conserve and promote conservation in accordance with this act. The Master Plan promotes conservation at Lake Mendocino by including resource objectives and development needs that protect and enhanced wildlife habitat and reduce erosion.

Public Law 96-510 (94 Stat. 2767), 11 December 1980, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Typically CERCLA is triggered by (1) the release or substantial threat of a release of a hazardous substance into the environment; or (2) the release or substantial threat of a release of any pollutant or contaminant into the

environment that presents an imminent threat to the public health and welfare. To the extent such knowledge is available, 40 C.F.R Part 373 requires notification of CERCLA hazardous substances in a land transfer. Compliance with this act is required on a case-by-case basis for real estate activities such as easements, grants, etc.

Public Law 99-339 (100 Stat. 642), 19 June 1986, Safe Drinking Water Act Amendments of 1986. These amendments provide further regulation regarding national primary drinking water, enforcement of these regulations, and variances and exemptions to the act. These amendments also provide for the protection of underground sources of drinking water and provide grants to Tribes in addition to contract assistance to carry out the function of these amendments. The Master Plan includes information related to management of the drinking water supply, which is managed by Sonoma Water.

Public Law 100-4 (101 Stat. 7), 4 February 1987, Water Quality Act of 1987. This Act amends the Federal Water Pollution Control Act to not only provide for renewal of the quality of the Nation's waters but also provide construction grant amendments, standards, enforcement, permits, and licenses. This act includes more provisions for monitoring non-point source pollution (contaminants that come from many different sources). The USACE has included water quality management within several environmental compliance objectives.

Public Law 101-233 (103 Stat. 1968), 13 December 1989, North American Wetlands Conservation Act. This act establishes the North American Wetlands Conservation Council (NAWCC, 16 U.S.C. § 4403) to recommend wetlands conservation projects to the Migratory Bird Conservation Commission (MBCC). Section 9 of the act addresses the restoration, management, and protection of wetlands and habitat for migratory birds on federal lands. Federal agencies acquiring, managing, or disposing of federal lands and waters are to cooperate with the USFWS to restore, protect, and enhance wetland ecosystems and other habitats for migratory birds, fish and wildlife on their lands, to the extent consistent with their missions and statutory authorities. Prior to construction of any facilities proposed in the Master Plan, a site-specific NEPA analysis, including an assessment of potential impacts to wetlands, would be coordinated with federal and state agencies and tribes.

Executive Order 12962, 7 June 1995, Recreational Fisheries. This Executive Order mandates that Federal agencies, to the extent permitted by law and where practicable, improve the quality, function, and sustainable productivity and distribution of U.S. aquatic resources for increased recreational fishing opportunities. The USACE will continue to cooperate with USFWS and DFG to manage fisheries Lake Mendocino.

Public Law 104-182 (110 Stat. 1613), 6 August 1996, Safe Drinking Water Act Amendments of 1996. These amendments strengthen protections on tap water, improve public access to tap water contaminant information, strengthen standards to protect public health from the most significant threats to safe drinking water, and provide money that communities need to

upgrade drinking water systems. The Master Plan includes information related to management of the drinking water supply, which is managed by Sonoma Water.

Executive Order 13112, 3 February 1999, Invasive Species. This Executive Order directs federal agencies to act to prevent the introduction of, or to monitor and control, invasive (non-native) species; to provide for restoration of native species; to conduct research; to promote educational activities; and to exercise care in taking actions that could promote the introduction or spread of invasive species. Amended by Executive Order 13751, 5 December 2016. Recommendations regarding the management and prevention of invasive species are included in the Master Plan.

Executive Order 13195, 18 January 2001, Trails for America in the 21st Century. This Executive Order requires federal agencies to protect, connect, promote, and assists trails of all types throughout the United States. Several trails are proposed as part of the Master Plan.

Executive Order 13443, 16 Aug 2007, Facilitation of Hunting Heritage and Wildlife Conservation. The purpose of this Order is to direct federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. Currently, USACE prohibits hunting at Lake Mendocino for safety purposes.

Public Law 59-209, 59th Congress (34 Stat. 225), 8 June 1906, The Antiquities Act. This act makes it a federal offense to appropriate, excavate, injure, or destroy any antiquity, historic ruin, monument, or object of scientific interest located on lands owned or controlled by the United States without having permission from the Secretary of the department having jurisdiction thereof. Paleontological resources are regulated under this Act. The Master Plan includes recommendations for the management of historical and cultural sites and artifacts.

Public Law 86-523 (74 Stat. 220), 27 June 1960, Reservoir Salvage Act, as amended. This act provides for (1) the preservation of historical and archaeological data that might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any federal reservoir construction projects; (2) coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistorical, or archaeological data; and (3) expenditure of funds for recovery, protection, and data preservation. This act was amended by Public Law 93-291. Any construction proposed at the Lake Mendocino Project connected to operation and maintenance of the facility is reviewed in advance by the USACE Sacramento District cultural resources staff. In all cases, avoidance of historic properties is the preferred alternative. When such disturbance is unavoidable, suitable protection or data recovery will be implemented as required by the Act.

Public Law 89-665 (80 Stat. 915), 15 October 1966, Historic Preservation Act, as amended. This act states a policy of preserving, restoring, and maintaining cultural resources and requires that federal agencies (1) take into account the effect of any undertaking on any site on or eligible for the NRHP; (2) afford the Advisory Council on Historic Preservation the opportunity to comment on such undertaking; (3) nominate eligible properties to the NRHP; (4) exercise caution in the disposal and care of federal property that might qualify for the NRHP; and (5) provide for the maintenance of federally owned sites on the NRHP. All ground-disturbing activities proposed on Lake Mendocino Project lands are coordinated in advance with the State Historic Preservation Officer (SHPO), ACHP, THPO, and any other interested parties under Section 106 of the Act.

Executive Order 11593, 13 May 1971, Protection and Enhancement of the Cultural Environment. Section 2 of the Order outlines the responsibilities of federal agencies in accordance with the NEPA, the National Historic Preservation Act of 1966, the Historic Sites Act of 1935, and the Antiquities Act of 1906. Section 3 outlines specific responsibilities of the Secretary of the Interior including review and comment upon federal agency procedures submitted under this Order. The Lake Mendocino Cultural Resources Management Plan describes the USACE procedures for inventorying, managing, and protecting cultural resources at the Lake Mendocino project.

Public Law 93-291 (88 Stat. 174), 24 May 1974 Preservation of Historical and Archeological Data. This Act amends the Reservoir Salvage Act, to provide for the preservation of historical and archaeological data (including relics and specimens), which might otherwise be lost as the result of the construction of a dam. Section 3(a) requires any federal agency to notify the Secretary of the Interior in writing when the agency finds, or is notified in writing by an appropriate historical or archaeological authority, that its activities in connection with any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical or archeological data. Section 7(a) requires any federal agency responsible for a construction project to assist/transfer to the Secretary of the Interior such funds as may be agreed upon, but not more than 1 percent of the total appropriated project costs. The costs of survey, recovery, analysis, and publication shall be considered non-reimbursable project costs. The USACE will notify the Secretary of the Interior in writing if a USACE activity may destroy significant scientific, prehistoric, or archeological data.

Public Law 95-341 (92 Stat. 469), 11 August 1978, American Indian Religious Freedom Act (AIRFA) of 1978. AIRFA 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. No proposals in the updated Master Plan would adversely affect the protections offered by this act.

Public Law 96-95 (93 Stat. 721), 31 October 1979, Archaeological Resources Protection Act (ARPA) of 1979. This act protects archaeological resources and sites that are on public and Tribal lands, and fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals. It also establishes requirements for issuance of permits by the federal land managers to excavate or remove any archaeological resource located on public or Native American lands. All persons proposing to engage in archeological excavation on Lake Mendocino Project lands are required to coordinate with the USACE.

Public Law 101-601 (104 Stat. 3048), 16 November 1990, Native American Graves Protection and Repatriation Act (NAGPRA). This Act provides for the protection of Native American and Native Hawaiian cultural items. It establishes a process for the authorized removal of human remains, funerary, sacred, and other objects of cultural patrimony from sites located on land owned or controlled by the Federal Government. NAGPRA requires federal agencies and federally assisted museums to return specified Native American cultural items to the federally recognized tribes or Native Hawaiian groups with which they are associated. Notification of all inadvertent discoveries of such items covered by the act is reported to the appropriate affiliated descendant or Tribe in order of precedence as set by the act. Any claims to such items are reviewed and the procedures to repatriate within the act are followed.

Executive Order 12898, 11 February 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Federal agencies shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. Development and management activities proposed in the Master Plan are not anticipated to disproportionately impact minority or low-income populations.

Executive Order 13006, 21 May 1996, Locating Federal Facilities on Historic Properties. This Executive Order requires federal facilities, wherever operationally appropriate and economically prudent, to be located in historic properties and districts, especially those located in our central business areas. No activities under the Master Plan involve the development of federal facilities located in historic properties.

Executive Order 13007, 24 May 1996, Indian Sacred Sites. This Executive Order requires that agencies avoid damage to sacred sites on federal land, and avoid blocking access to such sites for traditional religious practitioners. The Federal Government gives Tribes notice when an impact to a sacred site occurs. The USACE will coordinate with Tribes regarding future actions that may impact tribal sites at Lake Mendocino.

Executive Order 13175, 6 November 2000, Consultation and Coordination with Indian Tribal Governments. This Executive Order requires regular and meaningful consultation and

collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with tribes, and to reduce the imposition of unfunded mandates upon tribes. Section 3 establishes policymaking criteria when formulating and implementing policies that have tribal implications. Section 5(a) says each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. Tribal coordination and Section 106 Consultation was done during the Master Plan process, allowing Tribes multiple opportunities to provide input into the Master Plan.

Executive Order 13287, 3 March 2003, Preserve America. This Executive Order encourages federal agencies to recognize and manage the historic properties in their ownership as assets that can support department and agency missions while contributing to the vitality and economic well-being of the Nation's communities. This Executive Order also encourages federal agencies to seek partnerships with state, tribal, and local governments, and the private sector in order to make more efficient and informed use of historic, prehistoric, and other cultural resources for economic development and recognized public benefits. The USACE has an ongoing relationship with the Coyote Valley Band of Pomo Indians at Lake Mendocino. The Master Plan makes recommendations for continuing this relationship through the operation of the Pomo Cultural Center.

LAKE MENDOCINO MASTER PLAN

MENDOCINO COUNTY, CALIFORNIA

APPENDIX B

ENVIRONMENTAL ASSESSMENT

1.0. Introduction

This Environmental Assessment (EA) has been prepared in conjunction with the updated Master Plan for the Coyote Valley Dam and Lake Mendocino located in Mendocino County, California. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq), Council on Environmental Quality (CEQ) regulations published in 42 Code of Federal Regulations (CFR) part 1500, and the U.S. Army Corps of Engineers (USACE) *Implementing NEPA,* Engineering Regulation ER-200-2-2. The purpose of this EA is to provide sufficient information on potential environmental effects of adopting the proposed update to the Lake Mendocino Master Plan and alternative in order to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The Master Plan is intended to guide the orderly and coordinated use, development, and management of resources at Lake Mendocino consistent with USACE regulations laws and policies. In general, the primary goals of a Master Plan are to prescribe an overall land and water management plan, resource objectives, and land use classifications.

1.1 Project Location and Setting. Lake Mendocino is located on the East Fork of the Russian River, just outside the City of Ukiah in Mendocino County, California. The drainage area above the dam is about 105 square miles of the East Fork Russian River watershed, and the topography ranges from flat valley land downstream to mountainous areas in the headwater region. Figure EA-2 Shows the location of Lake Mendocino in the watershed.

The Lake Mendocino and Coyote Valley Dam (CVD) project was authorized by the Flood Control Act of 1950 as part of the initial state of an adopted comprehensive plan of improvement of the Russian River for flood control, water conservation, and related purposes. Recreational development was added to the project under provisions of Section 4 of the 1944 Flood Control Act and Office of the Chief of Engineers (OCE) guidance in letter ENGCW-Y, 5 August 1965, subject: Implementation of the Federal Water Project Recreation Act (Public Law 89-72) in previously authorized projects.

1.2 Purpose and Need for Action. Master Plans are required for civil works projects and other fee-owned lands for which the USACE has administrative responsibility for management of natural and historic resources. The purpose of the Lake Mendocino Master Plan is to provide a programmatic approach to the management of all of the lands included within the Lake Mendocino perimeter boundary (Figure EA-1). The Master Plan is the basic guiding document outlining the responsibilities of the USACE, pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands and associated resources. The Master Plan is a planning document anticipating what could

and should happen, with the flexibility to adapt to changing conditions over the life of the plan. Detailed management and administration functions are handled in the Operational Management Plan (OMP), which translates the concepts of the Master Plan into operational terms. The OMP is the working tool to be used in the overall management of the project. OMP's are to be updated every five years with funding, staffing and equipment needs being updated annually as needed. The OMP for Lake Mendocino was last updated in June of 2013 and should be updated once this Master Plan update has been finalized.

Over the last 30 years, many of the construction projects included in the original master plan have either been completed or have been found to not be the best use of project resources. Over that time, the USACE has also updated its policies directing the development and implementation of Master Plans. This includes updating the categories of Land Classifications used to define project lands. In order to meet these new directives and comply with USACE policy requiring regular updates to a Master Plan, there is a need to revise the existing Master Plan for Lake Mendocino.

The primary goals of the Master Plan are to prescribe an overall land management plan, resource objectives, and associated management concepts, which (1) Provide the best possible combination of responses to regional needs, resource capabilities, suitability, as well as expressed public interests or desires consistent with authorized project purposes; (2) Contribute towards providing a high degree of recreation diversity within the region; (3) Emphasize the particular qualities, characteristics, and potentials of the project; and, (4) Exhibit consistency and compatibility with national objectives and other state and regional goals and programs.

The Master Plan identifies recreational opportunities and measures to preserve and protect natural and cultural resources. The Plan also outlines development needs, analyzes special problems, and recommends management actions for public use, water quality, invasive species, natural areas, and historic properties within the USACE project boundaries. The Master Plan does not address reservoir water levels and should not be confused with the on-going Dam Safety Modification Project or the Water Control Manual.

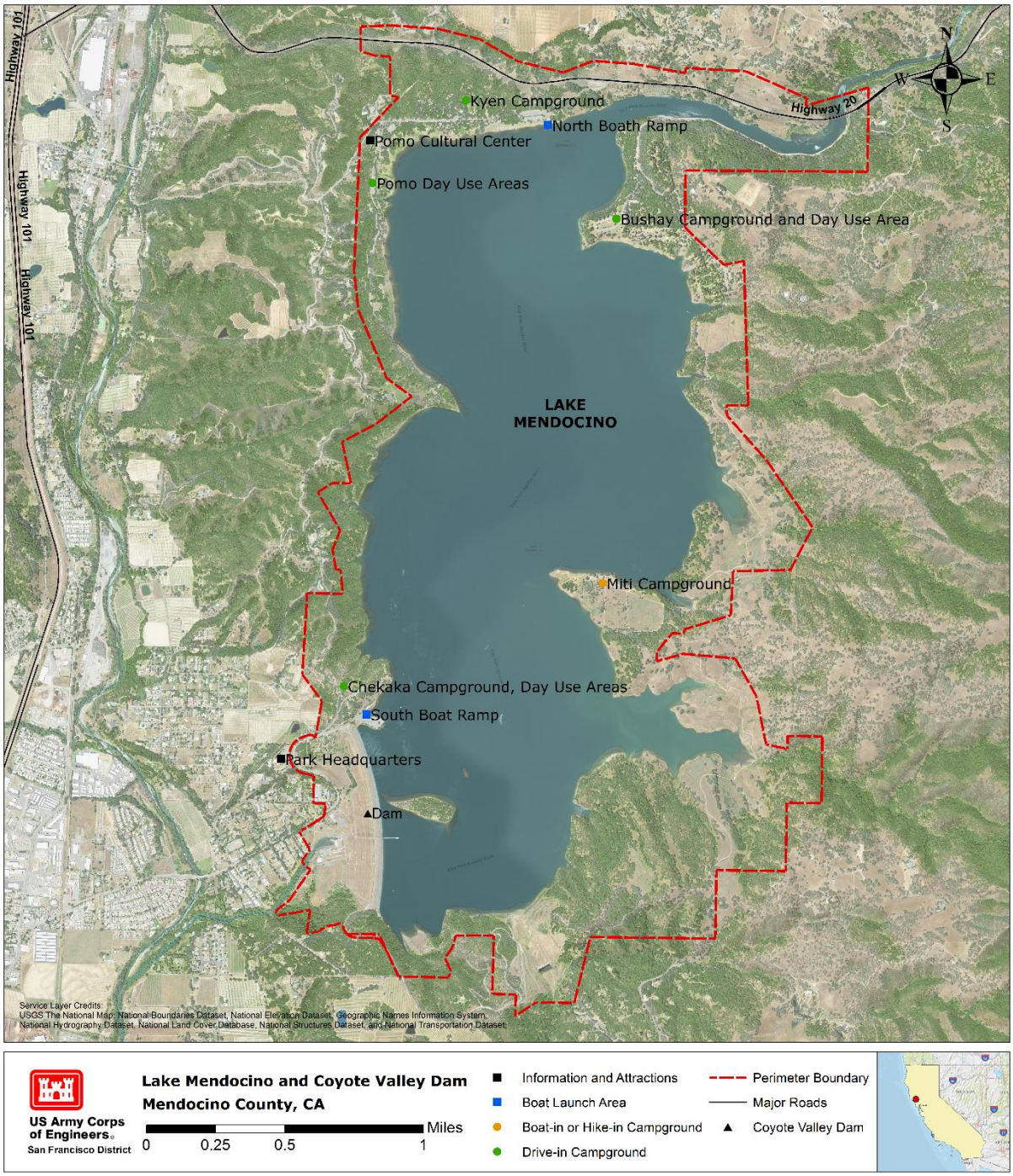


Figure *EA- 1.* Lake Mendocino Boundary and facilities.

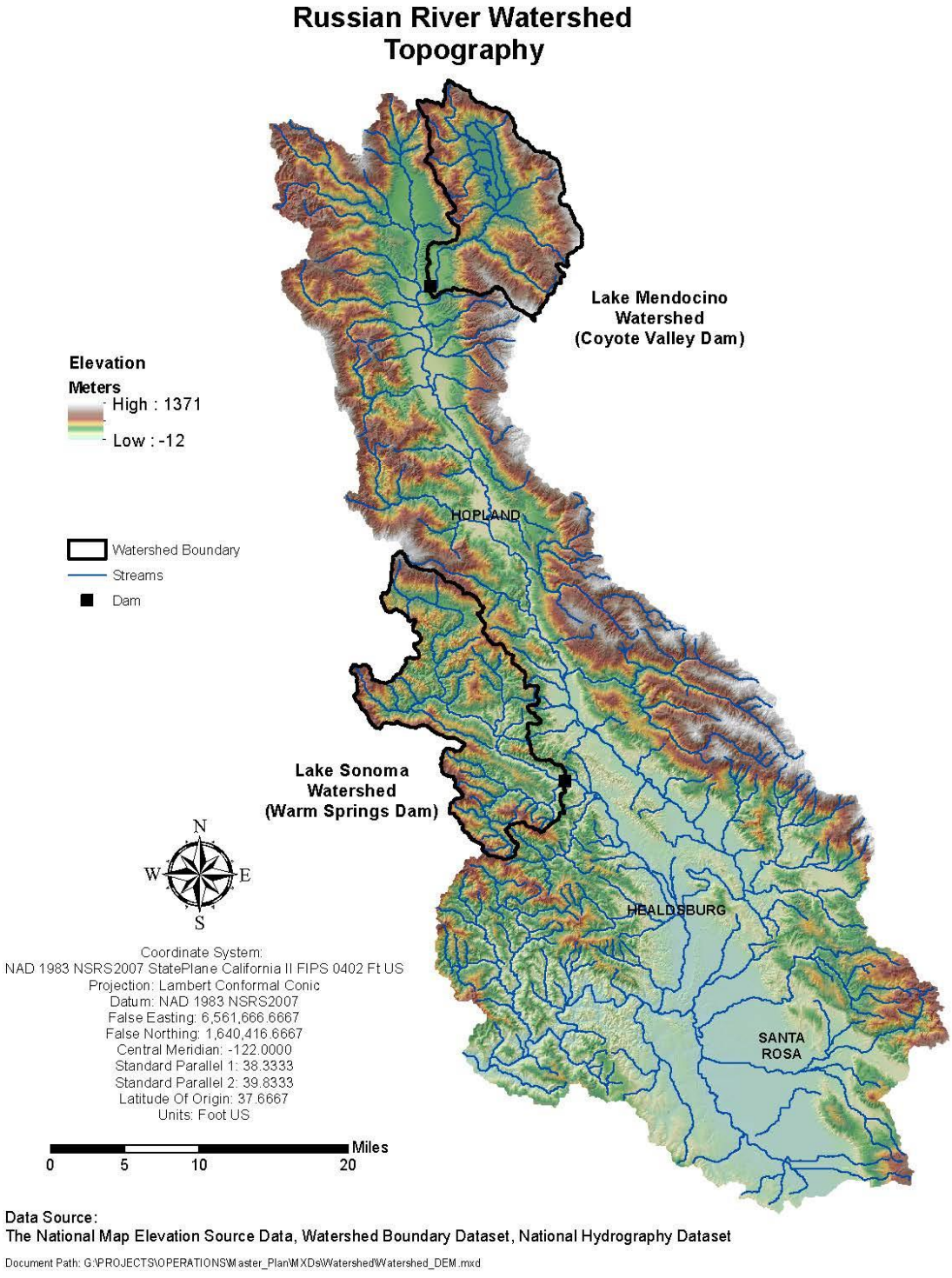


Figure EA- 2. Lake Mendocino Watershed.

1.3 Scope of the Action. ER-1130-2-550 establishes policy for the preparation of master plans and OMPs. Master plans should be reviewed on a periodic basis, generally every five years, and should be revised as required. An initial master plan was developed for public recreational development in March 1959 and it was last updated in 1977. The proposed action would revise the 1977 Lake Mendocino Master Plan providing an updated land management plan and resource objectives for Lake Mendocino. It is focused on the management of land and water surface related to the project's purposes of flood risk management, conservation, hydroelectric power generation and recreation. The Master Plan presents existing conditions, anticipated recreational use, type of facilities needed to service the anticipated use, and an estimate of future needs. The scope of the Master Plan does not include recommendations related to the operation of Coyote Valley Dam.

This EA addresses the proposed adoption and implementation of the revised Master Plan for Lake Mendocino. The intention of the Master Plan is to classify land uses and describe objectives that will guide the sustainable development of resources within the Lake Mendocino Project. This EA analyzes the potential impact that adopting and implementing the Master Plan update would have on the natural, cultural, and human environment. This EA relies on the attached Lake Mendocino Master Plan for cross reference.

The Master Plan also presents future development needs and recommendations for each management unit (see recommended future management actions in Table EA-2 below). It is not feasible to define the exact nature of potential impacts for all future management actions recommended in the Master Plan prior to the decision to carry out those actions and develop more specific project proposals. Therefore, environmental consequences may be less than or may, in fact, exceed what is described in this EA. To ensure potential environmental consequences of such future actions are identified and documented in accordance with NEPA and other applicable environmental laws and regulations, additional NEPA and environmental coordination will be conducted, as appropriate, for future projects that are carried out in association with this proposed Master Plan.

2.0. PROPOSED ACTION AND ALTERNATIVES

This EA examines two alternatives: the proposed action (Agency-preferred Alternative) of adopting the Master Plan update and a No Action Alternative in which the 1977 Master Plan would remain the management guidance document. The Agency-preferred Alternative updates existing inventories, land use classifications, management objectives, and development needs to provide a programmatic approach to the future management of the USACE Lake Mendocino Project.

During the past year, the District and other management partners have worked to develop options for classifying project lands and identifying Resource Objectives (Master Plan, Chapter 3) for these lands. A public meeting was held in Ukiah in February of 2018 to solicit comment form the interested public and stakeholder groups. Several meetings with the Pomo tribe have also occurred to discuss sensitive issues. The data collection, public comments, and findings of the planning team revealed that there was only one action alternative that would meet the purpose, need, and objectives of the master planning process. This alternative is the Agency-preferred Alternative and is discussed in detail in Section 2.2 of this EA.

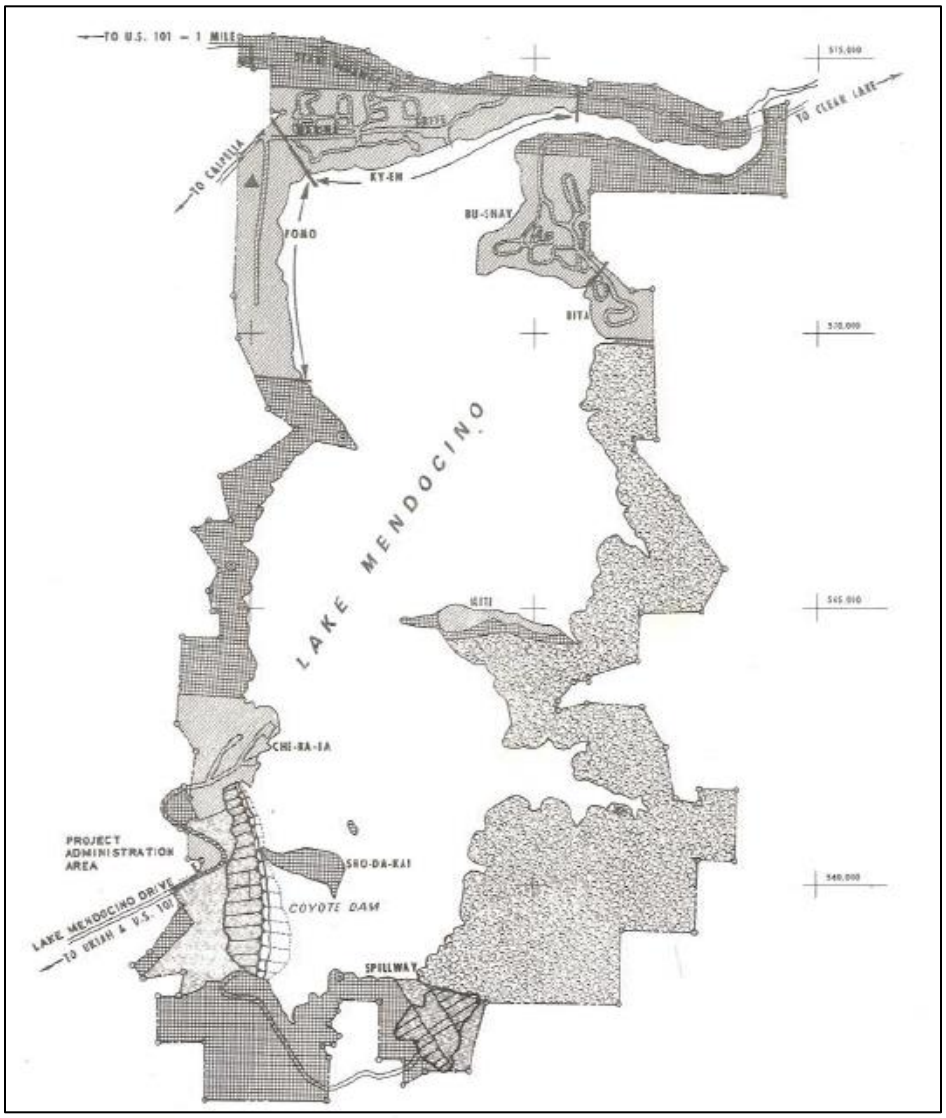
2.1. No Action. Inclusion of the No Action Alternative is prescribed by CEQ regulations and serves as the benchmark against which Federal actions can be evaluated. Under the No Action Alternative, the District would not approve the adoption or implementation of the revised Lake Mendocino

Master Plan and would not meet current regulations or the objective of regularly updating a master planning document. The 1977 Master Plan would continue to provide the only source of comprehensive management guidance and philosophy. Information provided in the 1977 plan is out of date and no longer adequately addresses the needs of the District, other management partners, or users of Lake Mendocino. Furthermore, the 1977 Master Plan does not include the revised Land Classifications contained in ER 1130-2-550. Future major developments or resource management policies would require approval on a case-by-case basis without the benefit of evaluation in the context of an overall plan.

2.2. Adopt the Proposed Update to the Lake Mendocino Master Plan (Agency-preferred Alternative). The proposed update to the Master Plan is the USACE's preferred alternative. Under the Agency-preferred Alternative, the USACE would adopt and implement the revised Lake Mendocino Master Plan described in the main body of this text (to which this EA is an appendix). The proposed updated Master Plan seeks to replace the 1977 Master Plan and provide a balanced, up-to-date management plan that follows current Federal laws and regulations while sustaining Lake Mendocino's natural resources and providing outdoor recreational experiences. The proposed revised plan would update the land use classification of Lake Mendocino's Management Units (MU) from the 1977 system to be compliant with current USACE policy guidelines. The revised plan also lays out future recommendations for management of both recreation and natural resources.

The primary element of the Agency-preferred Alternative is new land use classifications that would be applied to all project lands. The proposed land classifications would be applied to each management unit and resource objectives recommending future management actions would be developed in light of these classifications. Most of the current land classifications will be carried forward, such as an existing recreation or operations site. Resource Objectives (Master Plan, Chapter 3) identify how the District would like to see project lands managed including goals for future uses of these lands.

The land classifications presented in the proposed Master Plan revision, as well as the recommended future uses, are consistent with the land classifications and policies included in the 1977 Master Plan. The intent of the land classification process is to fully utilize project lands in accordance with authorized project purposes, consideration of public desires, and regional and project specific resource requirements and capabilities. For many MUs, the land classification has been changed since the 1977 Master Plan to reflect the land classifications identified in current USACE Master Planning guidance (ER-1130-2-550). While the terminology has changed, the overall intent of how a specific MU is to be used and managed has remained the same. Land Classification definitions can be found in Chapter 4 of the Master Plan. Table EA-1 shows how the 1977 Land Classifications have been converted into the revised land classifications.



LEGEND

- CLASS I HIGH DENSITY RECREATION AREA
- CLASS II GENERAL OUTDOOR RECREATION AREA
- CLASS III NATURAL ENVIRONMENT AREA
- CLASS IV OUTSTANDING NATURAL AREA
- CLASS V WILDLIFE MANAGEMENT AREA
- CLASS VI HISTORICAL AREA
- CLASS VII NON PUBLIC USE AREA

ALL ROADS AND WATER AREAS ARE DESIGNATED CLASS II

Figure EA-3. Land Use Classification Map from 1977 Master Plan.

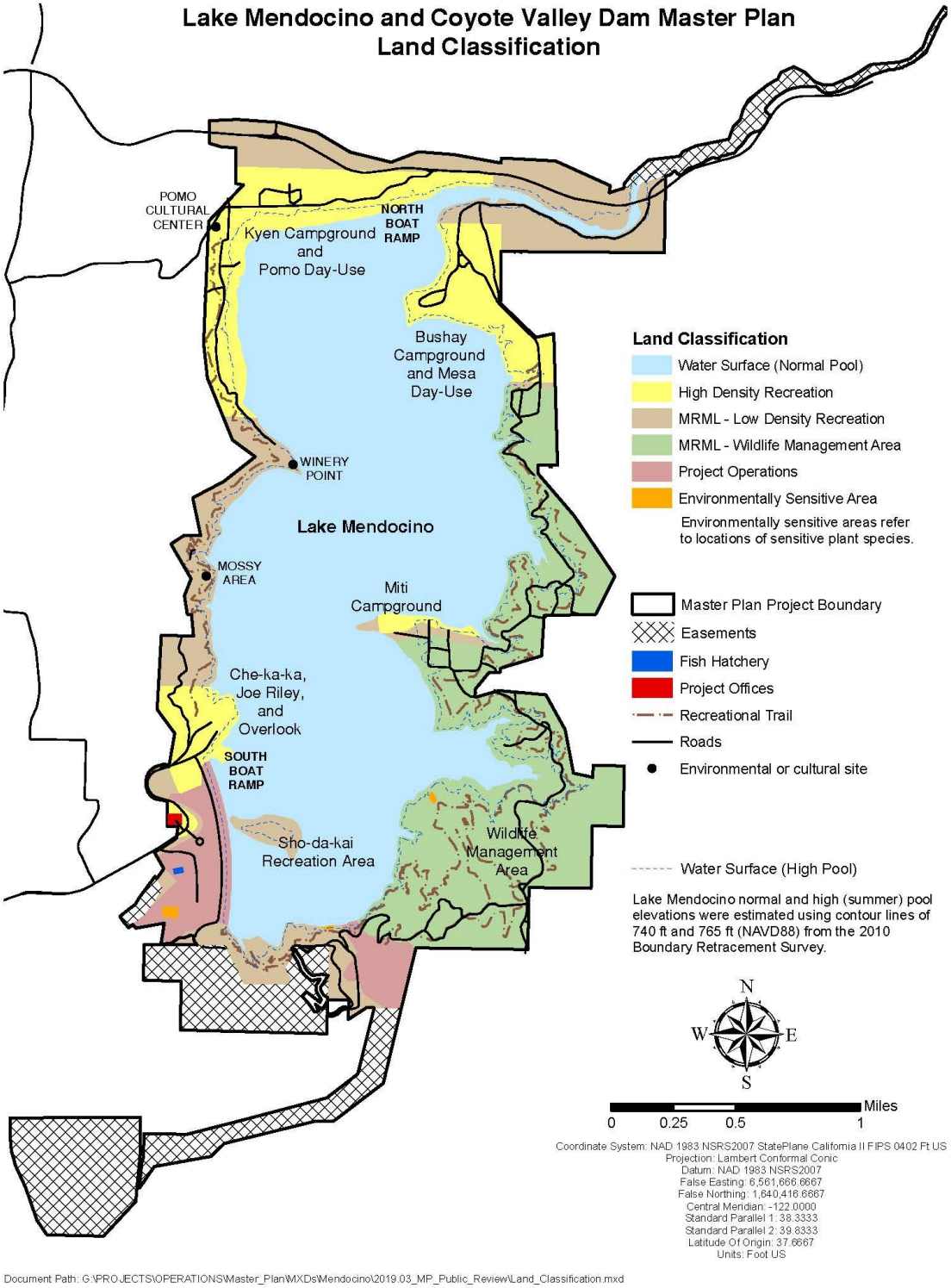


Figure EA-4. Overview of Land Use Classifications in Revised Master Plan.

Table EA-1. Land Classification Systems in the 1977 Master Plan and Proposed 2019 Master Plan

1977 Master Plan	Proposed 2019 Master Plan
Class I – High density recreation areas.	**Project Operations** - lands required for the dam, spillway, offices, maintenance facilities, and other areas that are used solely for the operation of the project. **High Density Recreation** - Lands developed for intensive recreational activities for the visiting public including day use areas and/or campgrounds. These could include areas for concessions (marinas, comprehensive resorts, etc.), and quasi-public development.
Class II – General outdoor recreation areas, including lands reserved for visitor accommodations, administrative facilities, campgrounds and water surface areas.	**Multiple Resource Management –** **A) Low Density Recreation** - These lands are designated for dispersed and/or low impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as hiking, biking, fishing, sight-seeing, or nature study. Some limited facilities are permitted, including trails, parking areas and vehicle controls, as well as primitive camping and picnic facilities.
Class III – Natural environmental areas that provide a transition between general outdoor recreation areas to primitive wilderness areas, such as trails, outlooks and picnic sites.	**B) Wildlife Management** - These lands are designated specifically for wildlife management, although all project lands are managed for fish and wildlife enhancement in conjunction with other land uses. Wildlife management lands are actively managed or enhanced to create valuable habitat suitable for game and/or non-game species. These activities are conducted as identified by the managing agency's forest and wildlife management plans.
Class IV – Outstanding natural or scientific areas that represent the most fragile natural areas.	**C) Vegetative Management** - Management activities in these areas focus on the protection and enhancement of forest resources and vegetative cover. The USACE conducts active vegetation management activities, protect water quality, improve aesthetics, and enhance wildlife habitat.
Class V – Wildlife Management Areas	**D) Proposed Recreation** - This sub-classification consists of lands for which recreation areas are either currently in the planning stages, are held in an interim status for future recreation possibilities, or lands that contain existing recreation areas that have been temporarily closed. The lands are managed for multiple purposes including wildlife and vegetation management and low density recreation until if and when they are developed as recreation areas.

Class VI – Historical or cultural areas including structures of historical or cultural significance. **Class VII –** Nonpublic use project areas that can be altered from their natural conditions for project use, such as control towers, the spillway and the dam	**Environmentally Sensitive Areas** - These are areas where scientific, ecological, cultural or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the ESA, the NHPA or applicable state statues. These areas must be considered by management to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration. These areas are typically distinct parcels located within another, and perhaps larger, land classification, area. **Mitigation** - This classification will only be used for lands with an allocation of mitigation and that were acquired specifically for the purposes of offsetting losses associated with development of the project. **Water Surface** - If the project administers a surface water zoning program, then it should be included in the Master Plan. **A) Restricted** - Water areas restricted for project operations, safety, and security purposes. **B) Designated No-Wake**- To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety. **C) Fish and Wildlife Sanctuary** - Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. **D) Open Recreation** - Those waters available for year round or seasonal water-based recreational use.

The Agency-preferred Alternative would revise the Master Plan using the new proposed land use classifications as described and illustrated in Chapters 4 and 5 of the main text (to which this EA is an appendix). Later updates, also referred to as supplements, could document completed actions and refocus the management of any given site. These updates could be made by Lake Mendocino staff, as they are most involved in the day-to-day management of the project. Updates or supplements could also include changes in land classifications; however, a change of this magnitude would involve further NEPA consideration and coordination within USACE and external stakeholders as applicable.

Development Recommendations for Management Actions (Improvements). The proposed Master Plan update makes development recommendations for the various MUs. These improvements would be dependent on funding and seek to maximize public access, within the constraints of budgets, staffing, safety considerations and other management concerns. Table EA-2 shows the proposed update in land use classification, a listing of future development need recommendations contained in the updated Resource Plan (Chapter 5) by MU. The USACE compiled these recommendations from comments received at scoping meetings, public input, and discussions with Lake Mendocino resource managers. Resource manager recommendations are shown in the recommendations column of Table EA-2 and public comment is summarized in chapter 5 of this document.

Table EA-2. Future Recommendations of Management Actions by Management Unit

Management Unit	Land Use Classification Name Change	Recommendations
Management unit I – Lake Mendocino	From Class II General Outdoor Recreation to Water Surface and Project Operations.	Implement additional No-Wake Zones on the lake. Zones are already delineated around the boat ramps. This is especially needed adjacent to the Miti Campground, where boats land directly on shore due to lack of a boat ramp. Install additional signage and information on regulations regarding these zones to increase visitor awareness. Partner with stakeholder groups to develop a quagga and zebra mussel management plan at the lake that would minimize the potential for the introduction of these species and to respond rapidly if they are detected on site.
Management Unit 2 – Dam Operations, Dam Control Tower and Spillway	From Class VII Nonpublic Use Project Area to Project Operations.	Manage the erosion and slope stabilization issues impacting the hillside adjacent to the spillway access road. This would require an engineering study focusing on the slope design. Improve existing interpretive signage and develop additional signage near the public entrance. Manage the Burke's goldfields area and investigate options to improve surrounding habitat to encourage expansion of this population. Design and construct a drainage system at the downstream end of the dam. Remove lead based paint from the access bridge to the control tower and resurface with an acceptable paint.

		Sandblast and repaint the slide gates in the outlet works control tower.
Management Unit 3 – Pomo Cultural Center	From Class I High Density Recreation to High Density Recreation.	Renovate the Pomo Cultural Center so it can be used for interpretive services for the public to include repair, cleaning, bat removal and updating interpretive signage Re-establish the lease agreement with the Coyote Valley Band of Pomo Indians, and develop a management plan to maintain and operate the center for interpretive use.
Management Unit 4 – Unique Wildflower Areas	From class IV Outstanding Natural or Scientific Area to Environmentally Sensitive Area. (Site #1 and Site #2). From Class VII Nonpublic Use Project Area to Environmentally Sensitive Area. (Site #3)	Continue with current management practices for the two areas that contain or have contained Burke's goldfields in the past. A survey should be conducted to determine the presence of Burke's goldfields at Site #2. Site #3 is reclassified as an Environmentally Sensitive Area and is included in this new management unit. Look into opportunities in partnership with USFWS to improve the area around Site #3 to encourage the existing plants to spread. Interpretive signage should be installed alerting the public to the presence and status of Burke's goldfields. Any new populations that are found should be added to Management unit 4
Management Unit 5 – Winery Point	From Class VI Historical Area to Multiple Resource Use and Environmentally Sensitive Area.	The remnant buildings of the Garzini Winery attract vandalism and criminal activity, are a nuisance, and pose safety risks, especially as the USACE does not routinely patrol the area due to its remote location. It is recommended that the structures be demolished and removed from the site. The area should be allowed to return to its natural state. Implement a "no wake zone" on the lake in this area to prevent further cliffside erosion Fencing should be improved around the area to prevent access to the eroding bluff, structures and to deter vandalism.

		The tractor artifact and other winery equipment still located at the site could be moved to the Pomo Cultural Center in the future.
Management Unit 6 – Sho-Da-Kai Recreation Area	From Class III Natural Recreation Area to Low Density Recreation.	No additional recreation facilities are recommended as USACE staff do not regularly patrol the island.
Management Unit 7 – Che-Ka-Ka Recreation Area	From Class II General Outdoor Recreation to High Density Recreation.	**Campground** - Develop a non-camping lodging facility such as a small hotel, cabins, or yurts. Need to clear vegetation that is creating a fire hazard in and around the closed campground. Create a parking lot providing 63 spaces where the campground now stands to address crowding issues at the South Boat Ramp (see Appendix 3 in main report). **South Boat Ramp** – Construct a new parking area providing 63 additional parking spaces. **Joe Riley Day Use Area** – Develop a marina on the shore of the day use area. Access across the day use area would have to be established. **Overlook** – Vegetation at the overlook should be maintained regularly to prevent this signature view from being obscured. An observation structure with kiosk should be constructed as proposed in the 1977 Master Plan. Resurface the main parking lot. Installation of a security camera system to deter vandalism which is rampant at the lake. Reestablish and maintain the native plant garden at the overlook area and manage it as an interpretive site. Explore future partnerships with local law enforcement agencies to address the homeless issue and deter illegal activity.
Management Unit 8 – Pomo Recreation Area.	From Class II General Outdoor Recreation to High Density Recreation.	Continue to repair and update the picnic structures as needed. Develop a beach nourishment plan with the goal of meeting the USACE standards for a recreational beach and swimming area. This area floods when lake levels are high. Any plans for improvements should be designed with this in mind. Pursue a partnership with the Mendocino Transit Authority to provide a shuttle service to Lake

		Mendocino. Stops could be added at the Pomo and Che-Ka-Ka recreation areas.
Management Unit 9 – Ky-En Campgound/Oak Grove Day Use Area/North Boat Ramp.	From Class II General Outdoor Recreation to High Density Recreation.	**Ky-En Campground** - Either renovate fee booth to improve visibility for rangers and install exclusion gates to be closed after hours or replace existing fee booth with a self-automated station. The station would have to be designed to be theft resistant. Equip camp sites with full utility hookups, including electric, sewer and water. Renovate bathrooms and picnic facilities in loops A, B and D. Resurface and paint the roads throughout the campground. Pursue partnerships with stakeholder groups to provide interpretive services at the campground and the currently under-utilized amphitheater. **North Boat Ramp** – Construct a marina and concessionaire to restore the one that existed in the past. Demolish and rebuild the bathroom at the boat ramp **Entire Unit** – Construct exclusion gates at both ends of Marina Drive which would be closed in the evening hours, when no rangers are present, primarily to prevent recreational vessels from introducing invasive mussels. Pursue a contract for Management of poison Oak and Himalayan Blackberry throughout all campgrounds and day-use areas as was done in the past.
Management Unit 10 – Miti Recreation Area	From Class II General Outdoor Recreation to Low Density Recreation.	Upgrade or replace picnic tables and fire pits and add bear-proof garbage bins. Remove old fence in campground Develop a horse staging area just north of the campground to service riders on the eastern side of the lake.
Management unit 11 – Wildlife Management Area	From Class V Wildlife Management Area to Wildlife Management.	Enhance and regularly maintain the Kaweyo trail. Connect the Kaweyo Trail to the Shakota trail to create a lake loop trail. Management of feral pigs should be exercised on this side of the lake.
Management Unit 12 – Bushay Campground/	From Class II General Outdoor Recreation to High Density Recreation.	Raise the inlet road in order to provide year-round access to public and prevent flooding of porta-potties.

Mesa Day Use Area		Widen the inlet road to allow for designated parking for lake access. Renovate fee booth to improve ranger safety or replace existing fee booth with a self-automated station. The station would have to be designed to be theft resistant. Equip camp sites with utility hookups including electric, sewer and water. Upgrade the Campground Host vault toilet to a septic system Upgrade Restroom 8 in Fig loop Construct a horse staging area and parking lot near the Kaweyo trailhead. Pave the road leading to the trailhead. Pursue partnerships with stakeholder groups to provide interpretive services at the campground and the currently under-utilized amphitheater. Consider the development of a non-camping lodging facility such as a small hotel, cabins, or yurts.in either fig loop or Little Bear loop.
Management unit 13 – Bill Townsend Fish Hatchery	From Class VII Nonpublic Use Project Area to Project Operations.	Replacement of alarm and backup battery in the event of a power outage Construction of a permanent roof over the hatchery rearing ponds to provide shade and protection Replacement and repair of office windows and flooring
Management Unit 14 – Disc Golf Course	From Class II General Outdoor Recreation to High Density Recreation	A second alternate basket location should be developed for each hole on the North and South courses to provide a more diverse arrangement for the many repeat visitors Support and promote disc golf tournaments at the lakes courses.
Management Unit 15 – Project Administration Buildings.	From Class II General Outdoor Recreation to Project Operations	Renovate bathrooms in Building #1. Modernize the wood shed. Install a security alarm system for employee safety Build housing for multiple rangers to utilize, in accordance with USACE policies.

3.0 AFFECTED ENVIRONMENT

This section describes the baseline environmental conditions potentially affected by the proposed revisions to the Master Plan for Lake Mendocino (Agency-preferred Alternative) or the No Action Alternative. The USACE considered all possible environmental factors potentially influenced by the alternatives.

3.1. Physical Environment

3.1.1 Geology, Topography, Soils, and Seismicity. The hills to the east of Lake Mendocino are very rugged and continue for many miles. To the west and northwest, the hills are more rounded with benches that were once planted with vineyards. See Maps 2-6 in the Master Plan for geologic and topographic details. In general, the terrain is in its natural state and the recreational areas are developed on the benches above Lake Mendocino. Most of the western shore of Lake Mendocino is steep and not suitable for development, while the north and northeast shores are mostly flat and have a higher concentration of recreational development. The eastern and southern shores are undeveloped and located within the Wildlife Management Area.

Throughout the California north coast mountain ranges, the dominant structural features are the northwest trending faults and folds, which control the course of the middle and upper Russian River and much of the major drainage and ridge patterns within Mendocino County. Metamorphic rocks of the Franciscan Formation underlie almost all of the area. This formation is characterized by rocks which are fractured and contain numerous faults and local zones of intense shearing.

The region surrounding Coyote Valley is of moderate relief. Elevations above mean sea level range from about 600 feet in the valleys near Ukiah to about 3,975 feet on top of Cow Mountain, which is east of Lake Mendocino. The lower ridges and hills that divide Coyote Valley from the adjacent valleys are somewhat rounded, but their shape is modified locally by the presence of old terraces. The East Fork Russian River enters Coyote Valley from the northeast through the canyon. Numerous terraces are present on the flanks of the ridges, reflecting earlier erosion and deposition levels of the river.

Coyote Valley is a southerly trending valley that is about 1-1.5 miles wide by 3 miles long, and lies about a mile east of the Redwood and main Ukiah Valleys. It is flanked by rolling hills that rise 400 feet about the valley floor to the west of Lake Mendocino and abuts against the steeper Franciscan bedrock hills to the east. The upstream end of the reservoir extends north eastward up the gorge of the East Fork toward the mouth of Cold Creek.

Coyote Valley is underlain primarily by metamorphic rocks from the Franciscan formation. Most of the recreation areas located within the Lake Mendocino boundary have 6 to 12 inches of silt, or sandy silt, overlying the gravelly phase, Older Alluvium. The Older Alluvium is a highly consolidated formation of alluvium deposits consisting of variable mixtures of clay, silt, sand, gravel, and cobbles.

Because of the well-graded composition of the alluvial materials, soils within the recreation areas are well suited for planting turf, trees, shrubs, or ground cover. Soil preparation is required in areas of mowed turd or ground cover. Soil amendments are provided around tree and shrub planting sites as required. Most soils in the project areas are susceptible to heavy erosion.

The geology of the Ukiah Valley is comprised of gravel to sandy sediments that are primarily clayey and sandy gravels that have the characteristic structure of stream deposition. The San Andreas Fault is located about 40 miles west of the Russian River, in addition to two other recognized faults located in the Ukiah region (USACE 1986).

3.1.2 Water Resources. The Lake Mendocino project regulates the natural water runoff from approximately 105 square miles of coastal mountains and from water diversions on the Eel River that are operated by Pacific Gas and Electric Company's Potter Valley Project No. 77.

Lake Mendocino is regulated for water supply and flood control. The total joint-use storage of 70,000

acre feet is between elevations 737.5 and 765 feet. Until recent years, water surface in the summer was raised to a maximum elevation of about 744 feet. The maximum encroachment has been raised to 748.8 feet which has increased the acre-feet storage capacity by 20,000. Approximately 90% of the natural runoff in the basin occurs from November through April. Runoff during the months of July through October is negligible. Diversion of water from the Eel River through the Potter Valley Powerhouse maintains the flow in the East Fork and the Russian River below Lake Mendocino during the summer months.

Lake Mendocino is typical of Northern California reservoirs thermally, becoming isothermal in the winter months and developing strong stratification in the low inflow summer months. Oxygen levels generally follow the same pattern with anoxic conditions developing near the bottom of the reservoir in the late summer. The anoxic conditions that persist in the reservoir in the late summer have had little effect on the quality of reservoir.

Since there is no multi-level outlet capability at the dam all releases are made through the low-level flood control outlet. Low flows released through the conduit re-generate in the tunnel and in the stilling basin. Odors related to hydrogen sulfide formation do occur, but are confined to the stilling basin area. The release of colder bottom waters during the summer has created a good summer habitat area for cold water fish.

Turbidity has traditionally been the main water quality problem associated with Lake Mendocino. The lake generally becomes turbid with the first heavy runoff of the year and remains turbid until early summer. The persistent turbidity problem associated with the project is the result of water diverted from the Eel River. This water transports a high percentage of very fine sediment that settles out of the water column very slowly. Since Lake Mendocino has a relatively short residence time much of this material never settles out in the reservoir. At present, there is a water-quality monitoring program at Lake Mendocino that consists of sampling stations at the inlet to and outlet from the reservoir and one station within the reservoir. Samples are collected according to the following schedule:

1. USACE personnel monitors pH, conductivity, temperature, dissolved oxygen and turbidity twice per month at the East Fork Russian River near Ukiah and East Fork Russian River near Calpella stream-gauging stations. These data are published by the U.S. Geological Survey (USGS). Twice-a-year monitoring is also done for trace elements, general chemical, and nutrients at these stations. Additionally, the Calpella station is monitored for biocides, herbicides, and PCB's.

2. At the Lake Mendocino monitoring station, two vertical profiles are taken by USACE during each fiscal year for dissolved oxygen, ph, temperature, conductivity and turbidity. While the profiles are being taken, water samples are collected at depths of 5 feet and from near the lake bottom. The samples from the lake are analyzed for trace elements, general chemicals, and nutrients.

Overall, the water quality at Lake Mendocino can be characterized as good, except for brief periods of degraded quality. The water is suitable for all municipal, industrial and agricultural use.

Lake Mendocino provides drinking water to the Cities of Ukiah, Healdsburg, Cloverdale, and Hopland and is subject to a water right permit under the Russian River Flood Control and Water Conservation Improvement District. The permit allows up to 8,000 acre-feet of water to be used for consumption annually (City of Ukiah 2014). The Sonoma County Water Agency (Sonoma Water) is the local cost-sharing partner for Lake Mendocino. Working together to manage the lake levels, Sonoma Water determines water releases when the water level remains in the water supply pool, while USACE is responsible for managing the releases when the water level rises the flood control pool of the Lake to

ensure flood risk management.

3.1.3 Air Quality. Mendocino County is located within the North Coast Air Basin. The North Coast Air Basin is comprised of the counties of Del Norte, Trinity, Humboldt, Mendocino, and that region of Sonoma County designated as the Northern Sonoma County Air Pollution Control District. For the purposes of regulating and monitoring air quality, Lake Mendocino and Mendocino County are under the jurisdiction of the Mendocino County Air Quality Management District, whose boundaries are the same as the existing boundaries of Mendocino County. The District is in attainment for all Federal criteria air pollutants and is also in attainment for all state standards except Particulate Matter less then 10 microns in size (PM10).

The Lake Mendocino Hydroelectric Plant at Coyote Valley Dam is operated and maintained by the City of Ukiah Electric Utility Department. The facility has a capacity of 3.5 MW (City of Ukiah 2014) and an annual production of 3,000 to 10,000 megawatt hours (MWh) per year, depending on the water year. The hydroelectric operations at the Coyote Valley Dam are a significant element in the City of Ukiah's attainment of air quality and climate change objectives in the North Coast Air Basin.

3.1.4 Climate. The climate of the Russian River watershed is mild, experiencing warm dry summers and cool wet winters. The close proximity to the Pacific Ocean helps regulate the climate experienced at Lake Mendocino. The temperatures in Ukiah typically range from an annual high temperature of 72.4 degrees Fahrenheit to an annual low temperature of 45.6 degrees Fahrenheit, with an average temperature of 59 degrees Fahrenheit. The annual precipitation for Ukiah is 40 inches. Precipitation normally occurs in the area between November and April, with winter storms originating from the Pacific Ocean (US Climate Data, 2018).

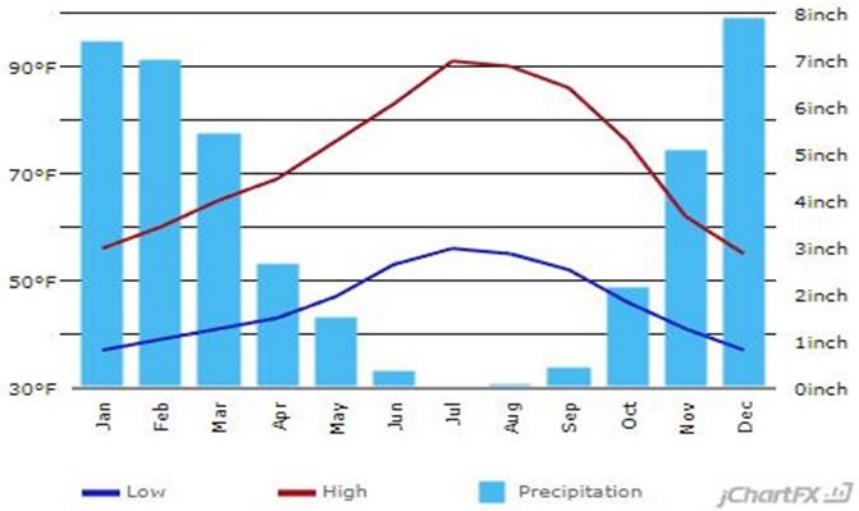


Figure 1, This figure shows average monthly climate data for the City of Ukiah, CA (1981-2010) (US Climate Data 2019).

3.1.5 Noise. Major noise sources in Mendocino County consist of highway and local traffic, railroad operations, airports, commercial and industrial uses, and recreational and community facilities. Highways with traffic that generate significant noise include U.S. Highway 101 and State routes 1, 20, 128, 162 175, and 253. The only active railroad operation in Mendocino County is the Skunk Train passenger line, which runs between the cities of Fort Bragg and Willits. Public use airports are located

in or near Ukiah, Willits, Covelo, Boonville, Gualala, and Little River. Major industrial noise sources are primarily lumber mills and timber products facilities (Mendocino County 2011). Sources of noise at the lake include that from recreational boat traffic, occasional construction, and the occasional public event.

3.1.6 Hazardous Materials. There are two above ground 500 gallon capacity fuel tanks; two propane tanks; a petroleum, oil and lubricant (POL) shed; paint storage building; a maintenance shop with compressed gas cylinders (acetylene, oxygen, argon and helium) within a flammable storage cabinet; and a wood shop with flammable storage cabinet in the vicinity of Lake Mendocino. A storage barrel for used sorbents and a barrel for used oil filters are located at the south end of the POL shed. These waste materials are picked up and disposed of under contract. No used oil, brake fluid, anti-freeze, chlorinated solvents or any other waste materials are collected or stored on site.

The designation of hazardous substances, to include unlisted hazardous waste, is identified in of 40 CFR Section 302.4. Hazardous substances stored at Lake Mendocino are not maintained in reportable quantities as listed in Table 302.4 of the CAR. Lake Mendocino is identified and authorized as a small quantity generator of hazardous waste through EPA permit number CAL 000 0510452 - Notification of Regulated Waste Activity. The California Health and Safety Code Section 25122.6 defines a small quantity waste generator of hazardous waste as one that produces less than 1,000 kilograms (270 gallons) in any month.

More detail on management of Hazardous materials is located in the Lake Mendocino Operational Management Plan (USACE 2013a).

3.1.7 Recreation and Aesthetic Resources. The Russian River Watershed is one of the most prominent and important recreational areas in northern California. Visitors to Lake Mendocino can enjoy an assortment of recreational activities on and around the lake. There are four campgrounds, several day use areas that support activities such as picnicking and disc golf, miles of trails used by hikers and equestrians, the Pomo Cultural Center, and a wildlife area. Further details on the variety of recreational opportunities offered at Lake Mendocino are provided in chapter 2.10 of the Master Plan.

Some portions of the recreational areas can be inundated during periods of higher water levels. This includes the access road to Bushay campground, the parking lot at the south boat ramp, and picnic structures at the Pomo day-use area. This leads to extended closures of project areas that would otherwise be open to recreation.

The aesthetic value of the lake area is a function of the lake itself, the shoreline, and the adjacent uplands. The area offers a wide variety of natural habitats ranging from forested areas to open grassland. Due to normal lake level fluctuation it is difficult to grow vegetation along areas of shoreline which at times may be less aesthetically pleasing.

3.2 NATURAL RESOURCES

3.2.1 Vegetation Communities. Vegetation communities identified during the 2011 floristic survey conducted by SC Environmental Inc. include Ruderal (64.96 acres), Non-Native Grassland (286.43 acres), Native Grassland (2.77 acres), Northern Hardpan Vernal Pool (0.02 acres), Coastal and Valley Freshwater Marsh (0.35 acres), Northern Coyote Bush Scrub (9.42 acres), Chamise Chaparral (18.69 acres), Urban Mix (94.82 acres), California Bay Forest (11.39 acres), Interior Live Oak Woodland (532.53 acres), Black Oak Woodland (6.51 acres), Oregon Oak Woodland (20.86 acres), Blue Oak Woodland (189.56 acres), and Upland Douglas Fir Forest (1.08 acres) (SC Environmental Inc. 2011).

A map of the vegetation communities at Lake Mendocino is shown in Figure EA-5.

3.2.2 Sensitive Communities. Sensitive communities are those of special concern to resource agencies because of their rarity and/or value as wildlife habitat, or those that are afforded specific consideration under Section 404 of the Clean Water Act (CWA), such as riverine, riparian, marsh, and seasonal wetland habitats, and other applicable regulations. This concern may be caused by the locally or regionally declining status of such habitat, or because they are important habitat to common and special-status species. Many of these communities are tracked in the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database, an inventory of the locations and conditions of the state's rarest plant and animal taxa and vegetation types (ibid).

A total of five sensitive communities were observed within the study area: Native Grassland, Northern Hardpan Vernal Pool, Coastal and Valley Freshwater Marsh, California Bay Forest, and Oregon Oak Woodland (ibid).

As recognized by (Sawyer *et al*. 2009) Native Grasslands on site are expressed as the *Danthonia californica* Herbaceous Alliance, California Bay Forest as *Umbellularia californica* Herbaceous Alliance, and Oregon Oak Woodland as *Quercus garryana* Woodland Alliance. These alliances are considered of high inventory priority as they have a Subnational Conservation Status Rank of S3 (CDFG 2010). A rank of S3 indicates a vegetation alliance or association as "Vulnerable" meaning it is at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.

Northern Hardpan Vernal Pools are represented on site by the Burke's goldfield area located below the dam. Although Sawyer *et al*. 2009 has not described vegetation alliances dominated by *Lasthenia burkei* therefore it has not been assigned a Heritage Rank. However, Northern Hardpan Vernal Pool has been assigned Heritage Rank or Subnational Conservation Status Rank of S1 (CDFG 2010). A rank of S1 indicates a vegetation alliance or association as "Critically Imperiled" because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

Coastal and Valley Freshwater Marsh is considered of high inventory priority as it has a Subnational Conservation Status Rank of S2 (CDFG 2010). A rank of S2 indicates a vegetation alliance or association as "Imperiled" because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.

East Fork Russian River, Lake Mendocino, Howard Creek, and the unnamed tributaries lie within the study area. These hydrologic features exhibit ordinary high water marks and evidence of scour. As potentially jurisdictional waters under Section 404 of the CWA, they are treated as sensitive natural communities. (SC Environmental Inc. 2011)

3.2.3 Fisheries. Native fish species that currently inhabit , or that have historically inhabited the East Fork of the Russian River include Steelhead (*Oncorhynchus mykiss*), California Coast fall chinook salmon (*Oncorhynchus tshawytscha*), the Central Coast coho salmon (*Oncorhynchus kisutch*), coastal rainbow trout (*oncorhynchus mykiss irideus*), hardhead (*Mylopharodon conocephalus*), Pacific lamprey (*Entosphenus tridentata*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomas occidentalis occidentalis*), and the Russian River tule perch (*Hysterocarpus traskii pomo*).

(UC Davis)

Numerous non-native species also inhabit this fork including bluegill (*Lepomis macrochirus*), brown bullhead (*Ameiurus nebulosis*), common carp (*Cyprinus carpio*), golden shiner (*Notemigonus crysoleucas*), green sunfish (*Lepomis cyanellus*), largemouth bass (*Micropterus salmoides*), redear sunfish (*Lepomis microlophus*), smallmouth bass (*Micropterus dolomieu*), and western mosquitofish (*Gambusia affinis*). (UC Davis)

Construction of the dam created a barrier to upstream migration for anadromous salmonids resulting in the loss of spawning habitat above the dam. The Don Clausen Fish Hatchery at Lake Sonoma along with the imprinting ponds and egg collection facility below Coyote Dam provides for the release of 40,000 steelhead smolt annually. These releases are to mitigate for the loss of upstream spawning habitat on the East Fork of the Russian River. (USACE 2013a)

Fish habitat in the area inundated by the dam has been significantly altered. Summertime temperatures raise the surface water temperature and oxygen is drawn from the cooler deep water resulting in lowered dissolved oxygen throughout the lake. Water temperatures and oxygen levels no longer support cold water species such as rainbow trout. In addition, reservoir management normally causes a 20ft annual variation in water levels. This prevents the establishment of emergent and submerged vegetation around the lake perimeter. The resulting lack of cover and food source has created challenges for fisheries management at the lake. Various methods of providing cover along the shore have been employed in coordination with the California Department of Fish and Wildlife, including the placement of brush structures, Christmas trees and concrete tiles.

Common species in Lake Mendocino now include largemouth bass, smallmouth bass, striped bass (*Morone saxatilis*), bluegill, black crappie (*Pomoxis nigromaculatus*), white crappie (*Pomoxis annularis*), channel catfish (*Ictalurus punctatus*), white catfish (*Ictalurus catus*), brown bullhead (*Ameiurus nebulosis*) and a variety of non-game species. Rainbow trout stocked in the river above the lake occasionally migrate downstream for brief periods in the spring and fall, when dissolved oxygen levels in the lake are higher.

Fish Stocking Practices
The California Department of Fish and Wildlife through their Inland Fisheries Division, has the overall responsibility for the fishery program at Lake Mendocino. The fish management program is supervised by professionally trained fisheries biologists stationed at Ukiah and Redding, California. The goal of the State's fisheries program is to produce the best fishing possible for the maximum number of people. The fisheries management program is geared to test, evaluate and provide a greater variety of fishing opportunity by using techniques to primarily favor native species. USACE policy is to cooperate with and support studies and subsequent fisheries management recommendations of the reservoir fishery biologist where mutually beneficial and consistent with established goals. (USACE 2013a)

Lake Mendocino is stocked with largemouth and smallmouth bass, white and black crappie, bluegill, and 3 species of catfish. Striped bass are stocked in years when the local Striped Bass Club has the funding.

3.2.4 Wildlife. Habitat around Lake Mendocino supports a variety of wildlife that has shown little significant decrease as a result of recreational development. Although the total area of habitat available to wildlife has been reduced by the lake and its improvements, habitat quality is generally good. The land and its plant associations support populations of Black-tailed deer, predatory and small game species, and a variety of non-game mammals, birds, reptiles, amphibians and insects. (USACE 2013a)

Large Mammals.
Black-tailed deer are the most prevalent large mammal, with 80-140 deer per square mile observed in a CDFW helicopter survey of the wildlife area and adjoining private lands as cited by the OMP. Deer are most abundant in the oak woodlands within the wildlife area on the east and south sides of the lake. This area is shown in Figure EA-4. Forbs, annual grasses, acorns and palatable shrubs provide ample food.

Irrigated lawns in Bushay Campground are grazed daily by deer. The west side of the lake supports a smaller deer population, limited by private development and thick stands of brush. The north end is sandwiched between highway and lake, and is heavily developed, thus supporting few deer.

Many predatory mammals occur in the interspersed chaparral/oak woodland/grassland plant communities. A map of the vegetation communities is shown in Figure EA-5. Occasionally observed are gray fox, coyotes, bobcats, skunks, raccoons and weasels, preying upon abundant small mammal and bird populations. There have been rare sightings of mountain lions and bears, usually on the east side of the lake. Feral domestic cats are prevalent in all the recreation areas, and are trapped and removed as time permits. In fall 1990, a family of river otters was observed in the river inlet and marina area at the north-east end of the lake. The family, consisting of five animals, was seen in Perry Creek Cove in the fall of 1995. One pup was spotted on the Inlet in 2002, and another otter was observed in 2006 just off Jet Ski Beach.

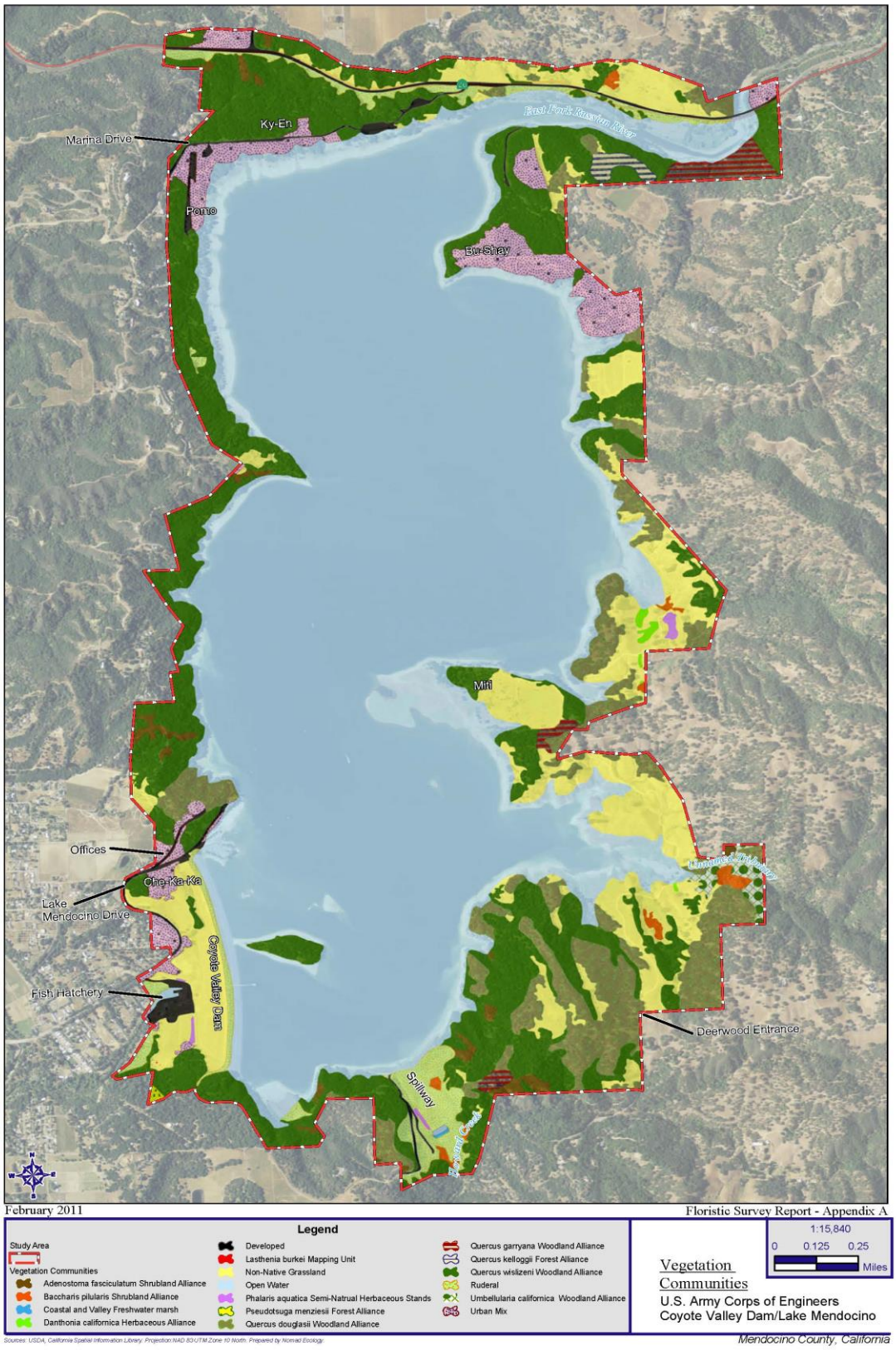


Figure EA-5. Vegetation Communities.

Small Mammals.
Many species of rodents are common to all areas of the park. The brushier areas are inhabited by brush rabbits, blacktailed jackrabbits, California Ground squirrels, dusky-footed woodrats, deer mice and opossums. Western gray squirrels, Sonoma chipmunks, brush rabbits, house mice and western harvest mice are frequently observed in the wooded camping areas. Grasslands support pocket gophers, moles, shrews, California voles and the various mice, rats and ground squirrels associated with meadow habitat. Many species of bats are common, preying on the insects attracted by the lake environment. In 1997-1998, about a dozen bat boxes were installed, and 10 years later almost all of these are still utilized by bats. (USACE 2013a)

Avian Fauna.
The park supports a varied and abundant avian fauna throughout all seasons of the year. As of 2003, a total of 194 species have been sighted at least one time at the park. A list of migratory bird species provided by the U.S. Fish and Wildlife Service is located in Appendix EA-1.

In the fall and winter months the lake serves as habitat for migratory waterfowl, such as western and eared grebes, American coots, buffleheads, wood duck, Canada geese, brown pelicans, cormorants, and many other ducks and geese. Feral domestic ducks and geese reside year around at the north and south-east ends of the lake. These birds pose a management problem as they compete with native species for resources, and may transmit disease and parasites to them.

Great blue herons are year-long residents, while common egrets appear in the winter, summer and fall. Green herons nest in willow groves along the river inlet and outlet.

Osprey fish the lake coves and inlet. As many as six osprey were seen in the summer of 1990. However, today they are not consistently seen. There are no known nesting sites at the lake. Nesting platforms were installed at the lake in fall 1990. To date the platforms have not been used. (USACE 2013a)

In the open grasslands, towhees, Brewer's blackbird, cowbirds, robins, sparrows, goldfinches, meadowlarks, phoebes, king birds, juncos, thrush, kinglets, larks and warblers are all abundant during the various seasons.

Ninety bird boxes were installed in 1996-1997. About 12 wood duck boxes were also installed at that time. Most of the bird boxes were cleaned out and/or repaired in 2006. The wood duck boxes were utilized more by screech owls than wood ducks. (USACE 2013a)

Turkeys inhabit the upland oak woodlands/grasslands, and feed on mast and other seeds from annual and perennial grasses and forbs. Turkeys (Meleagris gallopavo) were introduced to the Ukiah area several years ago by DFG, and have since become an important game species in the wildlife area. DFG by-drawing-only hunts are held in the fall and spring. In the spring 2007 hunt, 25 adults and 10 juniors draw for hunts on seven days. Of those, 12 of 26 hunters (46%) bagged a turkey. Fall turkey hunts are less successful as the turkeys cannot be called as easily. (USACE 2013a)

Chaparral-covered hills provide habitat for quail, several hummingbird species, wrentits, wrens, and northern mocking birds.

Oak woodlands support the greatest abundance of predatory birds. Red-tailed hawks, bald and golden eagles, barn owls, screech and great-horned owls feed on larger rodents and rabbits, while sparrow hawks and kites feed on smaller rodents and insects. The oaks provide food and cover for the acorn

woodpecker, red-shafted flicker, titmouse, nuthatch and scrub jay. In proximity to intensive use camping areas, starlings, blackbirds, ravens, crows and house finches are more numerous than in other habitats.

Amphibians and Reptiles.
Western pond turtles occupy the shallow lake and river areas along with bullfrogs and foothill yellow-legged frogs. Exotic red-eared pond sliders share similar habitat with western pond turtles, and have the potential to displace them. Pacific tree frogs are common on shrubs close to streams or the lake's edge, and during the rainy season, salamanders can be found under decaying logs and leaf litter. Western toads live among the vegetation, while newt inhabit the streambeds.

The western fence lizard is the most common reptile seen, and occupies rocky areas along with the western skink. Alligator lizards prefer wooded areas.

Both gopher snakes and the northern pacific rattlesnake depend heavily on the high rodent population. Rattlesnakes are most in common in the primitive areas of the park, but can been seen in other park locations as well. The common and mountain kingsnakes feed on small mammals and other snakes. Garter snakes, racers, rubber boas, ringnecked snakes and sharp-tailed snakes are also seen in the park.

3.2.5 Threatened and Endangered Species. USACE requested a list of species and critical habitat under U.S. Fish and Wildlife Service jurisdiction that are known or expected to be in or near the project area. This list is included as Appendix EA-1. The list includes federally endangered and threatened species, critical habitat and migratory bird species.

Federally Listed Wildlife

No federally listed species are known to occur at Lake Mendocino other than the steelhead that occur at the fish imprinting facility below the dam.

Special Status Plant Species

A floristic survey conducted in 2011 found the potential for only one federally listed species, the Burke's goldfields (*Lasthenia burkei*) to occur within project boundaries (SC Environmental 2011). Burke's goldfields is federally and state listed as Endangered and is designated a CNPS List 1B.1 species indicating it is rare and seriously endangered in California (CNPS 2011). This species is an annual of the sunflower (Asteraceae) family.

This taxon is a small, slender annual herb that produces opposite leaves. Both the ray and disc flower of Burke's goldfields are bright yellow, while the pappus of the species usually consists of one long bristle and several short bristles. In similar members of the genus, the pappus is usually absent or consists of two or more long bristles. It is differentiated from other species in the genus by having greater than six free phyllaries, pinnately lobed leaves, lacking glands, and short fruits. It blooms from April to June (CNPS 2011).

Burke's goldfields occupy mesic meadows and seeps and vernal pools (CNPS 2010). It has been recorded as occurring in Lake, Mendocino, Napa, and Sonoma counties between 49 to 1,968 feet (15 to 600 meters) in elevation (CNPS 2011).

Management Unit # 4 consists of three small areas that have been designated as Unique Wildflower Areas due to the current or past presence of Burke's goldfields. This designation is intended for the

protection of this species (See Chapter 4 of the Management Plan).

Two of these areas were identified in the 1977 Master Plan.

Site #1 Wildlife Management Area: USACE last confirmed the presence of the Burke's Goldfields at this site in 2010. In January 2019, habitat supporting the flower, including two vernal pools, was identified in the Wildlife Management Area. This location is in the same general area as identified in the original Master Plan. The site is located in an isolated area away from trails. No improvements are recommended for this site.

Site #2 Spillway: This site was originally identified in the Master Plan as being located just east of the spillway, close to the shore. USACE staff visited the area in January 2019 to identify the general area where the flower might exist. No such area that had conditions related to the Burke's Goldfields was observed. It is believed that this unique wildflower area has since been eroded or washed away. A future floristic survey is recommended to confirm the presence of the Burke's Goldfields in this location.

The 2011 survey by SC Environmental Inc. detected Burke's goldfields in the Operations Area located below the dam. An approximate total of 1,200 individuals are included in three small depressions. This occurrence represents the northernmost station for this taxon throughout its range. This site is also included in Management Unit 4 as Site #3.

Site # 3 Below the CVD: This site is located below the CVD and just south of the egg collection facility. A site visit in January 2019 confirmed the presence of vernal pools, an indicator of Burke's Goldfields habitat. This area is closed to public access. Development in this area is not recommended due to the presence of the flower and the possibilities to expand its range in the area. USACE should consult with the USFWS on improving the surrounding habitat and potential for spreading the flower.

Currently these depressions do not contain invasive weed species and are generally dominated by Burke's goldfields. The 2011 Survey report recommended that management considerations for this taxon should be focused on annual monitoring that includes an assessment of Burke's goldfields population health and the potential of invasive weed species intrusion, which could do harm to the population by outcompeting this taxon or by changing the ecological conditions of this micro habitat and potentially cause extirpation. There should also be a focus on minimizing invasive species spread and introductions into the area surrounding Burke's goldfields.

The survey also determined that suitable habitat is present at Lake Mendocino for 11 State species of concern including watershield (*Brasenia schreberi*), bristly sedge (*Carex comosa*), Koch's cord moss (*Enosthodon kochii*), minute pocket moss (*Fissidens pauperculus*), small groundcone (*Kopsiopsis hookeri*), Hall's bush mallow (*Malacothamnus hallii*), Baker's navarretia (*Navarretia leucocephala* subsp. *bakeri*), Lobb's aquatic buttercup (Ranunculus lobbii), beaked tracyina (Tracyina rostrata), and western viburnum (Viburnum ellipticum). Of these potential species only Baker's navarretia and Lobb's aquatic buttercup were identified during the survey.

Critical habitat.

There is no critical habitat for any federally listed species of flora or fauna within the Lake Mendocino project boundary.

3.2.6 Wetlands. The 2011 floristic survey identified two wetland types in the project area: Northern Hardpan Vernal Pools (0.02 acres) and Coastal and Valley Freshwater Marsh (0.35 acres). These areas are shown in figure EA-6.

Figure EA-6. Special Status Resources and Invasive Weeds

Depressions in the Unique Wildflower Area below the dam were classified as Northern Hardpan Vernal Pools. This community is a low, amphibious, herbaceous community dominated by annual herbs and grasses. Germination and growth begin with winter rains, often continuing even when inundated. Rising spring temperatures evaporate the pools, leaving concentric bands of vegetation that encircle the drying pool. Keeley and Zedler (1998) describe vernal pools as precipitation-filled seasonal wetlands inundated during periods when temperature is sufficient for plant growth, followed by a brief waterlogged-terrestrial stage and culminating in extreme desiccated soil conditions of extended duration. Keeley and Zedler (1998) further state that an important characteristic of the vernal pool flora is that it comprises two elements: widespread cosmopolitan aquatic taxa and specialized Californian endemics.

Coastal and Valley Freshwater Marsh is dominated by perennial, emergent monocots, 1-15 feet (0.40-4.5 meters) tall, adapted to growing in conditions of prolonged inundation (Holland 1986). It typically occurs on sites that lack a significant current that are permanently flooded by freshwater along the edges of water bodies, dune swales, slough terrace edges, banks, channels and mouth margins of rivers, bottomlands, ditch margins, lagoons, ponds, reservoir margins and along geologic faults. This community is most extensive in the upper portion of the Sacramento-San Joaquin River Delta. In the project area this community is typically located near the inundation zone of the lake where slopes are gentle and interface with non-native grasslands. Soils at these locations are saturated for prolonged periods of time. The only mapped polygon of this community is located on the spillway which is dominated by spike rush (*Eleocharis macrostachya*). However there are a few small colonies of this community along the southeastern edge of the lake which support a dominance of brown sedge (*Carex subfusca*), fox sedge (*Carex vulpinoidea*), and pennyroyal, in part. (SC Environmental Inc. 2011)

3.2.7 Invasive Species. Exotic and invasive plant species are a part of the existing ecosystem at Lake Mendocino. These invasive species have the ability to rapidly disrupt land and water resources if not aggressively managed. Over time, native species can be replaced and the ecology altered. Additionally, the interdependence and connectivity between the flora and fauna will be out of balance, and the fauna may relocate to find habitat required for preferred food, shelter, or habitat structure. Invasive species not only have tremendous consequences on altering ecosystem compositions, but also economically high costs stem from labor, materials, and equipment to control.

The 2011 floristic Survey detected a number of non-indigenous species in the project area. These include: false brome (*Brachypodium distachyon*), yellow star thistle (*Centaurea solstitialis*), poison hemlock (*Conium maculatum*), orchard grass (*Dactylis glomerata*), oblong spurge (Euphorbia oblongata), fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana*), Klamath weed (*Hypercium perforatum*), Harding grass (*Phalaris aquatica*), Himalayan blackberry (Rubus armeniacus), medusahead (*Taeniatherum caput-medusae*), and periwinkle (*Vinca major*).

Executive Order (EO) 13112 provides direction and asks Federal agencies to identify and reduce actions that introduce or spread invasive species. All Federal land and water management agencies within the Department of Interior (DOI), National Oceanic and Atmospheric Administration (NOAA), and Department of Defense (DOD) have authority to control and manage invasive species as well as restore affected areas on their lands and waters. This authority arises from the various agency regulations and other statutes that govern management, uses, and planning on the lands and waters under their jurisdiction. The level of effort and budgetary resources for management, control, and restoration vary with each Department. None of them has the resources to control every invasive species present on Federal lands and waters. Departments and their agencies also work in partnership with states and private

landowners to control invasive species on public lands.

Control of non-native grasses are accomplished at Lake Mendocino through mowing and spraying along road shoulders shorelines, and in the recreation areas. Yellow star thistle and cocklebur are pulled by hand.

Poison Oak, while a native, is also controlled in the Bushay and Kyen campgrounds, along the Shakota Trail and in the Frisbee golf courses.

Feral pigs are also a problem on the east side of the lake. Their rooting causes erosion on the steep topography. Consumption of acorns by pigs can greatly reduce oak recruitment. Lake staff, in coordination with local agencies needs to develop a management plan for feral pigs.

Quagga and zebra mussels are a problem in many reservoirs. They are introduced by recreational vessels that have not been properly cleaned. Neither of these mussels have been introduced to Lake Mendocino yet. Lake staff are coordinating with stakeholder agencies to obtain funding for and implementation of a comprehensive program to prevent any introductions.

A grazing program at Lake Mendocino would help reduce the hazard of wildfire by directly reducing the amount of vegetation. The program, through work-in-lieu-of rent, can be used to reduce maintenance costs of vegetation management, control invasive plant species (such as yellow star thistle and cocklebur), can be used to increase diversity of plant and animal species, control erosion from water runoff for improved water quality, improve vegetation along stream banks and provide opportunities to improve infrastructure. As part of Lake Mendocino's vegetation management program, it can be managed so that there are no conflicts with the recreation and public use of the project.

3.3 SOCIONOMIC CHARACTERISTICS

3.3.1 Population and Economy. As of the 2010 Census, the City of Ukiah had a total population of 16,075 people. The annual population estimate for 2017 was 16,036. In 2010 the median age was 35.9 years and there was a household average size of 2.48 persons. The median household income in 2016 was $38,686. Additionally, the majority of residents in Mendocino County identified as white, with Hispanic being the second largest minority group in 2010 (U.S. Census Bureau 2010). Table EA-3 compares the population in 2017 for several counties, including Mendocino County, to the average growth rate over the time period of 2010-2017. Mendocino County experienced nominal population growth. A forecast of population growth by county done by the California Department of Finance shows that the population of Mendocino County will have grown by about 2,500 between 2010-2020. The projected population for Mendocino County by 2060 is just over 96,000. (CDF 2007)

Table EA-3. Current Population by County and Average Growth Rate. (US Census Bureau 2010)

County	2017 Population	Percentage Average Growth Rate (2010–2017)
Mendocino	88,018	0.2%
Sonoma	483,870	4.2%
Napa	136,530	3.3%
Butte	220,002	4.2%
Solano	413,344	7.8%

The great majority of the population that utilizes Lake Mendocino resides in or near the City of Ukiah. The average income in Ukiah is $64,014. Table EA-4 shows additional statistics on the distribution of income ranges. Table EA-5 shows that the population of Ukiah has increased slightly, resulting in an increase in housing units but also two times the number of vacant housing units.

Table EA-4. Income Distribution in 2016

Income Range	Households	Percent
Less than $25,000	1,958	31.9%
$25,000 to $34,999	812	13.2%
$35,000 to $49,999	753	12.3%
$50,000 to $74,999	1,100	17.9%
$75,000 to $99,999	594	9.7%
$100,000 to $149,999	631	10.3%
$150,000 to $199,999	136	2.2%
$200,000 or more	150	2.4%
Total	6,134	100%

Table EA-5. Population and Housing

Year	Population	Total Housing Units	Occupied Housing Units	Percent Vacant	Persons Per Household
2000	15,497	6,137	5,985	2.5%	2.47
2010	16,075	6,488	6,158	5.1%	2.48

An economic and demographic profile of Mendocino County was done in 2011 by the Center for Economic Development at California State University, Chico (CSU Chico 2011). The study revealed that the utilities sector had experienced the most growth in Mendocino County and farming jobs had decreased significantly. Government jobs comprised the highest percentage of overall jobs in 2008 for Mendocino County, followed by retail and health care/social assistance jobs. In 2009 the City of Ukiah had the largest labor force of any other city or town within Mendocino County.

Table EA-6. Pertinent Population Data (Source: 2010 U.S. Census Bureau)

Locality	Population (2010)	2013 Population Estimate	Median Household Income (2008-2012)	Population Below Poverty Level (2008-2012)
Polk County	430,640	451,677	$58,096	11.3%
Dallas County	66,135	74,641	$71,878	7.0%
Boone County	23,306	26,364	$51,284	9.0%
Madison County	15,679	15,448	$56,765	9.2%
Warren County	46,225	47,336	$62,778	7.3%
Story County	89,542	92,406	$49,683	20%

3.3 2 Transportation. Lake Mendocino can be accessed either from the west on U.S. Highway 101 and across Ukiah surface streets or directly from State Highway 20 from the north. There is no direct access by bus to the lake but the Mendocino Transit Authority has service to Lake Mendocino Drive and Seiji Way, which is a 30-minute walk to the lake.

Access to specific locations within the project is provided by a network of two lane local roads. Within the project boundary, a mix of paved and unpaved roads, parking lots, and trails provide access to different recreation areas. Internal access also is provided by regional trails, such as the Kaweyo and Shakota Trails. Transportation within the project also is facilitated by the existing marina and numerous boat ramps.

Developed roads and parking lots exist on lands classified for project operations and intensive use in the 1977 Master Plan. These roads and parking lots are confined to areas that support developed recreational sites. The undeveloped portions of the project have limited transportation infrastructure. Trails run throughout the project and provide access to certain portions of these lands. Land Classification definitions are discussed in greater detail in Chapter 4 of this Master Plan.

3.3.3 Safety. The USACE works to ensure a safe and enjoyable experience for all visitors at Lake Mendocino. Safety at the lake is maintained through a variety of different mechanisms. The Project Safety Plan, can be found as an appendix to the Lake Mendocino Operational Management Plan (USACE 2013a). The Project Safety Plan identifies safety concerns, responsibilities, accountable individuals and management techniques for different environments at the project. To promote general visitor safety, bulletin boards are posted throughout the different recreation sites with information on water safety, trail use, and natural hazards. Some of the educational programs provided also are

focused on safety, with a special emphasis on water safety. Safety within project lands is a responsibility of USACE with the assistance of local emergency services.

3.3.4 Cultural Resources. The term cultural resources is broadly defined as the buildings, structures, objects, sites, districts, and archeological resources associated with historic or prehistoric human activity. Cultural resources that are listed in, or eligible for listing in, the National Register of Historic Places (NRHP) are referred to as "historic properties." Such properties may be significant for their historic, architectural, scientific, or other cultural values and may be of national, state, or local significance.

Cultural resources are representative of broad patterns, themes, events and people in prehistory and history. Previous pre and post construction archaeological studies have been completed at the dam and lake location between the late 1940s and late 1970s. These past studies have determined that the s environment was favorable during the prehistoric period with riparian and other inland resources accessible along the Russian River and other water sources flowing through the region. Based on these past studies, it appears that Native American occupation in the area extend 5,000–8,000 years into the past, but also likely predates this. Studies suggest that prehistoric populations increased over time with a shift from a hunter-gather regimen to more permanent settlements with the development of stable and predictable subsistence procurement and food storage. The sites types identified, indicate that loci attributed to Native American occupation were sought for proximity to available resources, accessibility, and protection from seasonal flooding in the area. The types of sites in the area are made up of lithic scatters, tool material procurement, habitation sites, rock art sites, and subsistence processing sites including bedrock mortars or other milling feature.

The most recent archaeological study of the area was completed in 2011. The study was completed as a Section 110 of the National Historic Preservation Act (Section 110). Under Section 110, USACE is required to take responsibility for historic properties by establishing a program to identify, evaluate, and nominate (if appropriate) these sites to the National Register of Historic Places (NRHP). Identification and evaluation of these properties are to be performed by individuals qualified under the *Secretary of the Interior's Standards for Archaeology and Historic Preservation* (36 CFR 61 Appendix A). To comply with Section 110, a survey of USACE fee-title lands around Coyote Valley Dam and Lake Mendocino Reservoir was completed (Reddy 2011). As part of this undertaking, a records search was completed for the project, which determined that 31 cultural resources had been identified in the project area over a 50 to 60 year period. Moreover, fifteen archaeological surveys, three historical overviews, three testing programs, two survey and testing investigations, two lake inundation studies, one ethnohistorical study, and one planning study have been conducted for USACE-managed lands at the dam and lake. Many of these previous sites are now submerged within the lake.

Recent archaeological studies in the region that have resulted in the development of cultural and chronological interpretations of the study area are not presented here. The interested reader is referred to the most relevant of these outlining Native American prehistoric and historic-period occupation of the dam and lake area, Jones and Klar (2007) and Reddy (2011). The lake area has also seen a long and rich period of historic occupation, which is also well defined and presented in Reddy (2011).

Section 106 of the National Historic Preservation Act (Section 106) requires Federal agencies to take into account the effects of a proposed undertaking on properties that have been determined to be eligible for listing in, or are listed in, the National Register of Historic Places. The development and possible change of these land use classification changes are a type of undertaking with the potential to effect historic properties. Once land use changes are adopted through the lake management plan consultation with the SHPO and tribes will be required and completed.

4.0. ENVIRONMENTAL CONSEQUENCES

This section of the EA describes the environmental consequences associated with the alternatives presented in Section 3.0. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. These elements are considered in the following impact analysis.

Adoption of the proposed Master Plan revision would help define the approval process for future actions affecting project lands, depending on whether the actions are 1) specifically included in the revised Master Plan, 2) not included in the revised Master Plan, but consistent with the Plan, or 3) not included and not consistent with the recommendations, objectives and policies stated in USACE regulations (USACE, 2009). For actions that are identified in the revised Master Plan, the approval process would still require adequate NEPA consideration prior to initiating construction.

It is important to note that this EA assesses the impacts of adopting the land classifications included in the proposed Master Plan but not the specific recommended future management actions and opportunities mentioned in Table EA-2, of this document. These recommendations will be part of the Operational Management Plan and identified as tasks which will be reviewed and completed at a later date. Because of the wide variety of possible future management recommendations or tasks that could be proposed, an additional evaluation to determine consistency with the stated site objectives and further NEPA consideration on a project-by project basis would be required as these tasks are undertaken.

The implementation of the revised Master Plan would not result in any irreversible environmental conditions. Environmental impacts of the No Action and Agency-preferred Alternative (adopt and implement Master Plan) are displayed in table EA-7. When future recommendations are ready for implementation, additional site specific analysis and review for NEPA compliance will be undertaken. Only resources that have either a beneficial or possible adverse impact will be discussed further in Section 4.1. Potential impacts of the proposed Master Plan are shown in table EA-7.

Table EA-7. Environmental Impacts

	NO ACTION IMPACTS			PREFERRED ALTERNATIVE		
Resource	**No Impact[1]**	**Beneficial**	**Adverse**	**No Impact**	**Beneficial**	**Adverse**
Physical Environment						
Geology, Topography, Soils	X			X		
Water Resources	X			X		
Air Quality	X			X		
Climate	X			X		
Noise				X		
Hazardous Materials	X			X		
Recreation and Aesthetics				X	X	
Natural Resources						
Vegetation				X	X	
Fish and Wildlife				X	X	
Threatened and Endangered	X			X		
Wetlands	X			X		
Invasive Species				X	X	
Socioeconomics						
Community Growth	X			X		
Community Cohesion	X			X		
Displacement of People	X			X		
Environmental Justice	X			X		
Property Value/Tax Base	X			X		
Public Facilities & Services	X			X		
Employment	X			X		
Business Growth	X			X		
Farm Displacement	X			X		
Transportation	X			X		
Safety	X			X		
Cultural Resources	X			X		

[1] No Adverse Impacts Anticipated

4.1 Effects on Water Resources. Implementation of the No Action Alternative would not result in impacts to water quality since the Master Plan would remain unchanged.

The land reclassifications and updated resource objectives to be implemented by the Agency-Preferred Plan would allow land management and land uses to be compatible with the goals of good stewardship of water resources. Therefore there would be no significant adverse impacts to water resources.

4.2 Effects on Air Quality. Implementation of the No Action plan would not result in impacts to air quality since the Master Plan would remain unchanged.

Existing operation and management of Lake Mendocino is compliant with the Clean Air Act and this would not change with the implementation of the proposed Master Plan revision. Therefore there would be no significant adverse impacts to air quality.

4.3 Effects on Climate. Implementation of the No Action Alternative would not result in impacts to climate since the Master Plan would remain unchanged.

Implementation of the Agency-Preferred Plan would not have a negative effect on climate. Ongoing research by the USACE Institute for Water Resources on carbon sequestration potential of USACE-owned land and water demonstrates a potential to capture and store greenhouse gases in vegetation and in reservoir sinks. This could be a beneficial climate change mitigation opportunity in the future were it to be pursued.

4.4 Effects on Noise. Implementation of the No Action Alternative would not result in impacts to noise levels since the Master Plan would remain unchanged.

The Agency-Preferred Plan would have no effect on noise levels at Lake Mendocino. Lands currently classified for intensive use or operations have the greatest potential to create noise within the project boundary, but there will be no expansion of high density recreation areas with the updated Master Plan. Areas within the project have limited noise sources mainly coming from recreational boat traffic with occasional short-term impacts from construction actions.

4.5 Effects on Recreation and Aesthetic Resources. Implementation of the No Action Alternative would not result in impacts to recreation and aesthetic resources since the Master Plan would remain unchanged.

The Proposed Alternative would change land use classification in the recreation areas. This does not change the activities allowed in these areas or how they will be managed. However, recommendations presented in the Resource Plan would improve the recreational experience at the lake. Renovation and manning of the Visitor Center, raising the Bushay access road and the parking lot at the south boat ramp, improvements to the disc golf courses, upgrading of some campsites, and flood proofing structures at the Pomo day use area would substantially improve the experience visitors have. Therefore the Agency-Preferred Plan would have a beneficial effect on recreation. Any action taken on these recommendations would be evaluated as appropriate under NEPA prior to implementation.

4.6 Effects on Vegetation. Implementation of the No Action Alternative would not result in impacts to vegetation since the Master Plan would remain unchanged.

Under the Proposed Alternative the District would continue to manage the adjacent and nearby habitat for wildlife following the current operating management plans using best management practices and guidance for Environmental Stewardship. With implementation of the Master Plan, vegetative resources

would be better accommodated through analyzing natural resources based on current conditions, resource suitability, and trends occurring on the landscape. Following goals and objectives found in Chapter 3 of the Master Plan would benefit natural resources by improving the health of local habitats which in turn encourages wildlife diversity.

4.7 Effects on Fish and Wildlife. Implementation of the No Action Alternative would not result in impacts to fish and wildlife resources since the Master Plan would remain unchanged.

The Proposed Alternative does not directly change the way fish and wildlife are managed at the lake. There are no additional management measures for fish and wildlife recommended in the Resource Plan. The proposed Master Plan would update the goals and objectives underlying the management of fish and wildlife resources of the lake. Following these goals and objectives found in Chapter 3 of the Master Plan would benefit fish and wildlife by improving the health of local habitats and, in turn, encourages wildlife diversity. Therefore implementation of the Proposed Alternative could beneficially effect fish and wildlife resources.

4.8 Effects on Threatened and Endangered Species. Implementation of the No Action Alternative would not result in impacts to federally listed species since the Master Plan would remain unchanged.

The only federally listed species occurring at Lake Mendocino is Burke's goldfields. It has been present in three areas that are currently designated as Unique Wildflower Area. The Agency-Preferred Plan would change the land use class of this Management Unit to Environmentally Sensitive Area, with no change in how the unit is managed. Site #3 will be added to Management Unit 4 and reclassified from Operations to Environmentally Sensitive Area. Therefore implementation of the Proposed Alternative would have no effect on threatened and endangered species.

4.9 Effects on Wetlands. Implementation of the No Action Alternative would not result in impacts to wetlands since the Master Plan would remain unchanged.

The Agency-Preferred Plan does not change the management of wetland areas at Lake Mendocino. The two wetland areas of note both occur in the restricted area below the dam. The Environmentally Sensitive Area containing Burke's goldfield contains 0.02 acres of Northern Hardpan Vernal Pool and there is .35 acres of Coastal and Valley Freshwater Marsh located at the bottom of the spillway. There would be no significant adverse impacts to wetland habitat due to the implementation of the Agency-Preferred Plan.

4.10 Effects on Invasive Species. Implementation of the No Action Alternative would not result in impacts to invasive species since the Master Plan would remain unchanged.

The District would continue to implement the existing invasive species control measures under the Proposed Alternative. In addition the updated Resource Plan recommends action to control the feral pigs in the Wildlife Management Area and to coordinate with stakeholder agencies to develop a plan to prevent the introduction of quagga and zebra mussels. These actions would be beneficial in the control of invasive species.

4.11 Effects on Socioeconomics. Implementation of the No Action Alternative would not result in impacts to low income or minority populations or children since the Master Plan would remain unchanged. Visitors would continue to come to Lake Mendocino from surrounding areas. Many visitors purchase goods such as groceries, fuel, fishing and camping supplies, locally, eat in local restaurants, stay in local hotels, and shop in local retail establishments. These beneficial effects would continue.

The Agency-Preferred Plan would not change the beneficial effects mentioned in the No Action alternative. If the Resource Plan measures for improvement of the recreation areas were implemented, increased attendance at the lake could enhance these beneficial effects. There would be no adverse impacts on the economy in the area and no disproportionately high or adverse impacts on minority or low income populations or children as a result of the Agency-Preferred Plan.

4.12 Effects on Transportation. Implementation of the No Action Alternative would not result in impacts to transportation since the Master Plan would remain unchanged.

The Proposed Alternative would include upgrades to boat ramps, parking lots and other areas of congestion. Increased traffic from construction could result in minor temporary local impacts on traffic and transportation, but impacts would likely be negligible. The updated Resource Plan recommends the expansion and reconfiguration of entrance station areas, parking areas and boat ramps at various recreation areas and would have long-term beneficial impacts on in-park vehicular traffic flow, likely reducing congestion. The proposed alternative would have no adverse impact on regional transportation.

4.13 Effects on Safety. Implementation of the No Action Alternative would not result in impacts to safety since the Master Plan would remain unchanged.

The Proposed Alternative would continue the existing safety plan in use at Lake Mendocino. The updated Resource Plan recommends augmenting the existing signage around the lake to increase visitor exposure to safety information with regard to water safety and awareness of wild land dangers such as poison oak, rattlesnakes, and large predators. These measures could have a beneficial effect on visitor safety at the lake.

4.14. Effects on Cultural Resources. Any adverse effects on cultural resources that are listed or eligible for listing in the NRHP are considered to be significant. Cultural resources listed or eligible for listing in the NRHP are considered "historic properties" and must undergo particular evaluation of effects in order to determine if an undertaking, pursuant to 36 CFR 800.16 (y), is adverse. An undertaking would be considered to have an adverse effect on historic properties if it diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Types of effects include:

- Physical destruction, damage, or alteration of all or part of the historic property;
- Isolation of the historic property from or alteration of the character of the historic property's setting when that character contributes to the historic property's qualifications for the NRHP;
- Introduction of visual, audible, or atmospheric elements that are out of the character with the historic property or alter setting;
- Neglect of a historic property, resulting in its deterioration or destruction; and,

  Transfer, lease, or sale of the historic property.

Cultural Resources within the Lake Mendocino property are afforded protection under three main laws: *Archaeological Resources Protection Act of 1979 (ARPA)*, the *National Historic Preservation Act of 1966 (NHPA), and the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)*.

ARPA sets forth a process for permitting the excavation or collection of archaeological resources on public or Indian lands and establishes criminal penalties, including fines and incarceration, for the unauthorized excavation or collection of such resources.

Section 106 of the NHPA requires federal agencies to consider impacts to significant cultural resources (historic properties) incurred in the course of undertakings funded or permitted by the government. This requires federal agencies to identify and evaluate cultural resources for significance; to consult with the State Historic Preservation Officer, Native Americans, and the public; and to provide mitigation for any adverse effects their projects might have on significant resources.

NAGPRA requires federal agencies and institutions that receive federal funding to return Native American "cultural items" to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony. The act also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items on federal or tribal lands. Moreover, the act makes it a criminal offense to traffic in Native American human remains without right of possession or in Native American cultural items obtained in violation of the Act.

Any adverse effects on cultural resources that are listed or eligible for listing in the NRHP (i.e., historic properties) are considered to be significant. Effects are considered to be adverse if they alter, directly or indirectly, any of the characteristics of a cultural resource that qualify that resource for the NRHP so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished.

Land use classification changes are a type of undertaking with the potential to effect historic properties. Due to the potential for land use classification changes to occur as a result of the implementation of the revised Master Plan, potential effects to historic properties must be taken into consideration and consultation with the State Historic Preservation Officer and interested Native American Tribes must take place in order to determine whether or not the proposed Master Plan Revision would have an effect on cultural resources.

4.15. Probable Adverse Effects Which Cannot Be Avoided. Implementation of the Preferred Alternative should not result in unavoidable adverse impacts to any of the resources analyzed in this EA. The Resource Objectives and direction on agency coordination would help the District avoid, offset, and mitigate for any unforeseen impacts. Any anticipated impact is considered minor and localized and would not have significant long-term adverse impacts to project resources.

4.16. Relationship Between Short-Term Use and Long-Term Productivity. The Master Plan is a land use planning document which will benefit productivity of Lake Mendocino lands and waters in the long term. While any future maintenance and construction activities may temporarily disrupt wildlife and human use in project areas, negative long-term impacts are expected to be minimal or non-existent on all ecosystems associated with this Master Plan.

4.17. Irreversible or Irretrievable Commitment of Resources if the Project Is Implemented. The commitment of man-hours required to write, coordinate and review the proposed Master Plan are irretrievable. Other than the aforementioned, none of the proposed actions are considered irreversible.

4.18. Relationship of the Proposed Project to Land-Use Plans. Implementation of the Master Plan is a proposed land-use planning change. The Land-Use changes, which the Corps refers to as Land Classifications, are being changed to reflect current conditions and meet current regulations.

The Master Plan is consistent with other State and regional goals and programs. If implemented, the District does not expect the Agency-Preferred Plan to alter or conflict with other authorized civil works projects.

4.19. Indirect and Cumulative Impacts of the Preferred Alternative. The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision-making process for Federal projects. Cumulative impacts are defined as impacts which result when the impact of the Preferred Alternative is added to the impacts of other present and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). The cumulative impacts associated with the Preferred Alternative and the No Action Alternative are described below.

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around Lake Mendocino. Past actions include the construction and operation of the reservoir, the recreation sites surrounding the reservoir, as well as residential, commercial, and industrial facilities throughout the region. All of these developments have had varying levels of adverse impacts on the physical and natural resources in the region. Many of these developments, however, have had beneficial impacts on the region's socioeconomic resources. In addition, many of the historic impacts have been offset throughout the years by the resource stewardship efforts of the District, California Department of Fish and Wildlife, Sonoma Water and other management partners.

The most significant past action was the construction and development of the Lake Mendocino Reservoir. This change created new natural and physical conditions, which, through careful management by the District, and other management partners, have created new and successful habitats and other natural resource conditions. The District and the other management partners have also brought a wide variety of high-quality recreational opportunities to the reservoir.

Existing and future actions also contribute to the cumulative impacts in and around the reservoir. Existing and future actions include the operation of project facilities, and upgrades and maintenance of recreation sites. Continued project operations would result in the sustained maintenance and development of recreational facilities. These facilities would enhance the recreational offerings made by the District and other management partners. Such improvements would result in varying levels of impacts to the surrounding resources. Similarly, surrounding residential, commercial, and industrial development could result in varying levels of adverse impacts to many resources. Within the project boundary, adverse impacts would be offset through resource stewardship efforts. The programmatic approach to project management, included in this EA and attached Master Plan, would allow for future development plans and mitigation responses to be adapted to address any adverse actions. This would allow the District and other management partners at Lake Mendocino to continue to reduce the contribution of its activities to regional cumulative impacts through proactive actions and adaptive resource management strategies.

The Preferred Alternative would contribute minor increments to the overall impacts that past, present, and future projects have on the region, mainly through the implementation of the Land Classifications and Resource Objectives outlined in the proposed Master Plan.

4.1. Compliance With Environmental Quality Statutes. See table EA-8.

Table EA-8. Compliance with Environmental Protection Statutes and Other Environmental Requirements

Federal Policies	Compliance[1]
Archaeological and Historic Preservation Act, 16 U.S.C. 469, et seq.	Full compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	Full compliance
Clean Water Act, 33 U.S.C. 1857h-7, et seq.	Full compliance
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full compliance
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.	Full compliance
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq.	Not applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full compliance
National Historic Preservation Act, 16 U.S.C. 470a, et seq.	Partial compliance
River and Harbors Act, 33 U.S.C. 403, et seq.	Full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Not applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.	Full compliance
Flood Plain Management (EO11988)	Full compliance
Protection of Wetlands (EO11990)	Full compliance
Farmland Protection Act	Full compliance
Corps of Engineers Planning Guidance Handbook (ER 1105-2-100)	Full compliance
EO13112 Invasive Species	Full compliance

[1]Full compliance - Having met all requirements of the statute for the current stage of planning. Not applicable - No requirements for the statute apply.

5.0. COORDINATION AND PUBLIC INVOLVEMENT

5.1 Scoping and Significant Issues.

In 2017, the USACE began the process of revising the Lake Mendocino Master Plan, which was last approved in 1977. On February 21, 2018, a public meeting was held to kick off the master planning process. The purpose of this meeting was to seek public input regarding (1) the long-range goals for the Lake Mendocino Master Plan Revision and (2) the management and development of project lands and water. Additional coordination with Tribal and other agency representatives was done during the planning process.

Issues/Concerns That Arose During Agency and Public Scoping

- Keep campgrounds open for public use and add a store for campers to use.
- Build longer boat ramps to allow lake access during lower water level conditions and re-institute boat ramp fees, which will provide additional revenue for maintenance of the Lake.
- Add a paved walking trail and exercise stations/outdoor gym around the lake.
- Import sand to build a better beach at Pomo B and Oak Grove Day Use Areas.
- Add signage for trails.
- Have boat, kayak, canoe, and stand-up paddleboard rentals at the north side of the lake.
- Continue to allow horseback riding as there are limited public lands open for horseback riding in Mendocino County. Keep Bushay Campground open to horses and add dedicated horse trailer parking spots.
- Make campsites dog friendly and add a fenced off-leash dog park.

- Public use areas are not well maintained by USACE and there is limited staffing at the Lake.
- The release of water from Coyote Valley Dam creates a foul odor that impacts nearby residents. USACE should provide residents with a schedule for releases, and air quality testing would be useful.
- Need consistent law enforcement, including speed control for cars. Additional signage may help prevent speeding and entrance fees might reduce dumping, drug use, and other illegal activities.
- Need rangers or Sheriffs patrolling the Lake in boats and patrolling the area at night. The crime and drug problems have increased significantly over the past 15 years.
- There is a large homeless problem, with many homeless people choosing to stay in campgrounds at Lake Mendocino. Recommend designating a free camping area for the homeless.
- Do not let the public land surrounding Lake Mendocino be privately developed.
- Clear out brush to reduce the tick problem.
- A functioning and proper warning system for the dam needs to become a high priority for the protection of the community.
- Mendocino and Sonoma Counties are urging the District to partner with them on a program to prevent the quagga mussel from being introduced to the lakes by watercraft.
- Projects such as expanding campgrounds, roads, boat launches and septic systems should consider the current proposal to raise the dam.
- Serious consideration should be given to "fixing" the spillway.
- Lack of resources to manage the lake are negatively impacting the user experience. Usership is down to the point that it is negatively affecting the local economy that depends on their visits.
- Passive, non-motorized use should be prioritized.
- Trails should continue as exclusively passive (non-motorized).
- All efforts to budget staff time to support the maintenance and development of trails should be pursued.
- "quiet days" should be established with trolling motors only during the winter months and select "quiet days" two to three days a week year round.
- Establish Ranger patrols of the lake with citations issued for boater speeding and loud stereos.
- Lake Mendocino has a number of redundant roads that should be decommisioned or converted to trails.
- Establish a "trail around the lake" through closing trail gaps on the north and north east sides of the lake.
- Continue practice of having a specific ranger act as liaison with groups like the Ukiah Valley Trail Group and establish a protocol to ensure a seamless transition when new staff assignments are made.
- Expedite approval of trail projects with a specific goal for making decisions.

The list is not in order of importance. The list is also not exhaustive, but focuses on the issues that were mentioned the most during scoping and/or were specifically addressed in the Master Plan and this EA.

The master planning team used its experience and expertise to work through the issues that arose during public scoping and discussions with Lake Mendocino staff. Responses from the public were received

and taken into consideration when considering management options. The USACE invited comments on this decision-making process from several Federal and State agencies as well. The USACE will endeavor to balance the needs of all user groups to the greatest extent possible within the constraints of the primary missions of flood risk management, recreation, and contractual agreements for water supply. The proposed solutions to issues and concerns are covered more extensively in the Master Plan.

The Draft Master Plan and Environmental Assessment will be provided to the public and resource agencies for review and comment. A 30-day review period is planned for spring 2019. Additional public meetings will be held prior to the end of this comment period to explain and present the draft documents. All comments will be considered and the documents will be revised accordingly as appropriate prior to finalization.

6.0. LIST OF PREPARERS

District Personnel	Area of Expertise
Chris Schooley	Operations Project Manager
Eric Jolliffe	NEPA Documentation
Margaret Engesser	Master Planning
Wyndell Merritt	Master Planning
Kathleen Ungvarsky	Cultural Resources
Stefanie Adams	Cultural Resources
Rachael Marzion	GIS

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APPENDIX EA1

USFWS SPECIES LIST

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mendocino County, California

Local office

Arcata Fish And Wildlife Office

(707) 822-7201
(707) 822-8411

1655 Heindon Road
Arcata, CA 95521-4573

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Marbled Murrelet Brachyramphus marmoratus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl Strix occidentalis caurina There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover Charadrius alexandrinus nivosus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Flowering Plants

NAME	STATUS
Burke's Goldfields Lasthenia burkei No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4338	Endangered

Contra Costa Goldfields Lasthenia conjugens There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7058	Endangered
Showy Indian Clover Trifolium amoenum No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Ashy Storm-petrel Oceanodroma homochroa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7237	Breeds May 1 to Jan 15

Bald Eagle Haliaeetus leucocephalus — **Breeds Jan 1 to Aug 31**
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black Oystercatcher Haematopus bachmani — **Breeds Apr 15 to Oct 31**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Skimmer Rynchops niger — **Breeds May 20 to Sep 15**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Swift Cypseloides niger — **Breeds Jun 15 to Sep 10**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Turnstone Arenaria melanocephala — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — **Breeds Apr 20 to Sep 30**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — **Breeds elsewhere**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — **Breeds elsewhere**
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
White Headed Woodpecker Picoides albolarvatus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

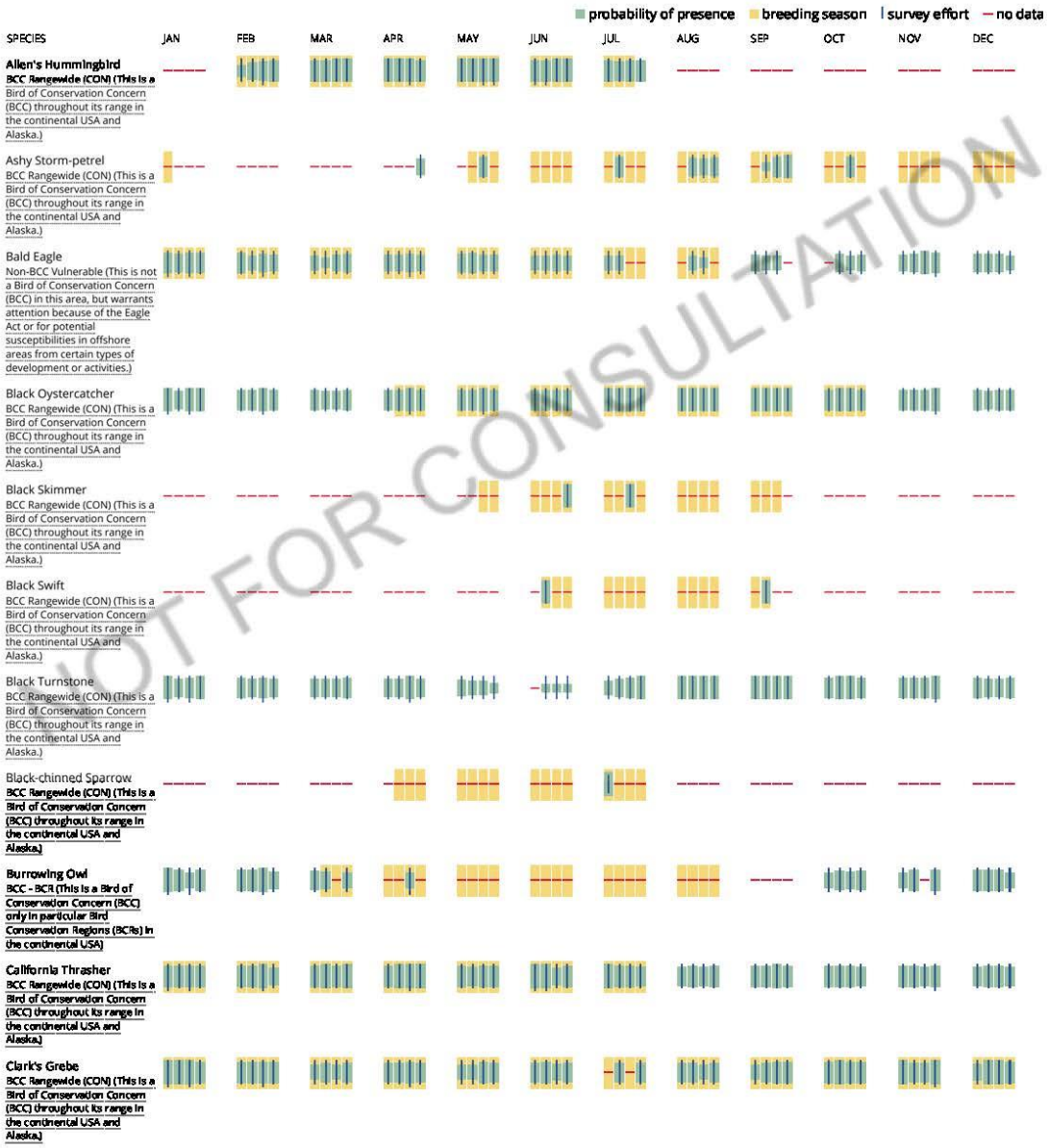
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

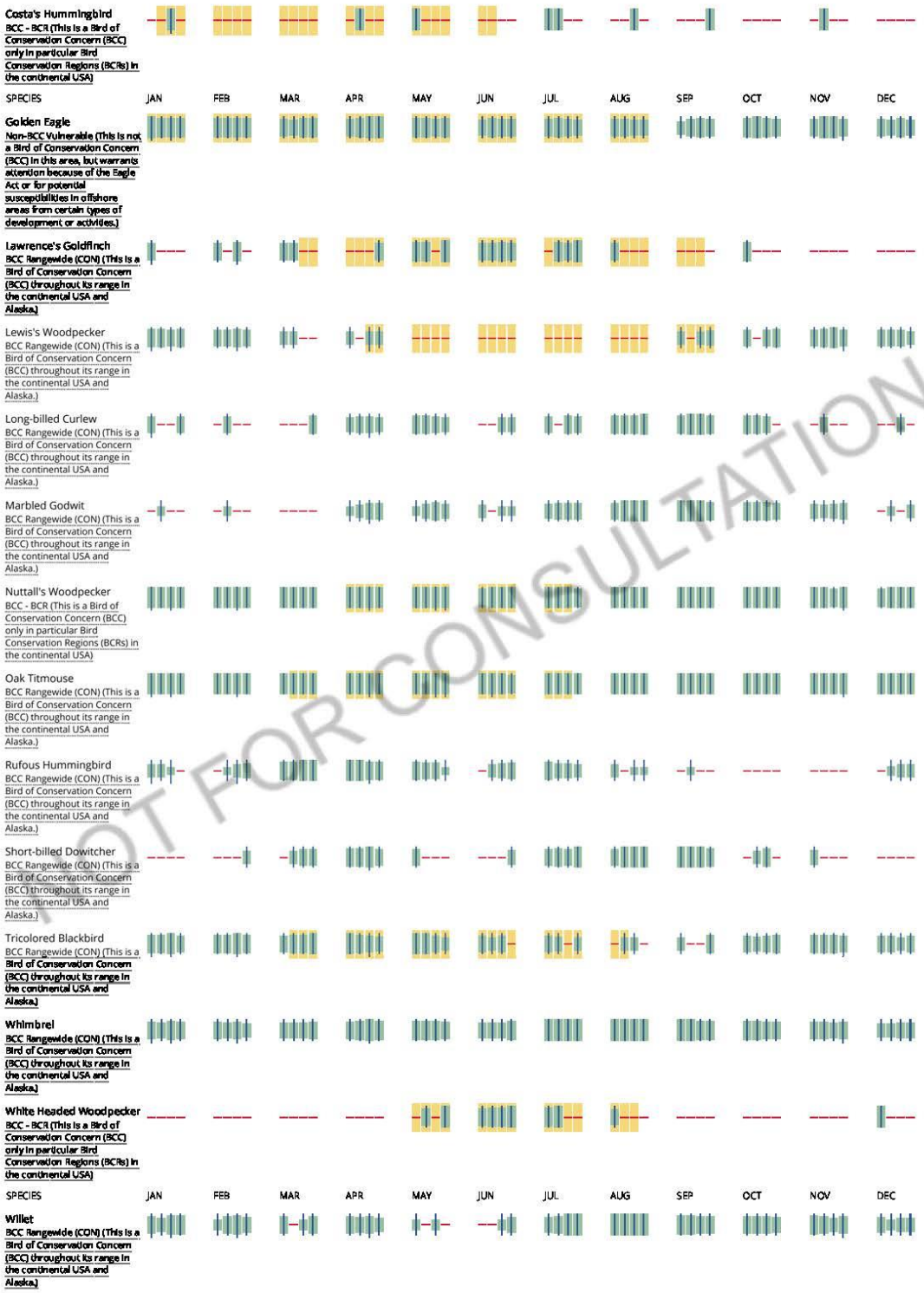
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

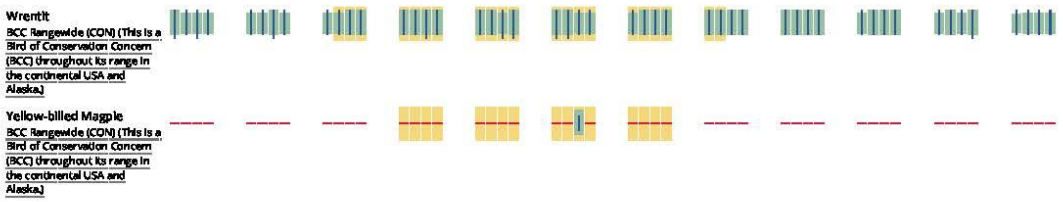
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location overlaps the following wetlands:

FRESHWATER POND
- PUSK

LAKE
- L1UBK
- L2USK
- L2USKx

RIVERINE
- R3USC

A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX EA-2

DRAFT FINDING OF NO SIGNIFICANT IMPACT

DRAFT FINDING OF NO SIGNIFICANT IMPACT

LAKE MENDOCINO MASTER PLAN
MENDOCINO COUNTY, CALIFORNIA

The U.S. Army Corps of Engineers, San Francisco District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The final Master Plan and Environmental Assessment (MP/EA) dated **(date to be added when finalized)**, for Lake Mendocino addresses updates to the existing master plan in Mendocino County, California.

The Final MP/EA, incorporated herein by reference, evaluated an action alternative that updates the land use classification system used in the master plan and make recommendations for future improvements to Lake Mendocino's facilities based on the updated land use classifications. The recommended plan is the proposed action, which includes:

- Adoption and implementation of the revised Lake Mendocino Master Plan. The proposed plan revises the 1977 plan currently in use by updating the land use classification system to be compliant with the master planning guidance in ER-1130-2-550.
- Updating existing inventories, management objectives, and development needs in light of the updated land use classification to provide a programmatic approach to the future management of Lake Mendocino.

In addition to a "no action" plan, one alternative (the proposed action) was evaluated. The alternative development process included the input of resource agencies, the public, local tribes and Lake Staff to update the management objectives and identify development needs for managing Lake Mendocino in the future.

For both alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Recreation and Aesthetics	☒	☐	☐
Air quality	☐	☐	☒
Aquatic resources/wetlands	☐	☐	☒
Invasive species	☒	☐	☐
Fish and wildlife habitat	☒	☐	☐
Threatened/Endangered species/critical habitat	☐	☐	☒
Historic properties	☐	☐	☒
Other cultural resources	☐	☐	☒
Floodplains	☐	☐	☒
Hazardous, toxic & radioactive waste	☐	☐	☒
Hydrology	☐	☐	☒
Land use	☐	☐	☒
Navigation	☐	☐	☒
Noise levels	☐	☐	☒
Public infrastructure	☐	☐	☒
Socio-economics	☐	☐	☒
Environmental justice	☐	☐	☒
Geology, Topography, Soils	☐	☐	☒
Tribal trust resources	☐	☐	☒
Water quality	☐	☐	☒
Climate change	☐	☐	☒
Transportation	☐	☐	☒
Safety	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan.

No compensatory mitigation is required as part of the recommended plan.

Public review of the draft MP/EA and FONSI was completed on **(date review period ended to be added)**. All comments submitted during the public review period were responded to in the Final MP/EA and FONSI. A 30-day state and agency review of the MP/EA was completed on **(date review period ended to be added)**

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the Corps of Engineers determined that the recommended plan will have no effect on federally listed species or their designated critical habitat.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties would not be adversely affected by the recommended plan. The SHPO concurred with the determination on **(Date of concurrence letter to be added)**.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____
Date

_____
Travis J. Rayfield
LTC, EN, Corps of Engineers
District Commander

Appendix C. South Boat Ramp Parking Lot Proposal

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LAKE MENDOCINO SOUTH RAMP BOAT LAUNCHING FACILITY FEASIBILITY REPORT

Existing Parking Area

Inundated Parking Area

United States Army Corps of Engineers
$1,400,000 Grant

SUMMARY

The Boating and Waterways Commission is being asked to consider a $1,400,000 (Harbors and Watercraft Revolving Fund) Boat Launching Facility (BLF) planning, design, and construction grant to the United States Army Corps of Engineers (Corps) to construct a new parking area that will provide 63 additional parking spaces for the Lake Mendocino South Ramp BLF.

Staff recommends that the Boating and Waterways Commission consent to the $1,400,000 Harbors and Watercraft Revolving Fund BLF planning, design, and construction grant ***with conditions*** to the United States Army Corps of Engineers for the project described in this March, 20, 2013 feasibility report.

GRANT APPLICANT AND PREVIOUS COMMISSION ACTION

Grant Applicant

The grant applicant for this project is the United States Army Corps of Engineers which owns and operates the Lake Mendocino South BLF.

Commission Site Visit

On Wednesday, February 13, 2013, Commissioner Banuelos of the California Boating and Waterways Commission visited the Lake Mendocino South BLF. The tour was hosted by Joshua Burkhead, Ranger; Carlos Hernandez, Civil Engineer; David Serafini, Maintenance Supervisor; and Marvin Horton, Mechanical Engineer. A DBW manager also participated in the site visit.

Previous Commission Action

Since 1973, the Boating and Waterways Commission has approved grants totaling $638,000 for the Lake Mendocino BLF's.

In FY 1973/74 the Commission approved a $150,000 grant to improve Lake Mendocino's North and South BLF's.

In FY 1990/91 the Commission approved a $338,000 grant to add another boat launching lane and construct restrooms at the North BLF.

In FY2010/11 the Commission approved a $200,000 grant to replace boarding floats at both the North and South BLF's. These boarding floats are scheduled to be installed by June 1, 2013.

GENERAL LOCATION AND AREA

Location

Lake Mendocino is located approximately five miles northeast of Ukiah, California in the middle of Mendocino County. From Ukiah, travel north on U.S. Highway 101, take the Lake Mendocino Drive exit and turn right on West Lake Mendocino Drive. Turn left at the stop light on North State Street, then turn right at the next stop light onto Lake Mendocino Drive which ends at the South BLF.

Area

Lake Mendocino is two hours north of the San Francisco Bay Area near the Gateway to the Redwoods. Approximately 30 miles from the Pacific Ocean, the topography is mountainous with dense vegetation. The closest alternate public boat launching facility to Lake Mendocino is over 30 miles away at Clear Lake.

History

In 1958, the Coyote Valley Dam, along the East Fork of the Russian River, was completed. The dam stopped the Russian River, flooding the Coyote Valley, creating Lake Mendocino. The Lake and Dam provide flood control, water conservation, hydroelectric power, and recreational facilities.

Uses

Lake Mendocino is a heavily used and very popular recreational area. Annual visitation is over 500,000, mainly from San Francisco, Marin, Sonoma, Mendocino, and Lake Counties. The Lake has many amenities including: day use areas, over 300 campsites (including several boat-in locations), disc golf, hiking, water-skiing, kayaking, sailing, jet-skiing, windsurfing, fishing, and swimming. The South Ramp BLF is one of two BLF's on Lake Mendocino.

Existing Conditions

The existing South BLF was originally constructed in the 1970's, and includes a three-lane boat launching ramp, boarding float, restroom, and parking area. The parking area was constructed lower in elevation than the top of the boat launching ramp.

In 2010, as a result of increased water demands, the Sonoma County Water Agency chose to raise the normal pool elevation of the Lake. This has caused inundation of the parking area each year during the summer recreation season as well as during high rain and water run-off events during the winter.

During these high water events, the Corps is forced to close the South BLF, leaving the North BLF the only public access to the Lake. Due to the Lakes popularity, the North BLF has experienced overuse and the high quantity of boats at the single location has led to unsafe conditions for boat launching and retrieval.

Lake Mendocino South BLF *(source: Google Earth)*

PROJECT DESCRIPTION

Scope

The project proposed for Commission consent is itemized below. A preliminary site plan is included on page 7 of this report.

Parking Area Construction Excavation, grading, and drainage to create parking areas for 48 vehicle-trailer parking spaces (including 3 accessible) and 10 single-vehicle spaces (including 2 accessible), application of asphalt base to the new proposed parking area, and paving and striping as funding allows.

Overhead Utilities Underground existing overhead power and dry utility lines as necessary.

Accessible Walkways and Curbing Construct accessible walkways from the accessible parking spaces to the top of the existing launch ramp and restroom.

Restroom Code Upgrade Improve the existing restroom to meet current accessibility and building code requirements.

Signage Add new parking area signage, including a concrete project credit sign giving credit to the Department of Boating and Waterways for funding the project and the United States Army Corps of Engineers for operating and maintaining the facility.

Cost Estimate

The total estimated project construction cost as currently proposed is $1,400,000. The design and construction of this project will be fully funded through this proposed DBW grant. See Table 1 for the project cost estimate. This estimate includes a construction contingency of 10% for any unforeseen overages that may occur during the construction process affecting the Commission approved scope items noted above.

Table 1: Lake Mendocino BLF Project Cost Estimate		
CONSTRUCTION COSTS		
Mobilization / Demobilization	$	37,625
Demolition		119,925
Parking Area Construction		813,500
Overhead Utilities		62,500
Accessible Walkways and Curbing		3,875
Restroom Code Upgrades		15,000
Signage		8,000
Construction Subtotal	**$**	**1,060,425**
NON-CONSTRUCTION COSTS		
Escalation 5%	$	53,260
Engineering 12%		127,251
Contingency 10%		106,043
Inspection 5%		53,021
Permits 3%		-
Non-Construction Subtotal	**$**	**339,575**
TOTAL ESTIMATED PROJECT COSTS	**$**	**1,400,000**

Project Status

A preliminary site plan and cost estimate have been prepared.

Timeline

If approved, the Corps estimates construction will be complete by May 1, 2015.

Engineering Feasibility

There are no particularly difficult or unusual problems associated with the proposed project.

Environmental Impact and Permits

A NEPA (National Environmental Policy Act) or CEQA (California Environmental Quality Act) document has not been completed. The Corps believes the project may also require an EIR. If so, it estimates completion within six months of approval of this grant request. Per the Corps, construction it does on its own Federal land will not require acquisition of permits. DBW grant funds are not eligible for reimbursement of costs associated with completion of CEQA/NEPA or EIR requirements.

Staff recommends that project approval be contingent on the Corps' completion of all necessary environmental requirements EIR/CEQA/NEPA by May 1, 2014 and that no funds be advanced to the Corps until this requirement is met.

PROJECT METRICS

Annual Launches

Current. Based on the Corps' estimates, there are currently 5,172 launches a year at the South BLF.

Future. The Corps estimates that the annual number of boat launchings at the improved facility will be approximately 6,200 an increase of 20 percent.

Annual User Days

Current. Based on the California Boating Needs Assessment study published in 2002, the Lake Mendocino average for number of users per boat is 3.87, therefore the current estimated annual number of user days is approximately 20,000 (current annual launches * user per boat).

Future. DBW estimates that the annual user days for this facility this will increase by 20 percent to approximately 24,000 annual user days.

User Day Value

Current. The Boating Needs Assessment Study estimated a base user day value. This value, adjusted for CPI is currently $23.83 per user. The total current annual user day value for this facility is approximately $477,000 (user day value * annual user days).

Future. DBW estimates that the total annual user day value will increase after the improvements are constructed by $95,000, or 20 percent, to $572,000 ($23.34 * annual user days).

Benefit-Cost Ratio

A common method in the analysis of investments is to establish net present value of the benefits and costs associated with a project. If the Benefit/Cost ratio exceeds "1" then the investment, weighed against available investment alternatives, is worthy of consideration from a financial perspective. The results of this analysis are as follows:

Benefit. The Net Present Value of the total annual user day value for the 20 year agreement period is estimated to be $1,669,000 million.

Cost. Total project grant amount proposed is $1,400,000. The current annual facility cost is $17,000, and the projected cost is $20,200. The Net Present Value of the grant and the accumulated annual difference in facility cost between making the improvement versus not making the improvement is $1,476,000.

Ratio. The Benefit-Cost Ratio is 1.13.

User Fees. There is a $3.00 boat launching fee.

CONCLUSION

The Department's analysis indicates that this project, as proposed, makes needed improvements, is feasible from an engineering perspective, is cost effective, and increases public access.

RECOMMENDATION

Staff recommends that the Boating and Waterways Commission consent to a $1,400,000 (Harbors and Watercraft Revolving Fund) planning, design, and construction grant ***with conditions*** to the United States Army Corps of Engineers for improvements *described in this March 20, 2013 Feasibility Report*.

Conditions:

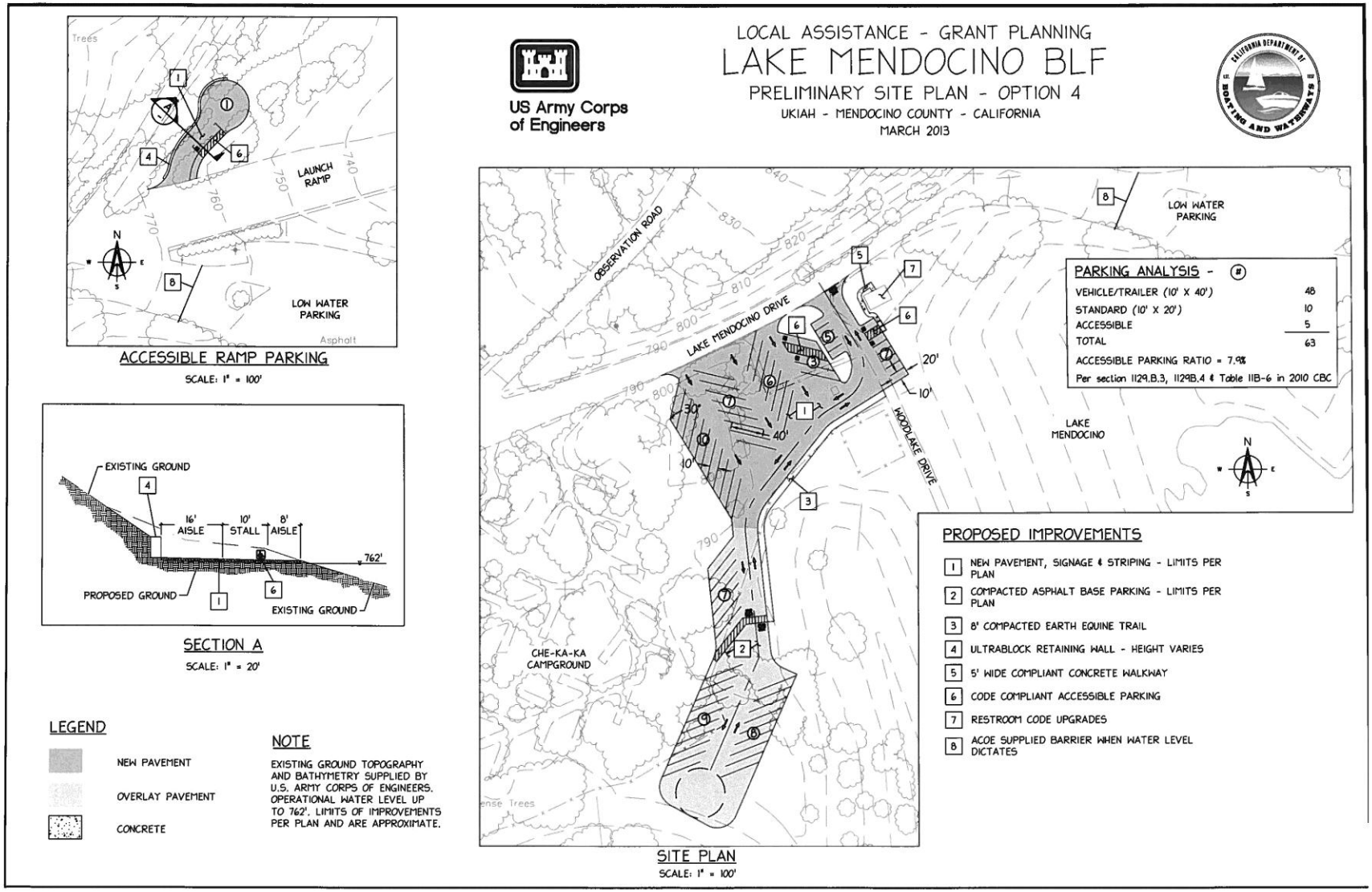
Prior to disbursement of any grant funds, the Corps must complete CEQA/NEPA.

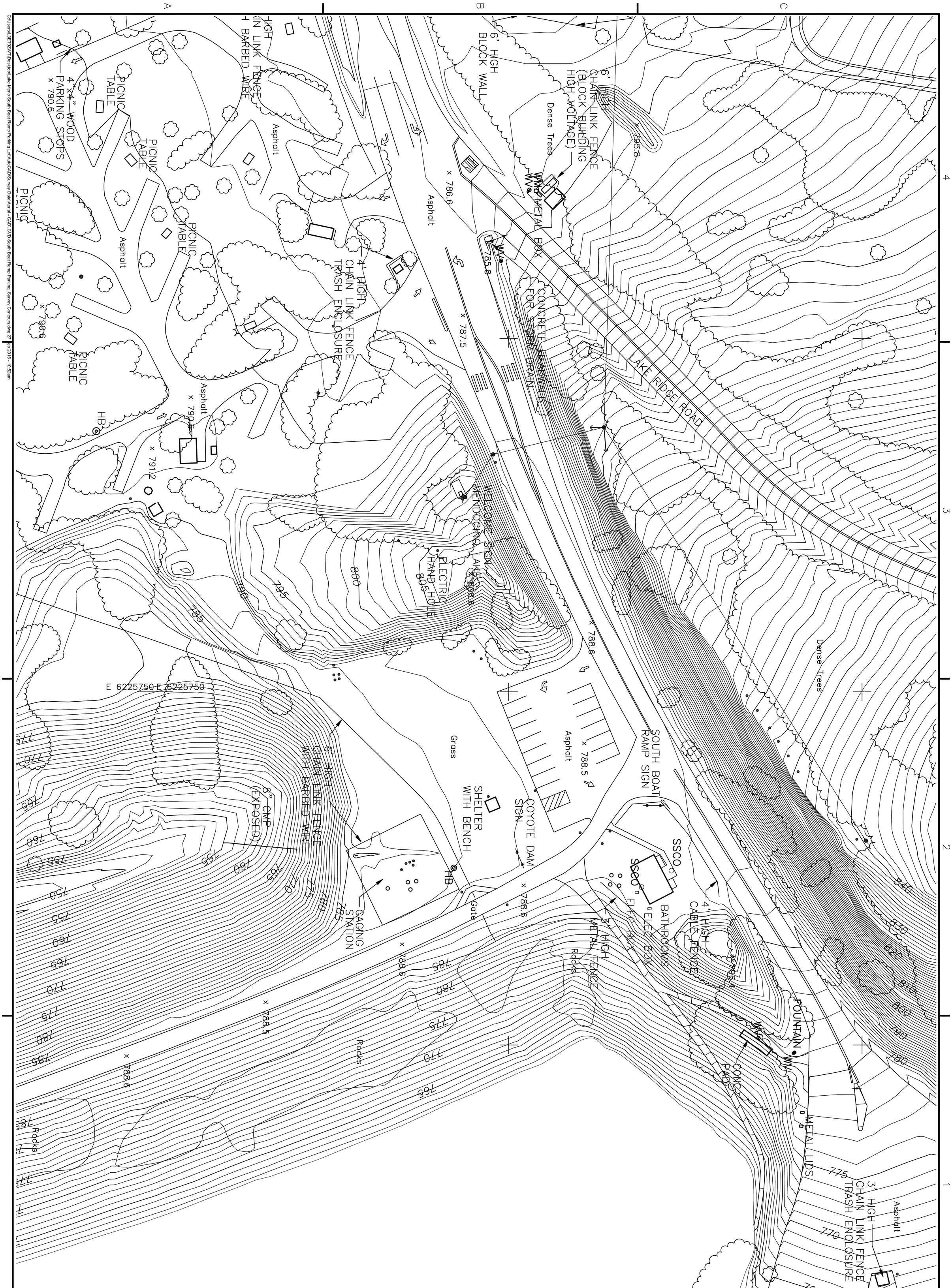
Prior to disbursement of any grant funds, the Corps must complete the DBW grant project funded in FY2010/11 and receive acceptance of the project as complete by DBW.

If the above conditions are not met by May 1, 2014, funds for this project shall revert to the Harbors and Watercraft Revolving Fund.

PROPOSED MOTION

The Commission approves the $1.4 million grant with conditions to the United States Army Corps of Engineers for the *proposed project described in this March 20, 2013 Feasibility Report.*


LOCAL ASSISTANCE - GRANT PLANNING
LAKE MENDOCINO BLF
PRELIMINARY SITE PLAN - OPTION 4
UKIAH - MENDOCINO COUNTY - CALIFORNIA
MARCH 2013
US Army Corps of Engineers
ACCESSIBLE RAMP PARKING
SCALE: 1" = 100'
LAUNCH RAMP
LOW WATER PARKING
Asphalt
SECTION A
SCALE: 1" = 20'
EXISTING GROUND
16' AISLE
10' STALL
8' AISLE
762'
PROPOSED GROUND
SITE PLAN
SCALE: 1" = 100'
OBSERVATION ROAD
LAKE MENDOCINO DRIVE
HOOPLAKE DRIVE
CHE-KA-KA CAMPGROUND
LAKE MENDOCINO
PARKING ANALYSIS - (#)
VEHICLE/TRAILER (10' X 40') 48
STANDARD (10' X 20') 10
ACCESSIBLE 5
TOTAL 63
ACCESSIBLE PARKING RATIO = 7.9%
Per section 1129.B.3, 1129B.4 & Table 11B-6 in 2010 CBC
PROPOSED IMPROVEMENTS
1 NEW PAVEMENT, SIGNAGE & STRIPING - LIMITS PER PLAN
2 COMPACTED ASPHALT BASE PARKING - LIMITS PER PLAN
3 8' COMPACTED EARTH EQUINE TRAIL
4 ULTRABLOCK RETAINING WALL - HEIGHT VARIES
5 5' WIDE COMPLIANT CONCRETE WALKWAY
6 CODE COMPLIANT ACCESSIBLE PARKING
7 RESTROOM CODE UPGRADES
8 ACOE SUPPLIED BARRIER WHEN WATER LEVEL DICTATES
LEGEND
NEW PAVEMENT
OVERLAY PAVEMENT
CONCRETE
NOTE
EXISTING GROUND TOPOGRAPHY AND BATHYMETRY SUPPLIED BY U.S. ARMY CORPS OF ENGINEERS. OPERATIONAL WATER LEVEL UP TO 762'. LIMITS OF IMPROVEMENTS PER PLAN AND ARE APPROXIMATE.



Sheet reference number

MENDOCINO COUNTY CALIFORNIA

CVD SOUTH BOAT RAMP PARKING
LAKE MENDOCINO, CA

SUBMITTED:
ZAK TALBOTT
707-431-4556

Chief, Operations Technical Support Office
APPROVAL RECOMMENDED:
CARLOS R. HERNANDEZ, P.E.
707.431.4550;
carlos.r.hernandez@usace.army.mil

Chief, Engineering Branch
APPROVED:
MICHAEL A. DILLABOUGH
415-503-6770

DESIGNED BY:	CHECKED BY:	DRAWN BY:	
DATE:	SHEET NO.	DRAWING NO.	
PHOTOGRAMMETRY SUMMER 2010	OF		XXX

PREPARED UNDER THE DIRECTION OF
JOHN MORROW
LT. COLONEL, U.S.A.C.E., DISTRICT COMMANDER

Mark	Description	Date	Appr.

USACE DESIGN

US Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, CA 94103

C:\Users\L3ET92WT\Desktop\Lake Mendo South Boat Ramp Parking Lot\AutoCAD\Survey Data\Aerial - CAD\ CVD South Boat Ramp Parking_Survey Contours.dwg 27 Feb 2015 - 10:52am

US Army Corps of Engineers

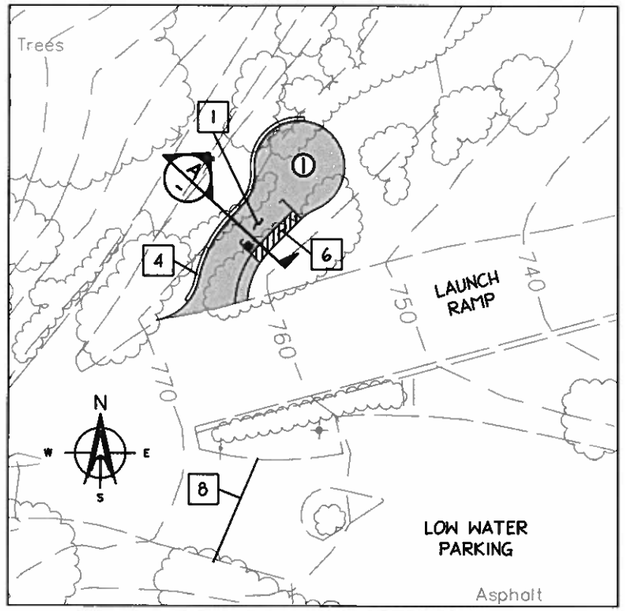
LOCAL ASSISTANCE - GRANT PLANNING

LAKE MENDOCINO BLF

PRELIMINARY SITE PLAN - OPTION 4

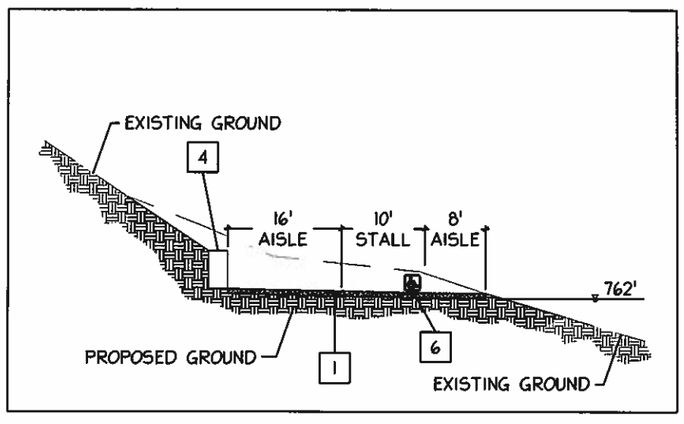
UKIAH - MENDOCINO COUNTY - CALIFORNIA

MARCH 2013



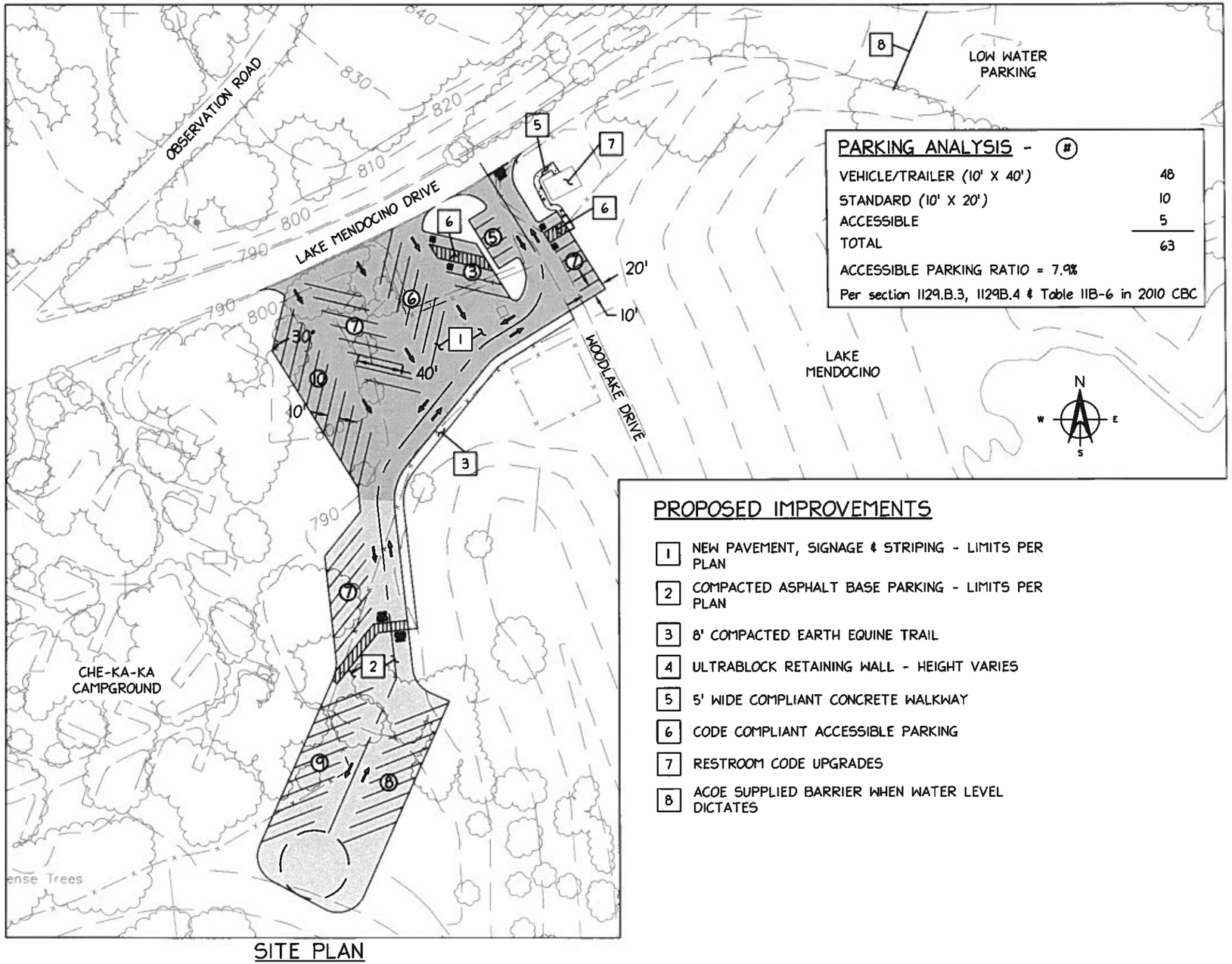
ACCESSIBLE RAMP PARKING

SCALE: 1" = 100'



SECTION A

SCALE: 1" = 20'



SITE PLAN

SCALE: 1" = 100'

PARKING ANALYSIS - (#)

VEHICLE/TRAILER (10' X 40')	48
STANDARD (10' X 20')	10
ACCESSIBLE	5
TOTAL	63

ACCESSIBLE PARKING RATIO = 7.9%

Per section 1129.B.3, 1129B.4 & Table 11B-6 in 2010 CBC

PROPOSED IMPROVEMENTS

1. NEW PAVEMENT, SIGNAGE & STRIPING - LIMITS PER PLAN
2. COMPACTED ASPHALT BASE PARKING - LIMITS PER PLAN
3. 8' COMPACTED EARTH EQUINE TRAIL
4. ULTRABLOCK RETAINING WALL - HEIGHT VARIES
5. 5' WIDE COMPLIANT CONCRETE WALKWAY
6. CODE COMPLIANT ACCESSIBLE PARKING
7. RESTROOM CODE UPGRADES
8. ACOE SUPPLIED BARRIER WHEN WATER LEVEL DICTATES

LEGEND

- NEW PAVEMENT
- OVERLAY PAVEMENT
- CONCRETE

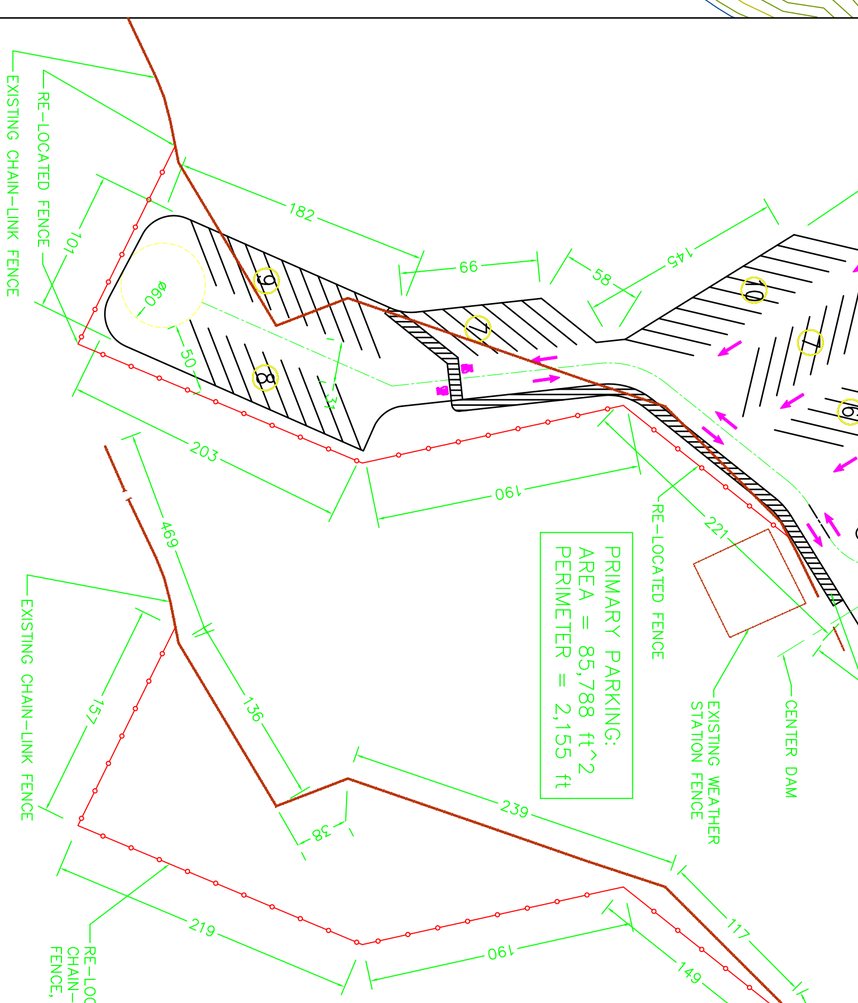
NOTE

EXISTING GROUND TOPOGRAPHY AND BATHYMETRY SUPPLIED BY U.S. ARMY CORPS OF ENGINEERS. OPERATIONAL WATER LEVEL UP TO 762'. LIMITS OF IMPROVEMENTS PER PLAN AND ARE APPROXIMATE.

ELEVATION SECTION A-A
SCALE x 4

AREA = 1250 ft^2; THIS TOPO, CONTOURS @ 2'
@ 150 ft LEN,:: VOL = 1250 * 150 / 27 = 6,900 cy

FROM TOPO-MAP: ELEV 808 TO 791 @ 1' CONTOURS = 181,598 ft^2 * 1 ft / 27 =6,700 cy



ALTERNATIVE TO RAISE EXISTING PARKING LOT

BUDGET COST TO FILL EXISTING LOT ABOVE FLOOD LEVEL

SOIL FILL: 60,000 sf * 8 ft avg / 27 = 18,000 cy

EMBANKMENT SLOPE = 35,000 st * 8 ft / 27 = 10,500 cy

SOIL FILL: $3 LOAD + $8 HAUL + $5 COMPACT = 16 $/cy

RAISE LOT ELEV TO 770 ft: (18,000 cy + 10,500 cy) * 16 $/cy = $456,000

PLANT-MIX ASPHALT PAVING, 3": 15 $/sy
60,000 sf / 9 sf/sy * 15 $/sy = $100,000

BUDGET: $456,000 + $100,000 + $4000 MISC = $560,000

USACE DWG.
CVD S-BOAT PARK1-01
30 MAY 11
PLAN VIEW

MENDOCINO COUNTY CALIFORNIA

CVD SOUTH-BOAT RAMP PARKING SITE LAYOUT & ROAD LAKE MENDOCINO, CA

SUBMITTED:	DESIGNED BY: M.R. HORTON		CHECKED BY: CRH	DRAWN BY: MRH	
Chief, Civil Design Section	DATE:	SHEET NO.	CVD S-BOAT PARK1-01		
APPROVAL RECOMMENDED:	30 MAY 11	1 OF 1	00	0	000
Chief, Engineering Branch	PREPARED UNDER THE DIRECTION OF TORREYA A. DICIRO, P.E.				
APPROVED:	Division LT. COLONEL, C.E., DISTRICT COMMANDER				
Chief, Engineering & Technical Services					

Mark	Description	Date	Appr.
1	PROPOSED TO RAISE EXISTING LOT	12 FEB 13	MRH

USACE DESIGN
BESTORS ENGR.
KEVIN NELSON
CALIFORNIA BOAT & WATERWAYS

US Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, CA 94103

1