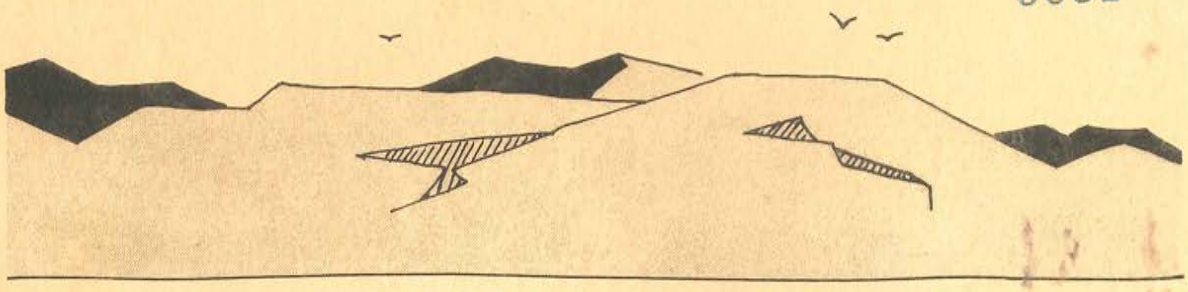
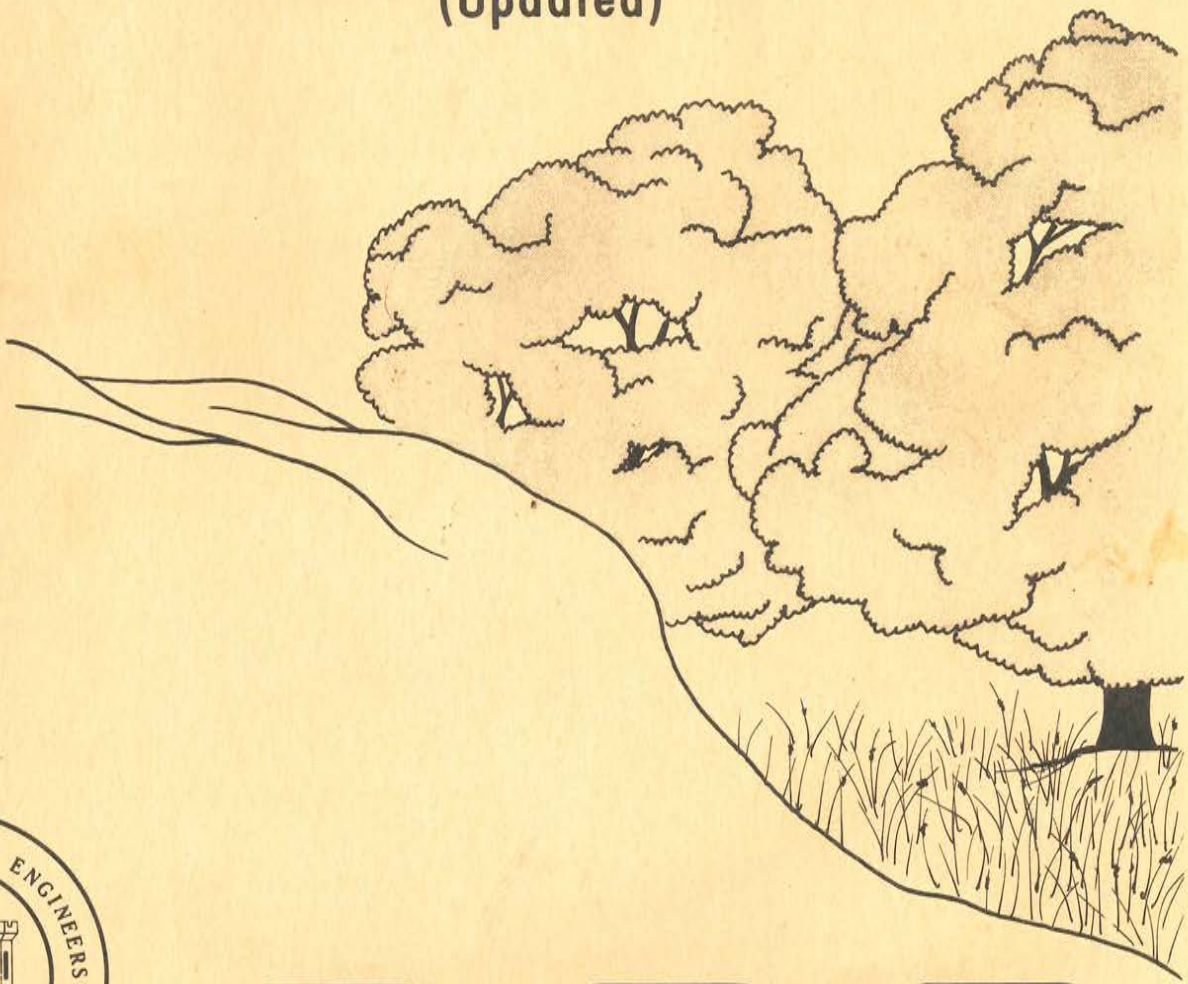


Lake Mendocino

Master Plan

(Updated)



U.S. ARMY CORPS OF ENGINEERS - SAN FRANCISCO DISTRICT

LAKE MENDOCINO MASTER PLAN
(UPDATED)

RUSSIAN RIVER
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA

PREPARED BY
U.S. ARMY ENGINEER DISTRICT, SAN FRANCISCO, CORPS OF ENGINEERS
211 MAIN STREET, SAN FRANCISCO, CALIFORNIA

JANUARY 1977

PREVIOUS REPORTS

Russian River Reservoir
(Coyote Valley)
Mendocino County, California

DESIGN MEMORANDUMS

Design Memorandum	Title	Date Approved
1	Site Selection	26 Jul 54
2	Hydrology and Hydraulics	25 Apr 55
3	Hydro Power Analysis	10 Feb 56
4	General Design Memorandum	23 Dec 55
5	Relocations	20 Dec 55
6	Geology, Soils, Earth Dam Design, and Construction Materials	14 Dec 55
7	Outlets Works and Spillway	9 Feb 56
8	Real Estate	23 Sep 55
9	Administration Facilities	Canceled
10	Reservoir Clearing	19 Oct 56

PREVIOUS REPORTS CONCERNING RECREATIONAL DEVELOPMENT

Report	Date Approved
Master Plan	Mar 59
Supplement A - Part I	Apr 60
Supplement A - Part II	Jul 61
Supplement B - Part I	Dec 62
Supplement B - Part II	Mar 63
Supplement B - Part III	May 65
Supplement B - Part IV	Nov 68

LAKE MENDOCINO
MASTER PLAN
(UPDATED)

RUSSIAN RIVER
MENDOCINO AND SONOMA COUNTIES, CALIFORNIA

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A	Resource Management Plan
B	Forest Management Plan
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D	Fish and Wildlife Management Plan
E	Project Safety Plan
F	Lakeshore Management Plan

PREFACE

Lake Mendocino was constructed for flood control and water conservation. Construction was started in 1956 and completed in 1959. Recreational facilities were added as phased development and undertaken by the Corps of Engineers with assistance from Mendocino County and the State of California over the past 17 years. The Corps of Engineers is responsible for the operation and maintenance of the public use areas. The existing annual visitation to the lake presently exceeds 1,500,000 visitors.

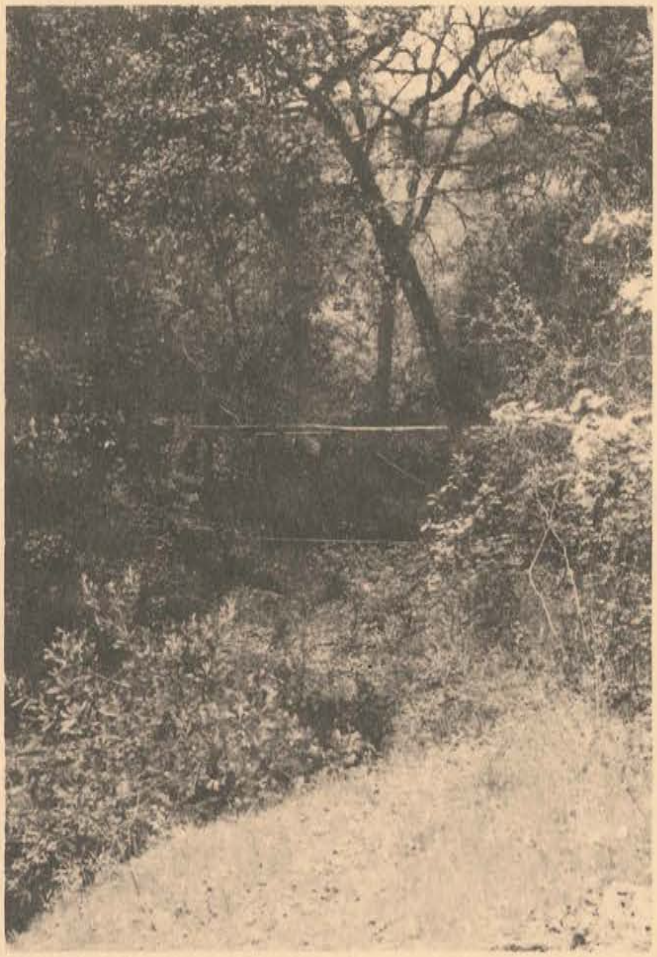
This updated master plan presents an overall view of the existing and proposed recreational development at Lake Mendocino. It also provides guidance for recreational and resource management programs.

SUMMARY

This updated master plan is intended to guide the orderly and coordinated development and management of the land and water resources at Lake Mendocino. It also is intended to serve as a guide for plans of future recreational development and as a guide for public oriented recreational and interpretation management programs. This master plan replaces all previous master plans and supplements.

In planning the overall development of recreational resources, attention has been given to efficient land-use allocations in order to lessen the adverse impacts on the natural environmental resources resulting from intensive recreational use. Attention was also given to maximizing recreational use without adversely affecting the flood control or water conservation uses of the project.

The recreational development at Lake Mendocino meets a limited portion of the recreational needs of the Mendocino and Sonoma Counties, and the San Francisco Bay area. Extensive development to provide facilities for a greater portion of this recreational demand is not proposed since the environmental resources would be endangered with increased visitation. Instead, the emphasis of the future development proposed in this master plan is to increase the quality of the visitor's experience.



Introduction

I - INTRODUCTION

1.01 Project Authorization:

The Lake Mendocino (Coyote Valley) project was authorized by the Flood Control Act of 1950 as part of the initial stage 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 OCE guidance in letter ENGCW-Y, 5 August 1965, subject: Implementation of the Federal Water Project Recreation Act (PL 89-72) in previously authorized projects.

1.02 Purpose and Scope of the Master Plan:

The master plan is intended as a guide for the development and management of all land and water resources of the project area. The existing recreational, ecologic, geologic, topographic and water resources have been reevaluated for the purpose of updating the master plan. A proposed recreational and land use plan, which is based on the best possible use of available resources with respect to recreational demand and the relationship to the flood control and water supply operation of the dam, has been developed.

This master plan summarizes existing facility development and will serve as a guide to recreation and resource management of the total project. The plans for future development will serve as a guide for the preparation of detailed plans. This master plan will be updated every 5 years, or as required, to accommodate changing conditions of the project or changing leisure requirements of the public.

1.03 Application of Public Laws:

The following Federal laws provide for the development and management of Federal projects for various purposes according to the intent of Congress:

a. Public Law 78-534 (the Flood Control Act of 1944), as amended, authorizes the Corps of Engineers to construct, maintain, and operate public park and recreational facilities at water resources development projects and to permit local interests to construct, maintain, and operate such facilities.

b. Public Law 85-624 (the Fish and Wildlife Coordination Act of 1958) requires that any agency impounding, diverting, or controlling water consult with the United States Department of the Interior, Fish and Wildlife Service. The Department of the Interior recommends the means and measures to prevent the damage and to provide concurrently for the development and improvement of such wildlife resources.

c. Public Law 89-72 (the Federal Water Project Recreation Act of 1965), accompanied by House Committee Report 254, requires full consideration to be given to opportunities the project affords for outdoor recreation and for fish and wildlife enhancement. It also provides for non-Federal participation in land acquisition and in the development and management of recreation facilities and fish and wildlife resources.

d. Public Law 91-190 (the National Environmental Policy Act of 1969) requires that the environmental effects of each project and the means and measures to minimize any adverse effects be evaluated and presented in an environmental impact statement. However, in accordance with Corps' policy, as outlined in ER 1105-2-507, an environmental assessment and statement of findings has determined that an environmental impact statement is not required for the additional development at this project.

e. Public Law 93-291 (Historical and Archeological Data Preservation Act), approved 24 May 1974, provides for the preservation of historical and archeological data which might be irreparably lost or destroyed as the result of a Federal construction project or Federally-licensed activity or program.

f. Executive Order 11593 (Protection and Enhancement of the Cultural Environment), issued 13 May 1971, directs Federal agencies to preserve, restore and maintain the historic and cultural resources on lands in Federal ownership.

g. Public Law 93-567 (the Emergency Jobs and Unemployment Assistance Act of 1974) makes funds available through the Department of Commerce, to the Corps of Engineers for implementing a Job Opportunities Program at Lake Mendocino to develop facilities for public use.

1.04 Previous Reports Concerning Recreational Development:

The initial Master Plan for public recreational development was approved in March 1959. The report included a master plan prepared by Mendocino County which was generally adopted as the Corps' plan. The document included provisions for the Corps of Engineers to develop minimum essential public use facilities. These facilities included an access road to the overlook point, a parking area for 40 cars, a waterborne comfort station, a boat ramp with parking facilities near the dam (Che-ka-ka Recreation Area) and a fire access road from Highway 20 to the east portion of the reservoir. The responsibility for development and management of the other recreational facilities shown on that Master Plan was to be assumed by Mendocino County. Due to a failure on the part of the county to comply with the terms of the lease, the lease was terminated and the responsibility for the development of the needed

recreation facilities proposed in the Master Plan was assumed by the Corps of Engineers. Consequently, supplements to the Master Plan were prepared as a basis for preparation of construction plans. Table 1 presents information relative to the Master Plan and supplements. Recreation areas referenced on Table 1 are shown on Plate 5.

1.05 Cost Sharing:

Recreational facilities at Lake Mendocino have primarily been developed by the Corps of Engineers. Some facilities have also been developed by the State of California and Mendocino County, as indicated on Table 4. The Division of Beaches and Parks of the Resources Agency of the State of California, the County of Mendocino and the City of Ukiah were contacted to ascertain their interest in cost sharing of additional recreational development and operation and maintenance of the facilities. All responded negatively.

TABLE 1

PREVIOUS REPORTS

Report	Date Approved	Recreation Area	Facilities	
			Initial	Future
Master Plan	Mar 1959	All reservoir areas.	Overlook, parking and restroom constructed prior to Master Plan in Che-ka-ka Area.	-
Supplement A - Part I	Apr 1960	Che-ka-ka Area (2)	Boat-launching ramp and parking area.	Expansion of parking area.
Supplement A - Park II	Jul 1961	Bu-shay Area (5)	Access road from Highway 20 to Bu-shay Area.	-
Supplement B - Part I	Dec 1962	Bu-shay Area (5)	Picnic and Camp area (Areas A, B, & C).	Camp Area (Area D).
Supplement B - Part II	Mar 1963	Updating of Master Plan for all areas.	-	-
Supplement B - Part III	May 1965	Pomo Area (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	Nov 1968	Ky-en Area (4)	Camp Areas A and B.	Camp Area C.

Project Description

II - PROJECT DESCRIPTION

2.01 Location:

Lake Mendocino is located on the East Fork Russian River 0.8 mile above its confluence with the Russian River and 94 miles above the mouth of the river on the northern California Coast. The entire project is in Coyote Valley and within the confines of Mendocino County. Ukiah, the county seat, is located three miles south on U.S. Highway 101.

2.02 Tributary Area:

The East Fork Russian River has a drainage area of about 105 square miles above the dam site. Topography of the area ranges from the flat valley lands in the downstream reaches to the mountainous areas in the headwater region. Mountainous and hilly portions of the area are moderately to heavily wooded, and valley lands are generally productive for agricultural purposes.

2.03 Extent of the Project:

The Coyote Dam - Lake Mendocino Project, on the East Fork Russian River in Mendocino County, is a multiple-purpose project that was completed in June 1959. The reservoir, Lake Mendocino, is currently operated for the purposes of flood control, water supply, recreation, and streamflow regulation. The reservoir contains a gross storage capacity of 122,500 acre-feet of which 48,000 acre-feet are for flood control, 70,000 acre-feet for water supply and the remaining 4,500 acre-feet are for sediment reservation.

Coyote Dam is an earthfill structure 3,500 feet long at the crest and 160 feet high with a crest width of 20 feet. The outlet works are located near the middle of the dam and consist of an approach channel, intake structure and control tower, conduit, exit portal, and a discharge channel. The reservoir has a spillway located 0.6 miles upstream of the left abutment of the dam.

Lake Mendocino is approximately 3 miles long on a north-south axis and about 1 mile wide. The water surface area of the water supply pool, at elevation 737.5 feet is 1,690 acres and when combined with 3,420 acres of surrounding project lands makes up a total area of 5,110 acres. The shoreline is basically even with few inlets and remains relatively consistant with fluctuations of the pool level. At the normal pool level, the shoreline is approximately 13.5 miles.

The total cost of the project for the dam and reservoir was $17,550,000, of which $11,952,000 was the Federal portion and $5,598,000 the non-Federal portion. In addition, the Federal Government has expended $2,632,000 for recreational developments to date and additional facilities for this purpose are scheduled for future development.

Data pertaining to the project are presented on Table 2.

TABLE 2

PERTINENT DATA

GENERAL	
Location of dam	East Fork Russian River, approximately 0.8 mile above its mouth.
Drainage area above dam site	105 square miles
Maximum discharge of record (estimated)	12,600 c.f.s. in 1951 12,400 c.f.s. in 1943 12,200 c.f.s. in 1940
RESERVOIR	
Spillway design flood runoff	136,360 acre-feet
Spillway design flood peak outflow	57,000 c.f.s.
Standard project flood runoff	95,000 acre-feet
Standard project flood peak outflow	25,500 c.f.s.
Maximum water surface	781.1 feet m.s.l.
Guide (tentative) taking line elevation	806 feet m.s.l.
Area (at spillway crest elevation)	1,958 acres
Storage - Total	122,500 acre-feet
Flood control - 48,000 acre-feet Conservation - 70,000 acre-feet Siltation - 4,500 acre-feet	
DAM	
Crest length	3,500 feet
Crest elevation	784 feet m.s.l.
Maximum height	160 feet
Freeboard	3 feet

TABLE 2
(Cont'd)

OUTLET WORKS

Type	Single conduit
Gates	Three - 5 feet x 9 feet
Capacity (at bottom of flood-control pool	6,500 c.f.s.

SPILLWAY

Type	Fixed crest-channel control
Crest width	200 feet
Crest elevation	765 feet m.s.l.
Maximum Spillway discharge	35,800 c.f.s.

2.04 Reservoir Operation:

Lake Mendocino is regulated for water supply and flood control. The water supply storage, 70,000 acre-feet is below elevation 737.5 feet. Flood control storage, 48,000 acre-feet is between elevation 737.5 feet and the spillway crest at elevation 765 feet. The maximum water surface which could occur during the life of the project would be the spillway design flood, about 15 feet over the spillway or elevation 780 feet. Maximum elevation reached during the December 1964 flood was 768 feet. Spill is expected to occur during one year in thirty.

There are frequent fluctuations in the flood control pool during the November through March flood season. After 1 April, storage in the flood control pool is available for water supply. Until recent years, water surface in the summer was raised to a maximum elevation of about 744 feet. Water supply demands have increased to a point where the maximum water supply yield potential is now needed. Cooperative studies with the Sonoma County Water Agency indicate that a maximum water supply storage of 90,000 acre-feet will allow a yield of 60,000 acre-feet per year. This storage corresponds to elevation 748 m.s.l. Agreement has been reached with the Sonoma County Water Agency that this will be the maximum encroachment until changed conditions might indicate advantages to additional encroachment.

Flow in the Russian River is seasonal and the land is subject to flooding. Most of the summer and fall flow comes from the East Fork at the head of which is the Potter Valley hydroelectric plant of the Pacific Gas and Electric Company. The water originates in the Eel River basin where it is collected and stored in Lake Pillsbury, from where it is channeled to the Van Arsdale Dam forebay reservoir and dropped through penstocks to the power plant and the East Fork of the Russian River. Without the PG&E releases of Eel River water at Potter Valley, the Russian River flow would be very low to no-flow during the dry season.

2.05 Visitation:

Lake Mendocino has recreational development, which includes facilities for camping, picnicking, swimming, fishing, hiking, resource interpretation and boating. During the recreation season there is over-use of the camping and day-use areas and on several occasions campers were advised that all areas were filled to capacity and that they would have to seek alternative campgrounds. In the past, overcrowding of facilities and the use of overflow areas has increased the visitation over the project's capacity. The annual recorded visitation as shown in Table 3 indicates a substantial increase over a period of 10 years.

The demand for recreational opportunities is expected to increase because of the expected increases in population, higher standards of living and more available leisure time. Because the capacity of the facilities is exceeded by the demand, only a portion of this demand will be met.

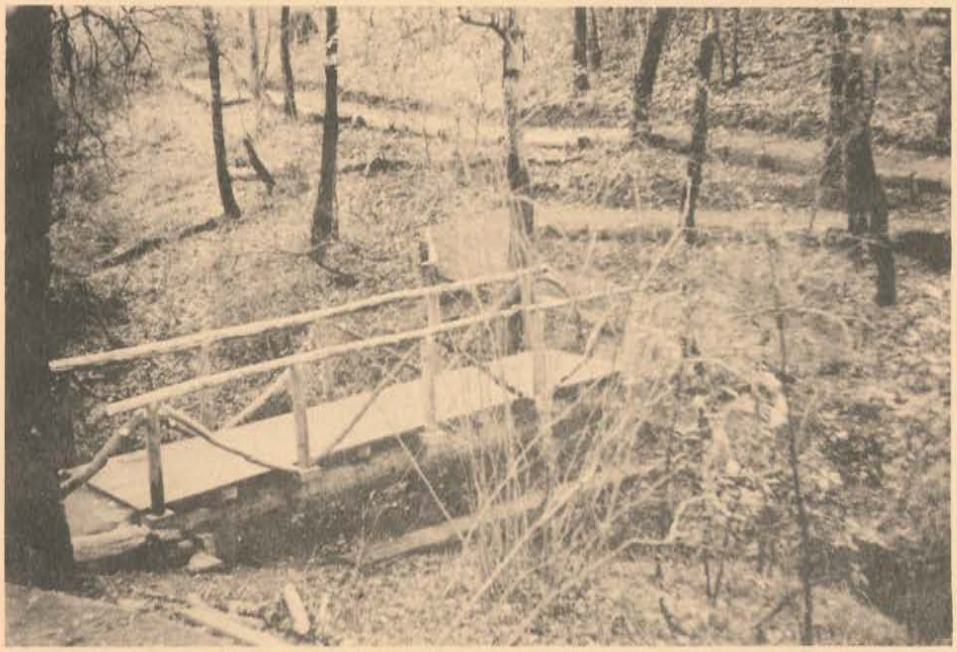
The demand accommodated at Lake Mendocino is met through the development of areas and experiences that challenge the imagination of people of all ages. Areas are reserved in which natural experiences may be enjoyed by visitors to Lake Mendocino in addition to those lands developed for more formal recreation.

TABLE 3

LAKE MENDOCINO RECREATION VISITATION

	Number of Visitor Days	Activity Distribution of Total by Percent							Total
		Camp	Picnic	Boat	Fish	Sightsee	Ski	Swim	
1964	550,000	-	-	-	-	-	-	1/	-
1965	676,600	14	12	9	6	41	8	10	100
1966	1,094,600	9	19	5	16	26	6	19	100
1967	891,200	5	12	5	26	36	6	11	100
1968	1,022,400	4	16	5	18	41	7	9	100
1969	1,066,500	13	18	8	22	22	4	13	100
1970	1,064,251	7	21	11	15	15	6	16	100
1971	1,358,109	3	26	10	16	16	4	13	100
1972	1,430,608	9	22	8	15	15	4	15	100
1973	1,317,487	6	22	7	27	27	4	13	100
1974	1,536,000	24	13	13	7	7	13	15	100
1975	1,515,000	21	20	12	14	5	14	14	100
1976	1,264,000	16	35	17	42	21	7	17	155 2/

1/ Figures not available.
2/ Criteria for percentages changed in ER 1130-2-414, 1 Oct 76.



Recreational Development and Operation

III - RECREATIONAL DEVELOPMENT AND OPERATION

3.01 Operation Chronology:

A recreation area consisting of 2,992 acres was leased from the Federal Government by the County of Mendocino effective 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 again 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 in May of 1966 and reversion of the right to possession of the land to the Federal Government. At that time, occupants were given 6 months notice to remove their property. One subconcessionaire in the Ky-en Recreation Area refused to comply and continued to occupy Government property for a period of 2 years without lease from either the County or the Federal Government. The Government brought legal action against the subconcessionaire and regained possession of the property on 10 June 1968.

The County constructed a boat-launching ramp and parking area with funds provided by the State of California Wildlife Conservation Board. The County relinquished this area to the Government on 13 May 1969. Since that time, the development and the operation of all facilities at Lake Mendocino have been the responsibility of the Corps of Engineers.

3.02 Development Chronology:

Development of recreational facilities began immediately after the completion of the dam. The Federal Government developed an overlook, comfort station, 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 planned to relinquish its lease. A summary of the development chronology is presented as Table 4.

TABLE 4

PAST RECREATION FACILITY ALLOCATIONS

Fiscal Year	Amount of Funds	Types of Funds	Facilities Constructed
1959	$ 70,000	Const. General	Overlook, restroom, parking in the Che-ka-ka Recreation Area.
1960	0	-	-
1961	120,000	Const. General	Boat-launching ramp, parking area, and access road in the Che-ka-ka Recreation Area.
1961	State of California Funds construction by Mendocino County		Boat-launching ramp, parking area, and comfort station in the Ky-en Recreation Area.
1962-1963	510,000	Const. General	Fire protection and access road to Bu-shay Recreation Area.
1963	400,000	Accelerated Public Works Program	Picnic areas, campsites, trails, roads, sanitary and water supply systems for the Bu-shay Che-ka-ka Recreation Area.
1964	80,000	710	Completed facilities in Bu-shay Recreation Area.
1965	100,000	710	Began construction in the Pomo Recreation Area.
1966	110,000	710	Sanitary facilities, irrigation and water system, trails, landscaping and picnic shelters and facilities in the Pomo Recreation Area.
1967	95,000	710	Continued development of the Pomo Recreation Area.
1968	160,000	710	Sewage treatment plant in the Pomo Recreation Area, designed for future expansion to receive sewage from the Ky-en Recreation Area.
1969	85,000	710	Installed sanitary and sewage systems for Pomo and Ky-en Recreation Areas.

TABLE 4

PAST RECREATION FACILITY ALLOCATIONS (Cont'd)

Fiscal Year	Amount of Funds	Types of Funds	Facilities Constructed
1970	$ 84,000	711	Continued construction of sanitary and sewage systems for Pomo and Ky-en Recreation Areas.
1971	117,000	711	Rehabilitated sanitary facilities and sewage disposal systems and constructed a sanitary dump station and roads to accommodate Ky-en Recreation Area.
1972	224,500	711	Constructed 2 comfort stations, rehabilitated one comfort station, constructed 71 camp units and circulation roads in the Ky-en Recreation Area. Constructed comfort station and disposal facilities in the Bu-shay Recreation Area.
1973	0	-	-
1974	123,863	California State Department of Navigation and Ocean Development	Improved existing boat launching facilities at the Che-ka-ka Recreation Area.
1975	450,000	711	Upgraded 7 existing comfort stations in the Bu-shay Recreation Area. Constructed new comfort stations in the Pomo, Ky-en and Bita Recreation Areas. Sanitary dump station in the Bu-shay Recreation Area.

The 820th Army Reserve Unit has constructed a vehicle bridge in the Pomo Recreation Area, a pedestrain bridge in the Ky-en Recreation Area and two picnic shelters in the Che-ka-ka Recreation Area, as part of their annual training exercises.

3.03 Title 10 Program:

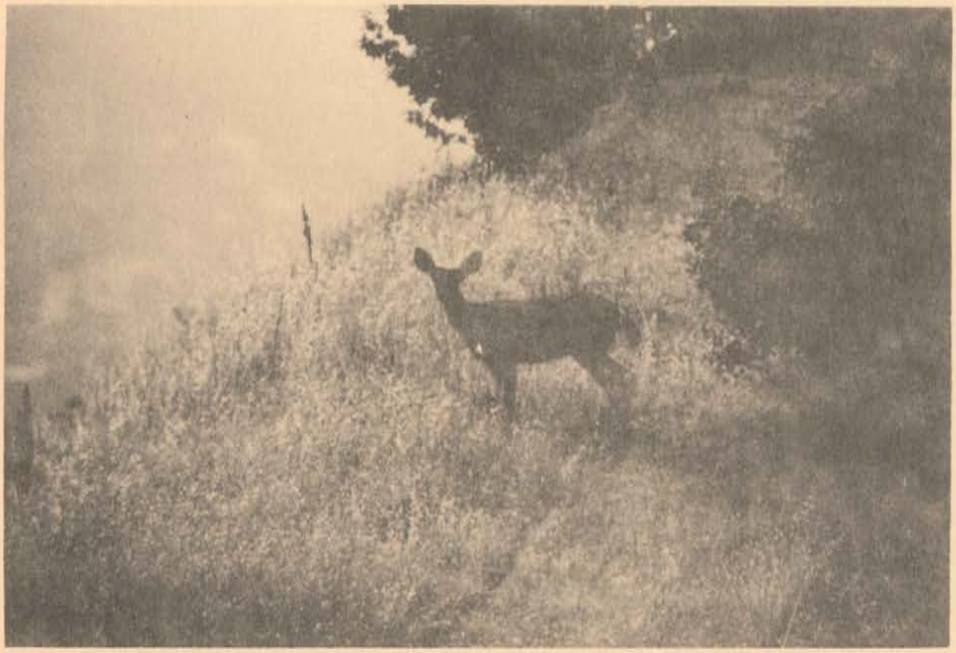
During 1975-76, the Secretary of Commerce made funds available to the Corps of Engineers to be used in implementing a Job Opportunities Program at Lake Mendocino, under Title 10 - Job Opportunities Program - of the Emergency Jobs and Unemployment Assistance Act of 1974, Public Law 93-567; 88 Stat. 1845. An amount of $754,000 was made available for this program, which included the following projects:

(1) Brush shelters for fish habitat
(2) Six group barbeques
(3) Three play areas
(4) Erosion control
(5) Amphitheater
(6) Landscape protection devices
(7) Seven picnic shelters and four group picnic shelters
(8) Slope planting
(9) Hiking trails
(10) Camping spur lengthening
(11) Landscape planting
(12) Swimming beach improvement
(13) Barriers along Marina Drive
(14) General development in the Pomo Recreation Area
(15) Floating fishing dock
(16) Improvement of drainage works
(17) Ranger control station
(18) Extensive archeological, ethographic and historical research in order to inventory the area's prehistoric and historic cultural resources.

All physical developments included in the program have been completed or are near completion. Therefore, such developments are considered as "existing" in this master plan.

3.04 Future Funding

Since Lake Mendocino has been placed in a category C in accordance with EWGCW-Y letter of 5 August 1965, "Implementation of the 1965 Federal Recreation Act", 710 funds will no longer be available for future development other than the upgrading of sanitary facilities in existing recreation areas. The only items proposed in this master plan which may qualify for this type of funding are upgrading the existing chemical toilets to a modular comfort station in the Che-ka-ka Recreation Area and flood proofing the sanitary sewers in the Pomo Recreation Area. Any other future construction of facilities, except a proposed Interpretive-Cultural Center, would have to be accomplished with operations and maintenance funds or under a cost-sharing program with non-Federal interests. The State and County agencies have indicated that they have no interest in a cost-sharing program at the present time. No future development which would qualify for the program of the California State Department of Navigation and Ocean Development is proposed in this master plan.



Environmental and Recreational Resources of the Project Area

IV - ENVIRONMENTAL AND RECREATIONAL RESOURCES OF THE PROJECT AREA

4.01 Investigation of Resources:

Any master plan must be based on and continuously updated with, adequate knowledge obtained through appropriate investigation and research. Although considerable information is already available, a continuing research program is an important requirement. Unless such research is carried out, there is serious danger that many of the environmental resources which make the project area unique, will disappear. This program is not only being carried out by the Corps, but also by other agenices as briefly described in Chapter VI, COORDINATION. The Corps supplements the efforts of these agencies to fill informational needs required for the continual update of the operational plans presented as appendices to this master plan. Corps personnel will also continually gather information necessary to provide a continually updated interpretive program that is to be developed within the lake's resource management program.

4.02 Land Forms:

Throughout the north coast 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 in the vicinity of Coyote Valley is one 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 east of Coyote Valley. The lower ridges and hills which 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 a 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 about 1-1/2 miles wide by 3 miles long that lies a mile or so east of the Redwood and the main Ukiah Valleys. It is flanked by rolling hills that rise 400 feet above the valley floor to the west of the reservoir 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.

4.03 Life Forms:

a. Vegetation. Woodland, brushland, and grassland comprise the primary types of plant cover in the project area. The woodland consists mainly of California bay, madrone, Oregon Oak, California Black Oak and live oak. In addition, many species which occur in the chaparral and brushland areas are also present in the woodland. Brushland species include chamise, California scrub oak, dwarf live oak, buck brush, deer brush, toyon, manzanita, poison oak, mountain mahogany, California bay, madrone, California buckeye, and California wildgrape. The predominant cover on the grassland areas consists of introduced annual grasses and weeds. The most common grasses are annual bromes and fescues while the most prevalent forbs are filaree and tar weed.

Wildflower populations within the project area are especially diverse. Two areas have been specifically identified as having wildflowers of unique quality. One area is located in the Wildlife Area and the other area near the South end of the lake (see Plate 5). More information concerning these wildflowers can be found in the report entitled "Coyote Dam's Lake Mendocino Wildflowers".

b. Fisheries. The East Fork Russian River below the dam supports both steelhead and resident species of fish. Prior to the construction of the lake, river conditions for fish growth and reproduction were not always favorable because of low flow and high water temperature in summer and late fall. The project, as authorized, provides for a minimum flow of not less than 150 cubic feet per second or reservoir inflow, whichever is less, at the confluence of the East Fork and the Russian River. Releases from the reservoir maintain a minimum flow of 125 cubic feet per second at Guerneville as well as sufficient flows to satisfy the water supply needs in Santa Rosa and adjacent communities. In addition, the existing low-level outlet was recommended to offset the warm water conditions downstream of the dam and provide for protection and mitigation of fishery losses.

The California Department of Fish and Game has developed a fish management program for the lake. Approximately 1,300,000 rainbow trout were stocked during 1959, 1960 and 1963. It was determined that the stocking of trout was not successful since the carryover was low. Subsequently, the reservoir fishery was developed for warm water species. The warm water game species present in Lake Mendocino include large mouth black bass, black and white crappie, bluegill, green sunfish, brown bullhead, red-ear sunfish, white catfish and channel catfish. The bluegill, sunfish and crappie thrived so well that a stunted population was noted in the lake. For control, the State introduced new species to feed on the stunted fish. Approximately 44,000, two- to ten-inch striped bass were stocked in 1967 to control the sunfish and crappie population growth. While the present fish population of the reservoir is considered to be good, it is expected that angler success can be improved through further management.

c. Wildlife. Wildlife found in the area include deer, rabbits, quail and mourning doves. Waterfowl habitat existed along the river prior to the construction of the reservoir, and no significant decrease of this habitat has resulted. Also, the reservoir did not affect the unsuccessful pheasant plantings in the Ukiah area. The size of the wildlife habitat land remaining has been reduced as additional recreational sites have been developed. Even though the amount of wildlife habitat has been reduced, game and non-game species such as deer, quail, and rabbits are seen throughout the project area. Game trails criss-cross the recreation areas and visitors frequently enjoy observing various species of wildlife. Hunting is permitted on water surfaces and lands on the east shore of the reservoir for waterfowl and small game only during duck hunting season.

4.04 Cultural Resources:

Sufficient information does exist about the area to indicate that the historic cultural resources can play an important role in the future resources management of the project. The most significant cultural component is that of the Pomo Indians, who were long-time inhabitants of the valley prior to settlement in the mid-19th century by those of European descent.

During the 1940's and '50's, seventeen Pomo villages were identified by archaeologists within the reservoir area, though only one of them was excavated prior to inundation. Other project lands have never been surveyed by archaeologists, and it seems likely that additional sites could be located. In addition to such prehistoric habitation areas, a 110-acre Indian Rancheria was located on project lands from 1909 until the construction of the reservoir.

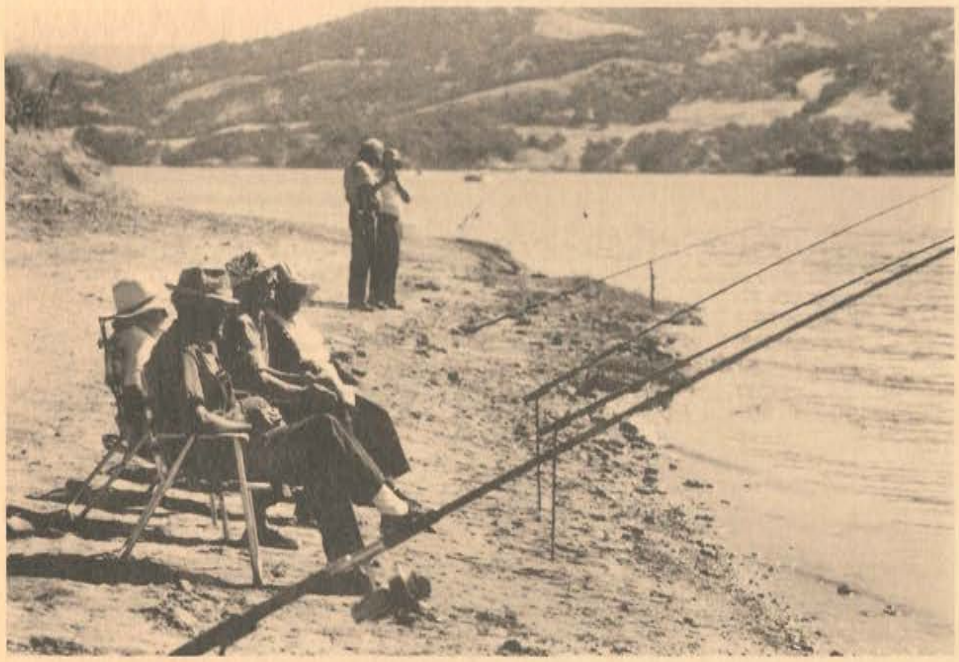
The Corps is presently conducting extensive archeological, ethnographic and historical research in order to inventory the area's prehistoric and historic cultural resources, and comply with Executive Order 11593, Protection and Enhancement of the Cultural Environment. Plans will be prepared for the management of these resources, and their utilization in interpretive programs. Other aspects of the area's history are also being studied, such as settlements in the area by Italians and Scandinavians, the development of viticulture, lumbering and other industries, and other changes, such as those that have occurred since 1907, when water from the Eel River was diverted into the East Fork Russian River.

4.05 Recreation:

The close proximity to U.S. Highway 101 and State Route 20, in combination with the moderate climate, aesthetic qualities, and high

quality of facilities, serves as an enticement to Lake Mendocino. The major attractions at the project center around water-associated recreation, including boating, fishing, water skiing, and swimming. Other activities include picnicking, camping, hiking, and sightseeing. Facilities provide opportunities to many outdoor recreationists who live in Mendocino County, Sonoma County, the San Francisco metropolitan Bay Area and to many of the more than three million tourists who travel the western coast annually.

Many favorable comments have been directed to the Corps by those who have utilized the existing recreational facilities. Recreationists have indicated that the quality of the facilities and the high standards of maintenance were among the most important reasons for visiting or revisiting the project. Because of these types of comments and recognizing that the "news" spreads fast, Lake Mendocino enjoys the reputation of being one of the finest warm water-oriented projects in northern California.



Factors Influencing Resource Development

V - FACTORS INFLUENCING RESOURCE DEVELOPMENT

5.01 Climate:

In common with much of the California coastal area, the year is divided into a wet and dry season. The local region lies east of the belt of heavy coastal rainfall in a climate that is almost semi-arid with hot, dry summers, and wet winters. Ninety-three percent of the annual precipitation normally falls during the wet season, October to May, with a large percentage of the rainfall occurring during three or four major winter storms. The average rainfall is 36.3 inches at Ukiah.

Winters are cool, and below-freezing temperatures are occasionally experienced. Snow falls infrequently at the higher elevations and rarely attains an appreciable depth. Summers are warm and the frost-free season is fairly long. The average temperature at Ukiah is 59.2°F. The average temperature in January is 44.8°F and in July is 71.8°F. The temperatures range from a low of around 20°F in winter to a high of around 105°F in the summer. There are very few days when the temperature is above 100°F and the hot spells are of short duration.

There is little fog and it generally disappears early in the forenoon. Coast breezes reach the valleys during the summer months, tending to make the nights cool.

5.02 Topography:

The hills to the east of the reservoir are very rugged and continue on for many miles. To the west and northwest, the hills are more rounded with benches that were once planted to vineyards. In general, recreation areas are developed on the benches above the lake.

5.03 Soils:

Most recreation areas within the project 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 area are susceptible to heavy erosion.

5.04 Vegetative Cover:

Characteristic of the area, north slopes and deep ravines are more heavily wooded than areas where conditions are less favorable to the retention of groundwater within the root zone. Considerable area may have been burned over in the relatively recent past. Much of the burning was intentional, being done in order to convert additional areas to a cover type suitable for use as grazing lands. If possible, recreation areas are generally located in or near wooded areas. The wooded areas are aesthetically pleasing and provide shade from the hot summer sun.

5.05 Water Quality:

At the original filling of the lake, water quality was adequate to allow for all water contact sports. Since then, acceptable water quality has been maintained.

A study was made to determine sources of suitable potable water for the recreational areas. The local Calpella Water District had an insufficient quantity of water and no available facilities in the area. The remaining available sources were well-water and the lake. Well-water was selected since the lake-water would have required extensive treatment. Chlorination of the well-water was determined to be the only treatment necessary and equipment for disinfecting the water supply was installed. The water meets all appropriate water standards.

5.06 Accessibility:

Lake Mendocino is readily accesssible from U.S. Highway 101 which is located 2 miles west of the lake. This, the Redwood Highway, is the major artery connecting the San Francisco Metropolitan Area with Federal and State redwood parks and other northern points of interest. State Highway 20, which was relocated during project construction and skirts the north shore of the lake, connects to the west with U.S. Highway 101. Eastward, State Highway 20 crosses the state through Marysville and connects to U.S. Highway 80, a national east-west route.

Access to the recreation areas at the southern end of the lake is provided by Lake Mendocino Drive. Access to the recreation areas in the northern end of the project are provided by Marina Drive and State Highway 20.

5.07 Related Recreational Areas:

a. Regional Perspective. The Russian River Basin is one of the important recreation areas in northern California. It has a mild climate throughout the year and is especially attractive for summer outdoor living. Streamflow and water supplies in the main river for recreational uses are adequate during most of the year, due to upstream regulation of

Coyote Dam, but those of tributary streams are very low or non-existent during the summer season when recreational demands are highest. This has been an important factor in limiting recreational development of the tributary areas. The scenic beauty of the valleys, streams and mountains, enhanced by their proximity to the Pacific seacoast, attracts large numbers of visitors each year.

Most of the existing resort developments are located along the main river downstream from the City of Healdsburg, the main attraction being the quiet rural environment, scenic surroundings and swimming and boating activities. The proximity of the basin to the San Francisco metropolitan area has made it desirable as a day-use, vacation and summer home area. Recently, the summer homes in the lower basin area have begun to give way to year-round homes.

Development of the recreational potential has been slow, considering the existing heavy demand for water-associated facilities. The proximity and increased accessibility of the Russian River Basin to densely-populated metropolitan centers, due to freeways reducing distance and travel time, together with predicted increases in population, higher standards of living and more leisure available, indicate the need for the provision of suitable facilities in adequate numbers to meet an increasing recreational demand.

b. Private Developments. Present recreational facilities in the Russian River Basin are inadequate and concentrated in a few areas. Many people use the basin as a vacation area and have built, purchased, or rent summer homes. The greatest portion of concentrated developments are located generally between Mirabel Park and the Pacific Ocean and in the Fitch Mountain area just upstream from Healdsburg.

As a result of the large number of outside visitors to the basin each year, many recreation facilities have been commercially developed. These vary from camping around private irrigation lakes to amusement park developments, as well as lodging and eating establishments. Notable tourist attractions are the privately-operated facilities at The Geysers and at the Petrified Forest. There are twenty-two existing reservoirs in the basin that are being or could be used for recreational purposes which vary in size from 2 to 48 acres. There are also numerous church and service organization quasi-public camps scattered throughout the basin.

c. County Developments. Sonoma County has established a few low summer dams along the river, together with streamside recreation areas, primarily for swimming and beach activities.

d. Development by the State of California. At the present time, the State of California has developed three recreation sites in the immediate vicinity of the river; Armstrong Redwoods State Reserve near Guerneville, Goat Rock Beach State Park at the mouth of the Russian River, and Austin Creek Recreation Area on Austin Creek.

e. Federal Development. The Corps of Engineers development at Lake Mendocino includes facilities for camping, picnicking, swimming, fishing, hiking, and boating. The Bureau of Land Management manages approximately 50,000 acres on Cow Mountain, along the east side of the Ukiah Valley, for hunting, camping and off-road vehicle use.

5.08 Reservoir Regulation:

Agreement has been reached with the Sonoma County Water Agency that the maximum elevation of the water supply pool will be 748 m.s.l. for the present. The maximum water surface elevation which could occur during the life of the project is 781 feet. During a standard project flood, the maximum water surface elevation would reach elevation 772. Therefore, under present operating conditions, permanent facilities that could be damaged by inundation would be located above elevation 772 feet and removeable facilities or facilities which would not suffer damage from inundation would be located between elevations 748 and 772 feet. The "rule curve", area-capacity curve and drawdown frequency curve for the reservoir, are included as Plates 1, 2 and 3 of this report.

Coyote Dam was originally planned for two-stage construction. The second and ultimate stage was to be accomplished when required by local demand for additional water from Lake Mendocino. Raising the lake would, for all practical purposes eliminate the existing recreational development. All existing westshore development and the water supply and access road for the eastshore areas would be inundated. Future recreation visitation would then depend on what new facilities would be developed. Raising the lake would require a totally new master plan for recreational development.

5.09 Carrying Capacity:

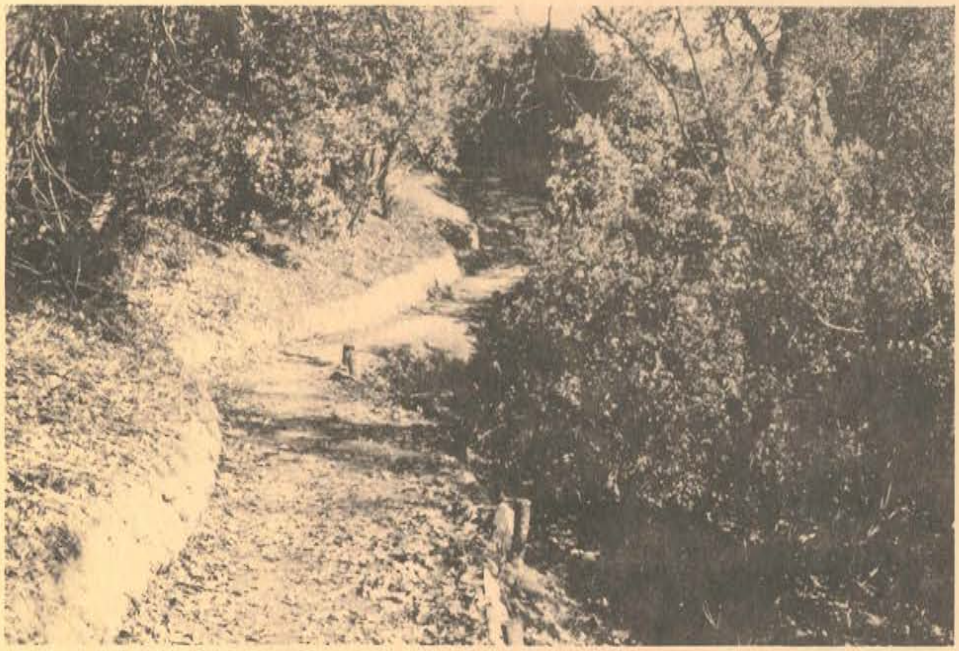
The consideration of carrying capacity is important for the development, recreational use and protection of the natural resources. The major factors governing such capacities are the physical and indirect ecological impact of the visitor upon the resources, the quality of the park experience, and visitor safety.

To protect the environmental resources, the facility capacity should not exceed the capacity of the basic environmental resources. The resources could then be protected by closing the entrance of an area to the public when the respective facility capacities have been reached.

Environmental stress from public use will be evaluated by the adverse characteristics of plantlife and soil conditions. The determination of required management programs, which could include the elimination or restriction of public use, will be based on the opinion of resource planners who are familiar with both recreation areas and the native vegetation.

5.10 Off-Road Vehicles:

The widespread use of off-road vehicles on public lands, for legitimate recreational purposes but often in frequent conflict with wise land and resource management practices, environmental values, and other types of recreational activity, has demonstrated the need for controlling and directing such use. Off-road vehicle use is not compatible with the existing or proposed recreational uses at Lake Mendocino. Since the project boundaries do not extend beyond the ridges surrounding the reservoir, this type of recreation would adversely affect the natural, aesthetic and scenic values of the reservoir area. Non-aquatic vehicles use of the project lands will be restricted to the public road network.



Coordination

VI - COORDINATION

6.01 Federal Agencies:

The following Federal agencies cooperate with the Corps of Engineers to augment the management of Lake Mendocino.

a. Department of Agriculture

1. The Soil Conservation Service provides the appropriate methods and criteria necessary to promote soil conservation and classification.

2. The Mendocino National Forest provides consultation on resource management practices.

b. Department of Commerce

The National Oceanic and Atmospheric Administration provides weather forecasts useful in the administration of the flood control function of the project.

c. Department of Interior

1. The Bureau of Land Management provides maps and materials required for local interpretation and public relations.

2. The Bureau of Outdoor Recreation is responsible for all recreation fees collected, reports to Congress (PL 93-303) and redistributes revenues to the U.S. Army Corps of Engineers and other collecting agencies.

3. The Fish and Wildlife Service provides recommendations concerning fish and wildlife management through the Fish and Wildlife Coordination Act.

4. The Seismic Engineering Branch of U.S. Geological Service records and maintains the three (3) seismograph stations located on and adjacent to Coyote Dam.

5. The Geological Survey cooperates with the Corps in collecting streamflow and reservoir level data and collecting and analyzing reservoir inflow and outflow water quality samples, for operation of the reservoir.

6. A National Park Service consultant has informally reviewed preliminary plans for the Lake Mendocino Interpretive-Cultural Center proposed in this master plan.

d. Department of Transportation

1. The Federal Aviation Administration follows Corps recommendations in prohibiting amphibious aircraft on the lake.

2. The Coast Guard Reserve provides safety programs and the manpower necessary to promote boater safety.

e. The Federal-State River Forecast Center, Sacramento, jointly monitors river conditions along the Russian River and issues flood forecasts when conditions are such that flooding may be imminent.

f. The Environmental Protection Agency provides a sampling program for the National Elithrophication Survey which will supplement existing water quality data programs.

6.02 State Agencies:

The following State agencies cooperate with the Corps of Engineers to augment the management of Lake Mendocino.

a. The California Highway Patrol is on call 24 hours a day, enforces State and local laws, and assists with problems involving vehicle accidents and control.

b. The California Division of Forestry provides fire suppression training for project personnel and has the responsibility for primary fire control.

c. The California Department of Fish and Game participates in studies, fish planting and other considerations that would benefit the production of fish and wildlife at the project.

d. The California Department of Human Resources Development sponsors the recruiting of personnel from the unemployment rolls for programs such as the Job Opportunity Program, PL 93-567.

e. The State Department of Navigation and Ocean Development provided a grant for cost sharing in the development of facilities in the Che-ka-ka boat launching area.

f. The California State College, Sonoma is continuing research concerning cultural resources of the region including the project area, originally initiated by the Job Opportunities Program.

g. The University of California extension program offers classes in landscape management, soil conservation and pesticide worker safety.

h. The University of California at Davis provides a service to determine the type of trees and shrubs to be used at Lake Mendocino, how to care for them and available sources.

i. The State-Federal Flood Operations Center, Sacramento, jointly monitors river conditions along the Russian River and issues flood forecasts when conditions are such that flooding may be imminent.

6.03 County of Mendocino:

The following agencies of the County of Mendocino cooperate with the Corps of Engineers to augment the management of Lake Mendocino.

a. The Sheriffs Department is on call 24 hours a day to assist in the safety and protection of the public by enforcing State and local laws.

b. County administered job opportunity programs which include C.E.T.A. and Title I, II, VI and X use various forms of local labor to support project programs while providing training and experience.

c. The Regional Occupation Center provides educational opportunities for skills to be used by various employees at the project.

d. The Center for Educational and Manpower Resources sponsors students that are employed as summer aides.

e. The Public Works Department maintains certain roads and drainage facilities that are necessary for access to the project areas.

6.04 Local Agencies and Groups:

The following local agencies and groups cooperate with the Corps of Engineers to augment the management of Lake Mendocino.

a. The Sonoma County Water Agency administers control of approximately 70 percent of the storage in Lake Mendocino and directs desired water supply releases.

b. The City of Ukiah participates as a public relations liaison between the Corps and the local citizens.

c. The Ukiah Fire District provides its capability to back up other cooperating fire fighting agencies.

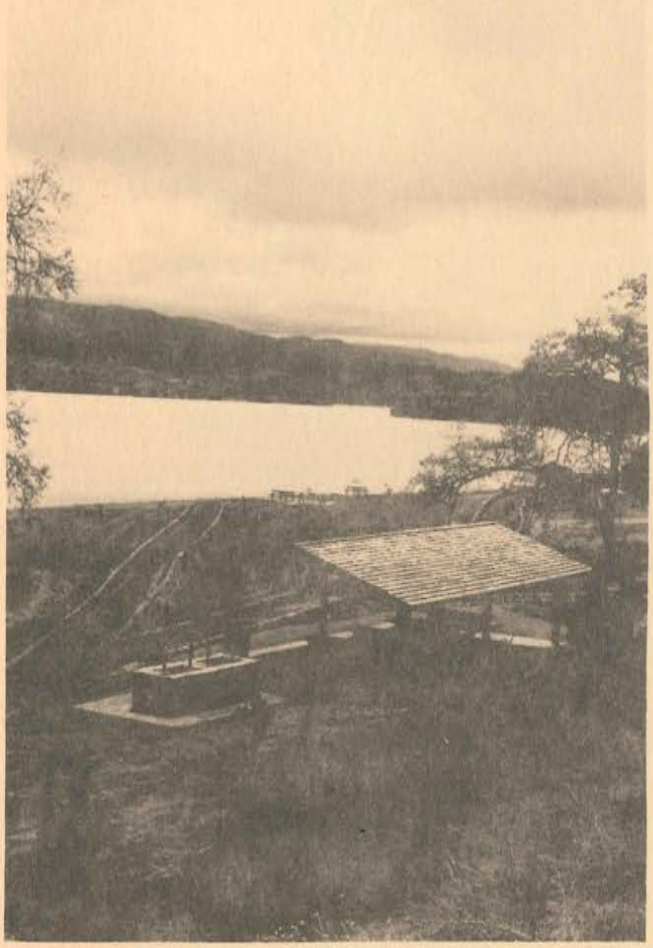
d. The Redwood Valley Fire District provides its capability to back up other cooperating fire fighting agencies.

e. The Mendocino County Historical Society provides a source of information used in the development of interpretive programs.

f. The Intertribal Council Manpower Consortium (Sacramento) has been instrumental in the placement of Native Americans for employment at Lake Mendocino.

g. The Mendo-Lake Pomo Council has cooperated in the planning of a Native American Cultural Center which is to be developed as a part of a proposed Lake Mendocino Interpretive-Cultural Center.

h. Senior Citizens assist with the operation and development of the project through a Federally funded Senior Community Service Employment Program.



Physical Plan of Development

VII - PHYSICAL PLAN OF DEVELOPMENT

7.01 Land Use Classification:

a. General. Master planning requires sound classification for the lands in a recreation area. This is necessary to insure that public facility development is commensurate with the use capabilities of the basic resources. It is therefore a valuable tool for space allocation. The land classification used herein is quite similar to that used by the National Park Service. This system was conceived by the Outdoor Recreation Resources Review Commission and was recommended for application to Federal lands used for recreation purposes. Under this system, lands may be segregated into any one of seven classes. Plate 4 shows the different land classifications within the project area. These classifications determine the types of use that will be allowed and the management objectives for the various areas within the project.

b. Class I. Class I lands are high density recreation areas. The proposed Lake Mendocino Interpretive and Cultural Center is designated in this classification.

c. Class II. Class II lands are general outdoor recreation areas. This classification identifies the lands reserved for visitor accommodations, for administrative facilities, fully developed campgrounds, public beaches, marinas, boat ramps, two-way roads and other public use areas of varying intensities. Water surface areas designated for general recreation activities are also classified as Class II.

d. Class III. Class III lands are natural environment areas. These areas often provide the transition or buffer between the general outdoor recreation portions of the project (Class II) and the primitive wilderness areas (Class V) or, areas of historical or cultural significance (Class VI). Lands having natural values that do not meet the criteria for primitive or wilderness designation may be classified as Class III. The only facilities planned on these lands are the minimum required for public enjoyment, health, safety, preservation and protection of the natural features. These would include trail systems, small visitor overlooks, informal picnic sites, short native plant walks and facilities for wilderness type uses.

e. Class IV. Class IV lands are outstanding natural or scientific areas. These lands usually represent the most fragile and most precious values of a natural area. Class IV identifies the terrain and objects of scenic splendor, natural wonder or scientific importance. These lands must have the highest order of protection so that they will remain unimpaired for future enjoyment. No human use will be permitted on Class IV lands that intrudes upon or may in any way damage or alter the natural setting. Class IV lands at Lake Mendocino include: (1) two unique wildflower areas on the eastern shore and (2) a previously

developed spring on the western shore where a large variety of mosses are present. As more research is done within the project, additional areas may be found which will also be designated Class IV.

f. Class V. Class V lands are set aside for the purpose of wildlife management. There will not be any intrusions of man to mar the character and detract from the solitude and quiet of nature. Primitive trails or use of existing fire access roads for foot and horse travel are acceptable. Narrow trails which blend into the landscape will be allowed in the wilderness with footbridges where they are essential to visitor safety. Discretely placed drift fences will be permissible if needed in the interest of protecting wildlife values. No improvements will be permitted that are primarily for the comfort and convenience of visitors, such as developed campgrounds and picnic facilities.

g. Class VI. Class VI lands are historical and cultural areas including historical structures of historical or cultural significance. Winery Point with its abandoned winery and farm machinery is designated as a historical interpretation area.

h. Class VII. Class VII lands are nonpublic use project areas. This classification is not used by other agencies. It is for those areas which are necessary for the project and will remain altered from their natural conditions. Their primary use is not recreation oriented. Areas designated Class VII would include the control tower, spillway and the face of the dam.

7.02 General Recreation Areas:

Lake Mendocino includes six recreation areas which provide opportunities for a variety of water-oriented activities. These activities include camping, boating, fishing, swimming, waterskiing, picnicking, sightseeing, and interpretation. Areas are divided between camping and day-use activities. The camping areas have been developed in a manner that provides a rustic or nature-oriented experience. The formal day-use areas are highly developed, as an urban or suburban park, to accommodate the high-intensity use experienced. The following paragraphs present the existing and proposed recreational facilities for all recreational areas as located on Plate 5. All recreational areas have been given names in the language of the Pomo Indians which, in the following descriptions, are accompanied by a translation in parentheses.

7.03 Sho-da-kai (Valley) Recreation Area:

Access to the Sho-da-kai Recreation Area, an island east of the dam, as shown on Plate 6, is by boat only. Picnicking and fishing are afforded at this site which has no developed facilities. There are no additional improvements proposed. Because of the limited recreational uses, the area is designated as Class III land unlike the other general recreation areas which are designated as Class II lands.

Visitors utilizing the Sho-da-kai Area would first use the boat launching facilities at the Che-ka-ka Recreation Area. Thus, the visitation is reflected in this area. Operation and maintenance costs are very minimal.

7.04 Che-ka-ka (Quail) Recreation Area:

a. Existing Development. The Che-ka-ka Recreation Area is located adjacent to the north end of Coyote Dam and is provided access by Lake Mendocino Drive. As shown on Plate 6, the area consists of (1) an overlook area, (2) a boat-launching area with parking, (3) a camping area, and (4) picnic areas.

The overlook area consists of a paved parking lot for 36 cars, 8 picnic units, and restroom facilities. These facilities were constructed by the Corps prior to the completion of Coyote Dam. This area is also the trailhead for the Sha-ko-ta (Rabbit) Trail which extends north to the Pomo Recreation Area.

A bench below the overlook area has been developed as a picnic area known as the Joe Riley Area. The facilities include an unpaved parking area for 20 vehicles, a group barbecue serving two picnic shelters, chemical toilets, grass with an irrigation system, night lighting, and electrical outlets.

The boat launching area consists of a six-lane boat-launching ramp and a paved parking area to accommodate 75 cars with trailers. The parking area was created by using excess fill and is in close proximity to the launching ramp. The paving of the parking area along with improvement of the facilities by the addition of a floating courtesy dock, sanitary facilities, water, and lighting was accomplished with funds contributed by the California State Department of Navigation and Ocean Development.

The camping area (Class E, no charge) is located above the boat-launching area near the right abutment of the dam and consists of 23 designated camping spurs.

A small undeveloped parking area is located on another bench below the Joe Riley Area. This parking area is below the maximum elevation of the water conservation pool but is used extensively during the latter portion of the recreation season. Access to a floating fishing platform is provided from both this undeveloped parking area and from the Joe Riley Area.

The development in the Che-ka-ka Recreation Area has potable water and a limited irrigation system. Since there is no well in the area, all water is obtained from the Mill View Water District. The comfort station at the overlook area employs a septic tank system

for sewage disposal and provides night lighting and electrical outlets in the building. Presently, utilities are adequate. Access provided by the 2-lane paved road is adequate; however, parking for vehicles with boat trailers is often severely overcrowded during weekends from Memorial Day to Labor Day. No future development is proposed that will significantly increase requirements for utilities, parking or access.

b. Future Development. Future development within the Che-ka-ka Recreation Area will consist of developing a fish-cleaning facility and upgrading the existing chemical toilets to a modular comfort station at the boat-launching area and paving the parking and access road to the Joe Riley Area as funds become available. A play area and a canopied kiosk are also to be developed near the overlook.

7.05 Pomo (People) Recreation Area:

a. Existing Development. The Pomo Recreation Area is located on the west shore of the lake, near the northwest corner of the project area. As shown on Plate 7, the area consists of three separate picnic areas. Access to the area is provided off Marina Drive.

Facilities in the picnic areas provide a total of 63 picnic units, 13 shelters, 6 group shelters, 4 group barbecues, 1,000 linear feet of swimming beach, three combination change houses and comfort stations, paved circulation roads and trails, irrigated turf, a play area for children, paved circulation roads and parking for 200 vehicles.

The Sho-ko-ta Trail which extends between the Che-ka-ka and Pomo recreation areas passes a nearby abandoned winery at Winery Point where abandoned farm machinery and the winery are items of public interest.

Potable water and irrigation systems in the Pomo Recreation Area are independent. Water for comfort stations and drinking is supplied by a well within the area. Irrigation water for the turf areas is drawn from the lake by a submersible pump. Two comfort stations have cold showers and the third has hot showers provided by a 120 gallon electric water heater. Sewage from the comfort stations is disposed of through a 4,000 gallon sewage treatment plant located south of the area. Summer weekend traffic overloads the parking facilities in the area and it is frequently necessary to involve ranger personnel in traffic direction.

b. Future Development. The only major item of development proposed in this master plan is an Interpretive-Cultural Center Complex in the Pomo Recreation Area which is described in paragraph 8.01. The center will be located west of the access road to the picnic areas. In the south picnic area, a play area is proposed which would be similar to the play area in the north picnic area.

Future development at nearby Winery Point will be dictated by the scope of the future interpretive program and will include general clean-up, re-arangement of existing farm machinery, signing and interpretive trail designation.

No future development is proposed that will significantly increase requirements for utilities, parking or access except for the Interpretive-Cultural Center Complex. These items are addressed in the description of the center. A feature design memorandum for the center will be prepared prior to the preparation of plans and specifications.

7.06 Ky-en (Duck) Recreation Area:

a. Existing Development. The Ky-en Recreation Area is located on the north shore of the lake, adjacent to the Pomo Recreation Area as shown on Plate 8. Access is provided by Marina Drive which passes through the area and connects with State Highway 20. The Ky-en Recreation Area consists of a boat-launching area, a picnic area, and three camping areas.

The boat-launching area consists of a 6-lane boat-launching ramp with appurtenant comfort station and parking area for 100 vehicles. These facilities were constructed by the County of Mendocino with funds from the State of California Wildlife Conservation Board. An adjacent concessionaire provides docking facilities for slip and boat rental, sale of marine fuel and oil, bait, fishing tackle, boat hardware supplies, firewood, food, drinks, and ice. A floating courtesy dock has recently been installed by the Corps.

The picnic area is located below Marina Drive in a large grove of oak trees. The area includes 6 picnic units, 2 group picnic shelters with group barbecues, and a play area for children. Below the picnic area is an unpaved parking area for 40 vehicles and 190 linear feet of swimming beach.

Two camping areas are located north of Marina Drive which includes 71 campsites and three comfort stations with hot showers. A wooden foot bridge connects the two areas near which is located an open-air amphitheater.

The third camping area is located between Marina Drive and the north shore of the lake. The area includes a comfort station with hot showers, 32 unpaved camping spurs and oiled circulation road. Access is provided directly from Marina Drive.

Potable water is provided by two wells located within the Ky-en Recreation Area. The water requirements for limited grounds maintenance are met by the potable water system. A sanitary dump station is located on Marina Drive and also provides potable water. The comfort station

located in the boat launching area employs a septic tank while all other sewage is transferred by means of a lift station to the 4,000 gallon treatment plant south of the Pomo Recreation Area. Each of the comfort stations has lighting and electrical outlets. While access and circulation are generally adequate, parking is often a problem. No future development is proposed that will significantly increase requirements for utilities, parking or access.

b. Lease Agreement. A concessionaire operation adjacent to the boat-launching area (see Plate 11) has been in continuous operation since 1971. In accordance with the lease agreement, a snack bar, bait shop, marine fuel station, boat storage docks (20 covered and 36 open 18' slips), 90,000 square feet of dry storage and a picnic area with 19 tables has been developed by the concessionaire. The concession facilities, along with the adjacent comfort station, parking lot and other surrounding areas are maintained by the concessionaire. The concessionaire is presently relocating the boat storage docks west of the boat launching ramp.

c. Future Development. Future development in the Ky-en Recreation Area includes a fish-cleaning sanitary facility at the boat ramp and a replacement for an existing inadequate ranger control station on Marina Drive to control access to the campgrounds.

7.07 Bu-shay (Deer) Recreation Area

a. Existing Facilities. The Bu-shay Recreation Area consists of one day-use area, four camping areas with individual campsites and three group camping areas as shown on Plate 9. Access is provided to the public by a limited two lane road which connects to State Highway 20 at the northeast corner of the project. Although this road was originally developed as a fire access road, it has been upgraded to a limited two-lane road through routine maintenance programs. Specific areas need some additional upgrading. Access to all areas is controlled at a single ranger control station located on this road.

The day-use area, known as the Mesa, consists of a large open turf area, 10 picnic units, a group shelter with a group barbecue, parking for 50 cars, comfort station, childrens play area, water supply and irrigated landscaping. Turf area adjacent to the comfort station provides informal seating for the viewing of films and interpretive programs presented by rangers.

Four campgrounds consist of 33, 31, 25 and 48 camping spurs. The camping spurs and circulation roads in the first three campgrounds are paved and those in the fourth are not. All campgrounds in this area have potable water and comfort stations with hot showers, night lighting, and electrical outlets.

Three small camping areas of 5, 11, and 17 designated campsites are set aside for group camping. These areas are reserved except on holidays when they are open on an individual first-come-first-served basis. Two of the areas (Tata and Deer Camp) are serviced by chemical toilets and the third area (Kuma) has access to a developed comfort station.

Potable water in the Bu-shay Recreation Area is provided by the wells located in the Ky-en Recreation Area. Water is pumped across the inlet and stored in a 75,000 gallon water tank located in the area's maintenance compound. Irrigation water for the Mesa turf area is drawn from the lake by means of a submersible pump. All comfort stations in the area employ septic tanks for sewage disposal. The sanitary dump station has a holding tank and must be pumped out periodically. The water at the dump station is not potable. No future development is proposed that will significantly increase requirements for utilities, parking or access.

b. Future Development. Future development in the Bu-shay Recreation Area consists of developing a fish-cleaning facility along the access road to the area. Camping spurs and circulation road of Area D will be paved as funds become available. The access road from State Highway 20 will be continually upgraded to a full two lane road as part of the routine maintenance program. Access will be adequate when the upgrading is completed.

7.08 Bita (Bear) Recreation Area:

a. Existing Development. The Bita Camping Area is located on a gently sloping abandoned vineyard of approximately 10 acres and south of the Bu-shay Recreation Area as shown on Plate 9. Access is provided from the Bu-shay Recreation Area by an oiled road. The area is comprised of a comfort station, landscaping, an unpaved 10 vehicle parking area and 32 unpaved camping spots.

North of the Bita Camping Area is a group camping area (Little Bear) which is available to the public on a reservation basis except for open camping on holiday weekends. This area has 11 designated campsites, potable water and chemical toilets.

The comfort station in the Bita Camping Area has hot showers, night lighting and electrical outlets. Sewage disposal is by means of a septic tank system. Potable and limited irrigation water is supplied by an extension of the potable water system in the Bu-shay Recreation Area. Access, circulation and parking are all adequate. No future development is proposed that will significantly increase requirements for utilities, parking or access.

b. Future Development. The camping spurs, and circulation road of the Bita Camping Area will be paved as funds become available.

7.09 Miti (Rattlesnake) Recreation Area:

Boat-access camping has been developed in the Miti Recreation Area, as shown on Plate 10, with 19 campsites and chemical toilets. No future major development is projected for the area. This area, as developed, fulfills the requirements of a primitive (Class E) campground. Public access to the area is by boat only.

7.10 Trail System:

A system of hiking trails has been developed at Lake Mendocino. In total, there are approximately 4 miles of trails with numerous footbridges with handrails for visitor safety. The trails within developed recreational areas are relatively formal with sideboards and surfacing. The trails between recreational areas are developed with native materials and are not surfaced. These trails include signs and distance markers at regular intervals. Trails between the recreation areas are shown on Plate 5. Trails for activities other than hiking are not available at Lake Mendocino.

7.11 Project Administrative Area:

The project administrative area at Lake Mendocino includes facilities for all phases of the lake's operation. Structures in this area include an administration building, a carpenter shop, an open storage building, a mechanics shop with open storage, three storage buildings and a plant starting house.

The administration building is 2,904 square feet and serves as a base of operation from which the activities of dam operation, maintenance, ranger activities, and resource management are directed.

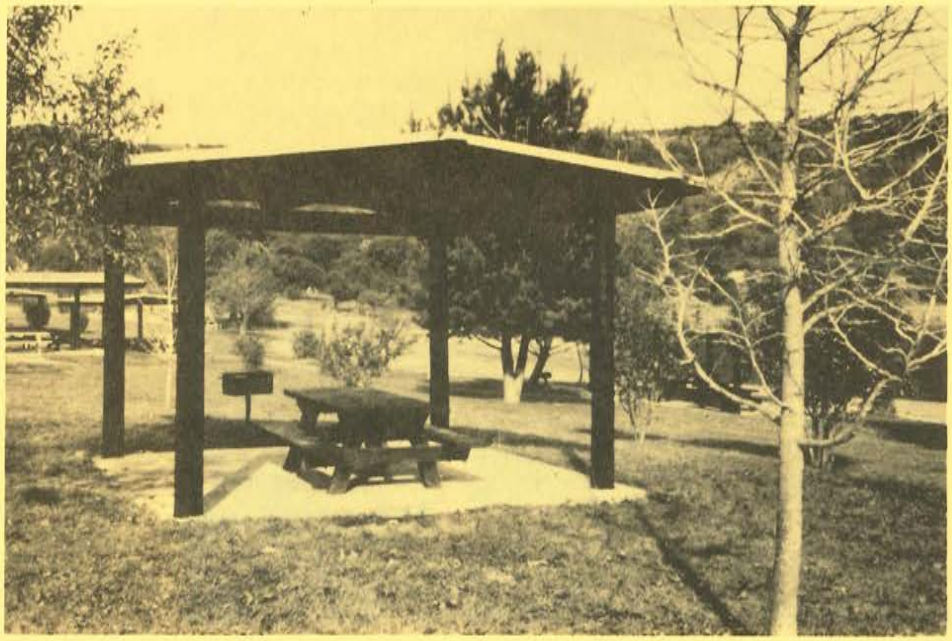
The carpenter shop is 2,904 square feet and includes a sign shop, central storage for supplies and herbicide storage.

The open storage building is 3,489 square feet and includes an inclosed paint shop and equipment cleaning facilities.

The mechanics shop with open storage is 3,344 square feet. A storage building for paint and cleaning facilities is 120 square feet, a storage building for gasoline and oil is 80 square feet, and a storage building for bulk oil is 56 square feet. The plant starting house is 570 square feet.

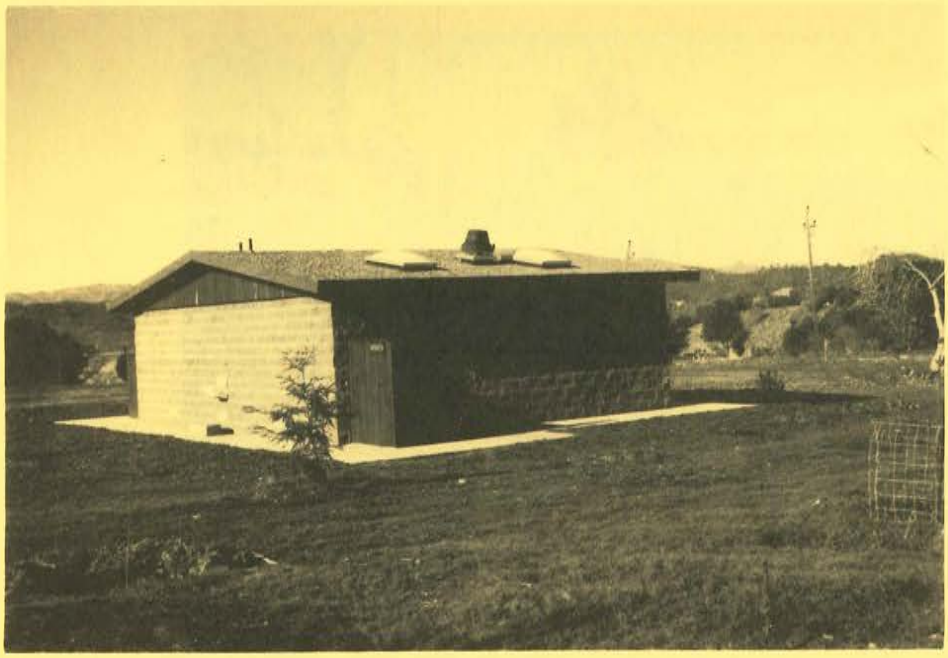
7.12 Leased Areas:

The portion of the Ky-en Recreation Area which is leased to the concessionaire is shown on Plate 11. The concessionaire's development in this area is described in paragraph 7.06 and is shown on Plate 8. Also shown on Plate 11 is another lease area south of the lake. This area of approximately 88 acres is leased for the purpose of grazing livestock. The leases are available for review through the Sacramento District Office of the Corps of Engineers, and at the Lake Mendocino project office.



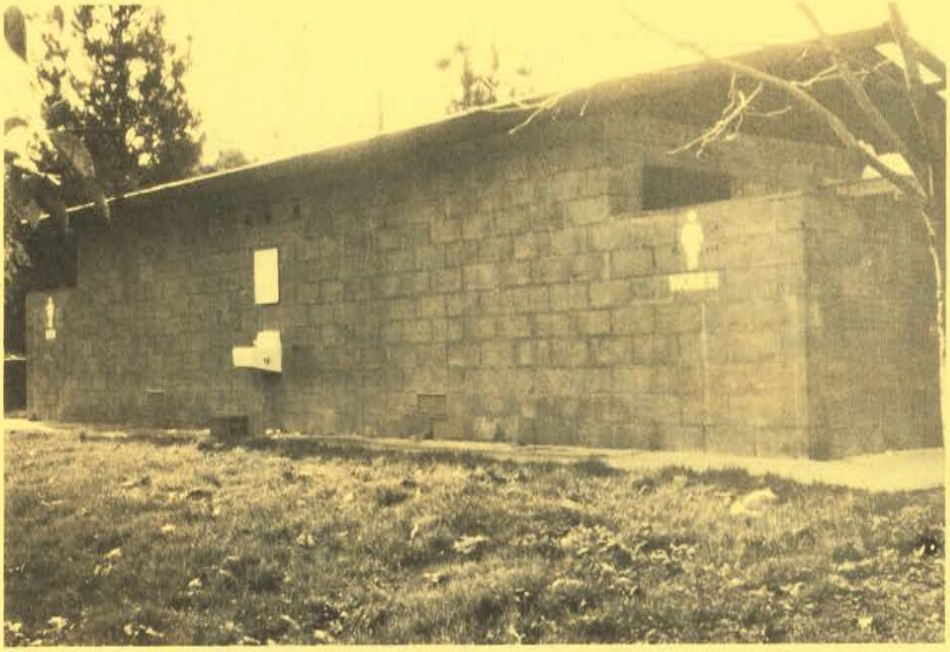
POMO AREA SINGLE PICNIC SHELTER

POMO AREA GROUP PICNIC SHELTER



BITA AREA – COMFORT STATION

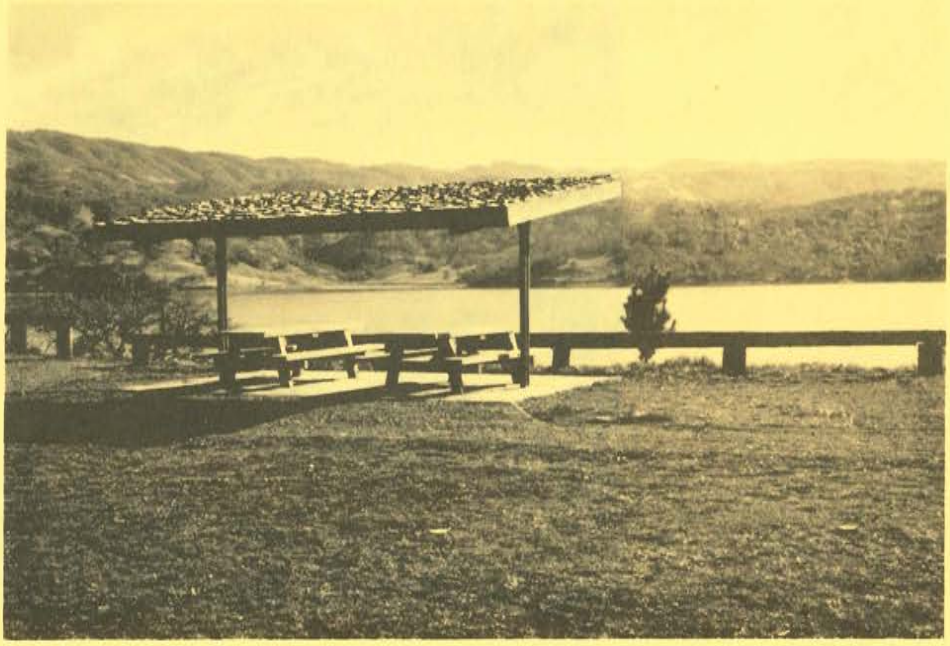
KY–EN AREA – COMFORT STATION



POMO AREA – COMFORT STATION

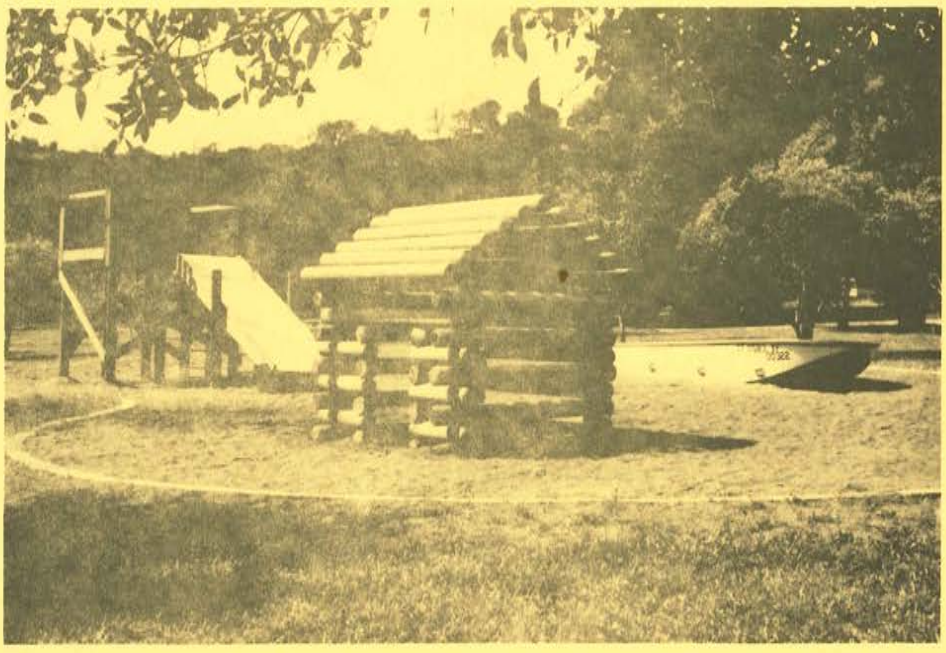
KY–EN AREA – COMFORT STATION

KY-EN AREA - GROUP PICNIC SHELTER



CHE-KA-KA AREA - SINGLE PICNIC SHELTER

SHA-DA-KAI AREA – COURTESY BOAT DOCK



POMO AREA – CHILDRENS PLAY AREA

Basis For Design

8.01 Lake Mendocino Interpretive-Cultural Center:

a. Function. The San Francisco District proposes to construct an Interpretive-Cultural Center, located on a hillside overlooking Lake Mendocino. This center will establish a recreational experience which interprets the project environment as well as the native cultural environment. The center would include a Pomo education and culture element to be administered by the Mendo-Lake Pomo Council, as well as standard elements normally included in a Corps visitor center. These elements would be designed and operated in a mutually agreeable and supportive manner.

The purpose of the Corps in establishing the center is to provide a recreational experience which interprets the project environment, its natural and human history, and the Corps' role in water resource development activities. The purpose of the Mendo-Lake Pomo Council in participating in the center is to preserve and pass on to future generations the Pomo and other Native American cultures and to interpret and present these cultures to the general public. Thus, the purposes of both parties are not only compatible but synergistic and their combination serves to provide an enhanced recreational experience to visitors.

Once this master plan is approved, the Corps of Engineers and the Mendo-Lake Pomo Council will meet to develop an agreement for use by the Council of a part of the center. The types of programs planned for that portion of the center will be related to and compatible with, the recreational experience provided by the Center as a whole. While specific programs and guidelines will be agreed upon, activities will generally include seminars, adult education classes, preparation of native foods, demonstrations, lectures and arts and crafts training. Areas, except those that will be used exclusively by the Corps or the Mendo-Lake Pomo Council such as administrative areas, the arts and crafts area and storage areas, will be available to other public groups when not in use by the Corps or the Council.

Water resource and natural and cultural environment interpretive programs will be conducted by Corps of Engineers personnel. These programs are specifically defined in a visitor center plan which is presented in Appendix A, the Resource Management Plan. Local historical societies will also be encouraged to participate with the development and use of the display areas of the center.

b. Market. The visitor population at the center will vary greatly due to the seasonal visitation of the project. The majority of the visitors will be recreation seekers who will utilize the center on a day-use seasonal basis only, while visitation from the local area will occur on a more regular basis. A small percentage of the visitors will be those passing by on Highway 101, who would most probably be attracted because of the reputation of the Center or by facility signage.

c. Coordination. On 14 May 1975, the Mendo-Lake Pomo Council and the San Francisco District entered into an agreement that provided the basis for the conceptual design of the center. As a result of this agreement, an architect-engineer firm was contracted on 30 June 1975 to submit three preliminary conceptual designs of the proposed center. Both the Corps and the Mendo-Lake Pomo Council reviewed the concepts. The concept presented in this master plan is the modified concept that was mutually decided upon by both organizations.

d. Site Layout. Public access to the center will be from the lower, eastern perimeter of the site. Parking for 50 vehicles will be provided on the lowermost bench and will be accessible from the adjacent shoreline access road in the Pomo Recreation Area. Limited staff parking for ten cars will be provided above the center with access from Marina Drive. One alternative site for a future re-creation of a traditional "roundhouse" which would be constructed of traditional materials and in traditional manner, is indicated and would be visually screened and buffered from the adjoining day-use areas by vegetation native to the region. The adjacent area to the north and across Marina Drive is reserved for the development of a nature interpretive area and will be connected to the other public use areas by a network of pedestrian paths. Pedestrian trails connect on-site facilities at the center and are related to trail systems leading to other public use areas within the vicinity. Plate 12 is the site plan for the proposed center.

e. Facility Design. The center will have a floor area of approximately 7,000 square feet and will include the following functions:

(1) Display and Lecture Area

(2) Group Meeting Room

(3) Arts and Crafts Area

(4) Pomo Cultural Office

(5) Corps Office

(6) Food Demonstration Area

(7) Restrooms

(8) Storage Room

The design of the center is a two-level concept with a circular plan. The entrance is through a linear passageway which leads directly into a central display/lecture area, and a craft area. Restrooms, a food demonstration area, a group meeting room, and a storage area are also situated on the lower level.

The upper level includes the Corps and Pomo cultural offices, a deck with views overlooking the lake and the display area. Access between each level is by means of a stairway which is situated adjacent to the upper level entrance to the staff parking area.

If and when the Lake is raised with top of dam at elevation 821, elevation 805 feet would be approximately equivalent to the 100-year event. The center will be located above this elevation. Extremely high maintenance or irreplaceable items will be located above elevation 814 feet which is the maximum probable flood level.

The architectural design of the center is influenced by and derived from the Pomo culture. The display area of the center is an adaption of the traditional roundhouse construction. The floor of the area in the center of the display and lecture area will consist of packed fine sand and will be devoted to live Pomo dance demonstrations (a full size, three-dimensional display of a typical Pomo dance will substitute during periods when live demonstrations are not scheduled). The floor area will be covered with a flush fitting platform, when the room is used for other interpretive programs.

The exterior of the building, slighty recessed into the hillside, will be surrounded by earth berms with a tunnel entrance to the first floor. This will give the effect of a Pomo roundhouse which extends partly above and below ground level. Plate 13 shows the plan and section of the proposed center.

f. Interpretive Features. Over the thousands of years that California Indians lived in the basin, they developed detailed knowledge about the use of the areas' natural resources, as well as unique cultural ways of transmitting their knowledge and expressing their relationship to the environment and each other. The interpretive program will give visitors the opportunity to see how the Indians utilized the project area, including live demonstrations of traditional aspects of Pomo culture which are still practiced, such as food preparation, basketry, dances and songs.

Eight permanent wall display cases are proposed for the center, three of which will be located in the entrance way and the remaining 5 in the museum and display area. A permanent exhibit will utilize materials which incorporate the physical and cultural aspects of the recent and past history of Coyote Valley and the immediate, surrounding region. Revolving exhibits will be developed in a manner compatible and supportive of the permanent exhibit. Space would be provided to the Mendo-Lake Pomo Council to present their own programs. A positive feature and advantage of the site of the center is that Lake Mendocino would become part of the display.

g. Landscaping. Landscaping for the center will maintain the continuity of the site with the surrounding environment by limiting the planting program to vegetation indigenous to the area, which will minimize the plant maintenance program once the plants are established. The

principal goal of the landscape plan relative to the visitor center site is the creation of a visual screen or buffer from the adjoining day-use areas. The intent of the plan is to define the activity which occurs within the center as a function separate and unique from that which occurs in the other day-use areas. Another intent is to define the outdoor spaces which are auxiliary to the center. Visual corridors from the site to the lake will be maintained.

h. Utility Requirements.

(1) General: At this stage of the design of the proposed center, only approximate sizing can be indicated.

(2) Electricity: Power will be obtained from an existing meter pole which is along Marina Drive. The existing PG&E supply lines have ample capacity to supply power and the Corps will negotiate with PG&E to replace existing transformers to meet the new load demand. The general loads required are: 150 KW at 208/120 Volts, 3 phase.

(3) Water: The water demand of the center will be approximately 2,000 gallons per day based on highest use season. Since the addition of the center would overload the existing water system, 1100 feet of 4" water line will be required to import water from the Ky-en Recreation Area to an existing 4" main in the Pomo Recreation Area. The center will require an additonal 400 feet of 4" waterline to connect to the main. The water supply will be existing wells that currently supply drinking water. The elevation of the center will require installation of a hydro-pneumatic system within the center.

(4) Sewage: The approximate volume of sewage effluent in terms of volume per unit of time will be approximately 2,000 gallons per day based on highest use season. Approximately 400 feet of 6" sewerline will be required to connect the center to an existing sewerline approximately 25 feet lower than the center. The sewerline currently in use is adequate to handle the increased flow and the sewage treatment plant in the Pomo Recreation Area has the needed capacity.

i. Roads and Parking Areas. The design of roads and parking areas will conform to the applicable sections of TM 5-822-2, 3, and 5. The top 6 inches of newly-graded subgrades are to be compacted to 95 percent of modified AASHO maximum density. Paving will consist of 1-1/2 inch bituminous concrete on a 6-inch compacted aggregate base course. The access road to the proposed center has been evaluated and it has the required additional capacity to serve the center.

8.02 Overlook Kiosks:

A canopied kiosk will be developed as an interpretive feature at the eastern end of the overlook parking area in the Che-ka-ka 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.

8.03 Ky-en Ranger Station:

The concept of the ranger control station is shown on Plate 15 of this report. This concept is similar to the existing station at the Bu-shay Recreation Area.

8.04 Fish-Cleaning Facilities:

The proposed fish-cleaning facilities will be developed similar to designs in the standard Park Practice Design Manual. The facility in the Bu-shay Recreation Area will require a holding tank for fish wastes. Waste material from the other facilities will drain directly into the lake and provide food for fish and other aquatic organisms.

8.05 Modular Comfort Station:

A modular comfort station is proposed as future development near the parking area for the boat-launching ramp in the Che-ka-ka Recreation Area. The unit will include a holding tank from which wastes will be pumped. Prefabricated designs will be evaluated in terms of capacity, water demand, and maintenance requirements and then in terms of aesthetic requirements.

8.06 Children's Play Area:

Children's play areas will be developed in both the Che-ka-ka and Pomo Recreation Areas. These play areas will be similar to the existing play areas that have been developed in the Pomo, Ky-en, and Bu-shay Recreation Areas.

Project Operation and Management

IX - PROJECT OPERATION AND MANAGEMENT

9.01 Operational Appendices:

The Army Corps of Engineers administers Lake Mendocino for the purposes of flood control, water supply, streamflow regulation and recreation. Project lands are managed to obtain maximum sustained public benefits from the recreational resources of the project area. The plan for project operation, including management objectives and programs, is presented in five appendices to this master plan. Brief descriptions of these appendices are presented in the following paragraphs.

9.02 Resource Management Plan:

The Resource Management Plan is a working guideline for the Park Manager and staff concerning the purposes, operation and accounting of all facilities at Lake Mendocino. Topics included are maintenance of recreational resources, water level fluctuation, land acquisition, management and duties of staff, the user fee program, enforcement of Title 36, visitor center operation, interpretation and pest control. This plan is presented as Appendix A.

9.03 Forest Management Plan:

The purpose of the Forest Management Plan is to increase the value of reservoir lands for recreation and wildlife and to promote natural ecological conditions. The plan reviews the existing vegetation characteristics of the area and is an implementional plan to preserve the resources. This plan is presented as Appendix B.

9.04 Fire Protection Plan:

The Fire Protection Plan provides guidance regarding the Corps responsibility for mutual assistance and support of fire suppression on Corps property, with responsible City, State and fire Districts. This plan is presented as Appendix C.

9.05 Fish and Wildlife Management Plan:

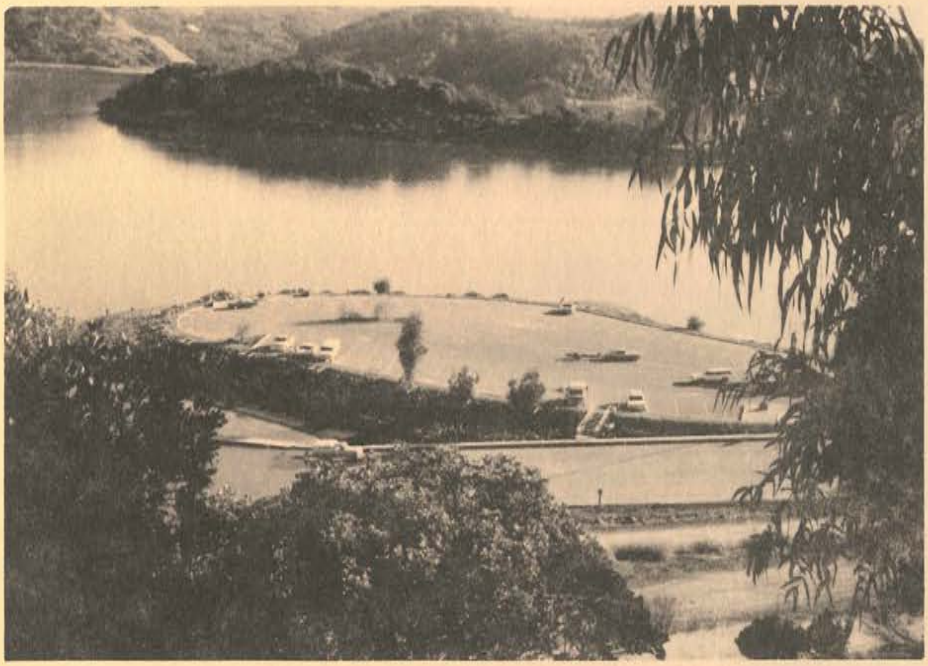
The Fish and Wildlife Management Plan will implement Section 3 of the Fish and Wildlife Coordination Act (PL 85-624) which provides for conservation, maintenance and management of fish and wildlife resources and wildlife habitat. The plan includes major species being managed, wildlife habitat maintenance and enhancement plans, and coordinated efforts with other agencies. This plan is presented as Appendix D.

9.06 Project Safety Plan:

The Project Safety Plan identifies and proposes precautionary action to be observed concerning such areas as maintenance, visitor protection, equipment operation, construction, and office operation. The plan identifies hazardous situations and presents programs which promote the safe and healthful use of the shoreline and recreation areas. This plan is presented as Appendix E.

9.07 Lakeshore Management Plan:

In accordance with ER 1130-2-406, dated 13 December 1974, a Lakeshore Management Plan for Lake Mendocino is not necessary. A statement of policy concerning the District guidelines of not allowing private facilities on the lake is included as Appendix F.



Cost Estimates

X - COST ESTIMATES

10.01 Future Development:

Estimates of the first cost of proposed future development were estimated using December 1975 price levels for similar work in the Ukiah area. A cost breakdown by recreation area for the proposed future development is presented in Table 5. A breakdown of the estimated costs associated with the proposed visitor center is presented in Table 6. No chronology of development is proposed since it will be governed entirely by the availability of funds.

10.02 Operation, Maintenance and Replacement:

The estimated annual operation, maintenance and replacement costs for each of the five years covered by this master plan are presented in Table 7. These estimates reflect the development and management proposals presented in this master plan.

TABLE 5

COST ESTIMATES FOR FUTURE DEVELOPMENT
(Dec 1975 Cost Level)

Description	Quantity	Unit	Unit Price	Amount
Sho-da-kai Recreation Area				
	-	-	-	-
Che-ka-ka Recreation Area				
Fish cleaning facility	1	Job	(Lump Sum)	6,500
Paving	1	Job	L.S.	15,500
Play area	1	Job	L.S.	2,400
Overlook Kiosk	1	Job	L.S.	5,000
Modular Comfort Station	1	Job	L.S.	45,000
			Subtotal	74,400
Pomo Recreation Area (Not including the Interpretive-Cultural Center Complex)				
Play area	1	Job	L.S.	2,400
Ky-en Recreation Area				
Fish cleaning facility	1	Job	L.S.	6,500
Ranger station	1	Job	L.S	31,000
			Subtotal	37,500
Bu-shay Recreation Area				
Fish cleaning facility	1	Job	L.S.	6,200
Paving	1	Job	L.S.	23,000
			Subtotal	29,000
Bita Recreation Area				
Paving	1	Job	L.S.	21,500
Miti Recreation Area				
	-	-	-	-
			SUBTOTAL	165,000
			E&D (20%)	33,000
			S&A (8%)	12,000
			E&D (20%)	47,000
			Interpretative-Cultural Center Complex (See Table 6)	720,000
			Interpretative Materials	50,000
			TOTAL	980,000

TABLE 6

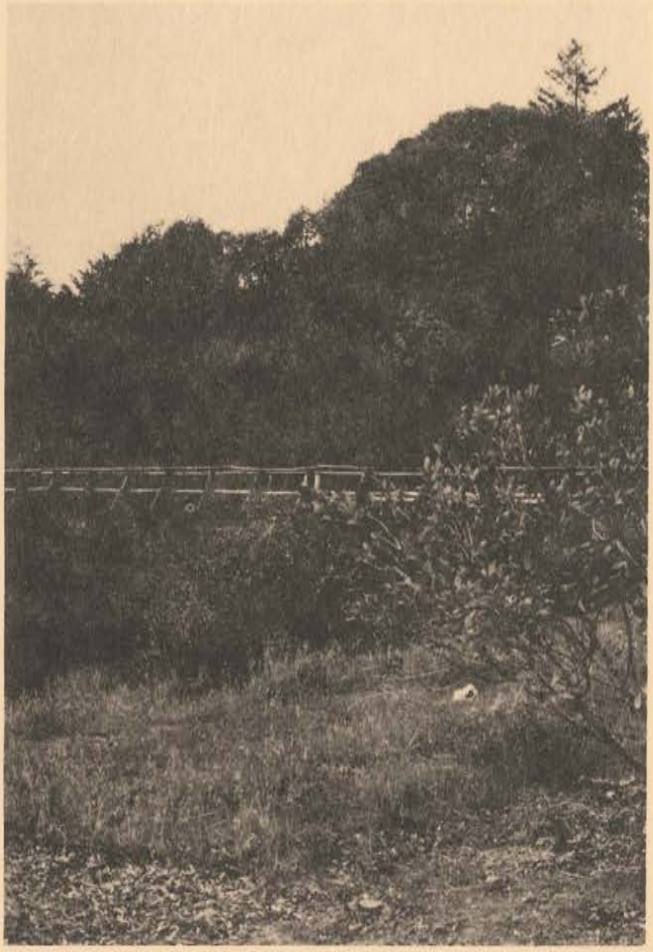
COST ESTIMATE
LAKE MENDOCINO INTERPRETIVE-CULTURAL
CENTER COMPLEX

Description	Quantity	Unit Price	Amount (Including Contingencies)
Building	1 Job	L.S. (Lump Sum)	$420,000
Parking Areas Upper and Lower and Access Roads)	1 Job	L.S.	42,000
Water Supply	1 Job	L.S.	24,000
Electrical Supply	1 Job	L.S.	6,000
Landscaping	1 Job	L.S.	12,000
Furnishings	1 Job	L.S.	36,000
Sewage System (Includes Service lines and flood-proofing existing treatment plant)	1 Job	L.S.	25,000
		Subtotal	$565,000
		E&D (20%)	110,000
		S&A (8%)	45,000
		TOTAL	$720,000

TABLE 7

OPERATIONS AND MAINTENANCE
ANNUAL ESTIMATES

	FY 1977	1978	1979	1980	1981
Operations	612,000	612,000	643,000	675,000	709,000
Interpretive-Cultural Center Increase	_____	26,000	27,000	28,000	29,000
Sub-total	612,000	638,000	670,000	703,000	738,000
Maintenance	273,000	273,000	287,000	301,000	316,000
Interpretive-Cultural Center Increase	_____	58,000	61,000	64,000	67,000
Sub-total	273,000	331,000	348,000	365,000	383,000
TOTAL	885,000	969,000	1,018,000	1,068,000	1,121,000



Environmental Assessment

XI - ENVIRONMENTAL ASSESSMENT

11.01 Assessment Requirements:

Pursuant to the requirements of NEPA, District Engineers are to make an environmental assessment of all projects in an operation and maintenance status to determine the need for an environmental statement. The assessment includes a project description, an inventory of environmental resources and the basis and reasons for such a determination. Other sections in this master plan and accompanying appendices include a detailed description of the project and its operation and an inventory of environmental resources. The determination as to whether an environmental statement is required, along with the basis and reasons for this determination, are presented in the paragraphs that follow.

11.02 Operations and Maintenance:

The continuation of the operation of Lake Mendocino will provide flood protection afforded by the reservoir, necessary water supply and streamflow regulation, and needed recreational opportunities.

Flood control and water supply are controlled through reservoir regulation. Normal reservoir drawdown does not preclude the use of recreation facilities during the recreation season. There are no substantial environmental conflicts in reservoir regulation since no environmental benefits are sacrificed for other environmental benefits or economic considerations. Turbidity which occurs downstream of the dam is an impact caused by the design of the outlet works rather than an impact of operation. Operation for recreation is concerned with providing and maintaining recreational opportunities.

The short term adverse impacts from noise, traffic disturbance and public inconvenience associated with maintenance work are insignificant compared to the long-term adverse impacts of not performing the maintenance work.

11.03 Proposed Construction:

The only major item of new construction at Lake Mendocino is the proposed interpretive-cultural center for which a separate environmental assessment was placed in the District files in February 1975. In the assessment, it was determined that the social and economic considerations outweigh the ecological loss associated with the lands on which the interpretive-cultural center will be developed. The action will preserve the historical background of the project lands and educate visitors concerning the culture of the Native Pomo Indians. The conclusion of the assessment is that no environmental statement would be required for the center.

Other proposed construction included in this master plan includes relatively minor actions improving existing recreational facilities. The impacts of these are similar in scope and magnitude to those resulting from project maintenance works.

11.04 Alternatives:

A possible alternative action is to discontinue the operation and performance of maintenance work. This alternative would permit the deterioration of existing structures, facilities and roads. It would also be contradictory to the Corps responsibility to furnish the necessary recreational opportunities that partially satisfy existing needs as well as to provide flood control and water supply. Partial discontinuance of operation and maintenance would not have a positive effect upon the natural setting in the local area, nor would the human environment be served. The complete discontinuance of operation and maintenance is not a realistic alternative since the dam exists and pool heights must be controlled.

The Corps is now conducting a study of the Russian River Basin which is expected to be completed in 1979. As a result of this study, recommendations may be made to change the operation of Lake Mendocino. Prior to implementation, an environmental assessment will be made concerning any changes in operation and an environmental statement will be required if the proposed changes cause any significant impacts.

11.05 Conclusions and Recommendations:

Neither the continued operation, maintenance work, nor the proposed construction as described in this master plan would result in significant effects upon the local environment. Existing conditions will not change as a result of continued operation and reservoir regulation. All work considered in this master plan involves maintaining and improving the existing recreational facilities. Short-term effects, such as increased noise and traffic disruption related to the various alternatives would be minor. The economic and social effects have been considered and analysis indicates no significant adverse effect on the quality of the human environment will result from the activities. The activities can be categorized as actions for which no environmental statement would be required in accordance with paragraph 4.b. (2), ER 1105-2-507, dated 15 April 1974.

Conclusions

XII - CONCLUSIONS

12.01 Conclusions:

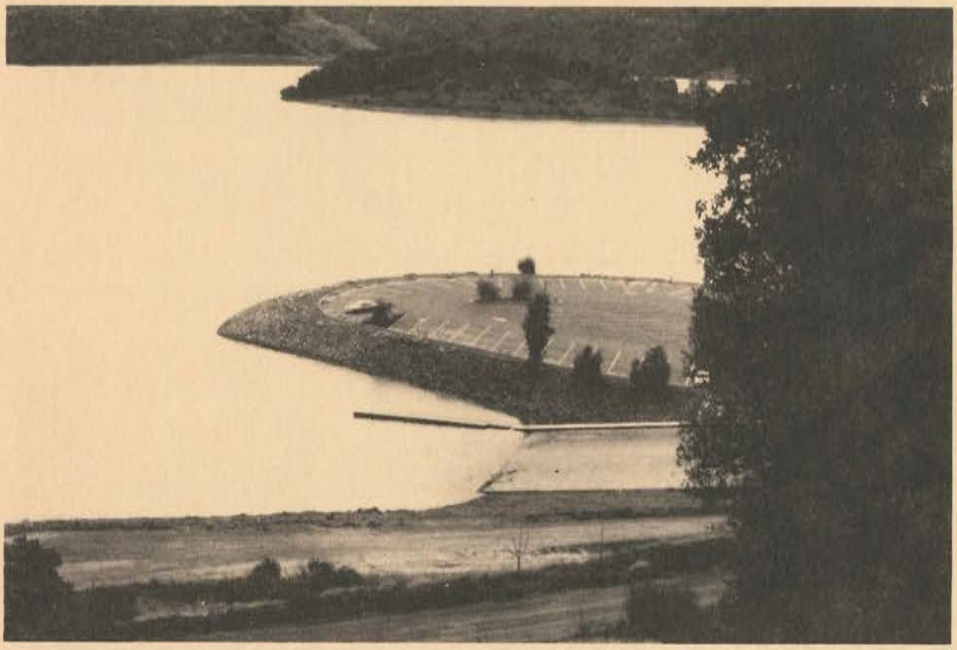
Lake Mendocino provides for intensive recreational uses and still functions as a flood control and water conservation project. This master plan presents an overall view of the existing and planned recreational development of the Lake Mendocino project area. The progressive and orderly implementation of this master plan would make possible the maximum practical utilization of lands and resources of the project and accomplish the following objectives.

Maintain the primary purposes of flood control and water supply and provide optimum use of the project lands.

Preserve and enhance the natural and scenic quality of the project area.

Meet some of the recreational and open space needs of the communities within the Ukiah area and meet to a limited extent some of the regional recreational needs of the Sonoma County and San Francisco Bay areas.

Reorient the project from an emphasis on construction of facilities to an emphasis on providing improved visitor services.

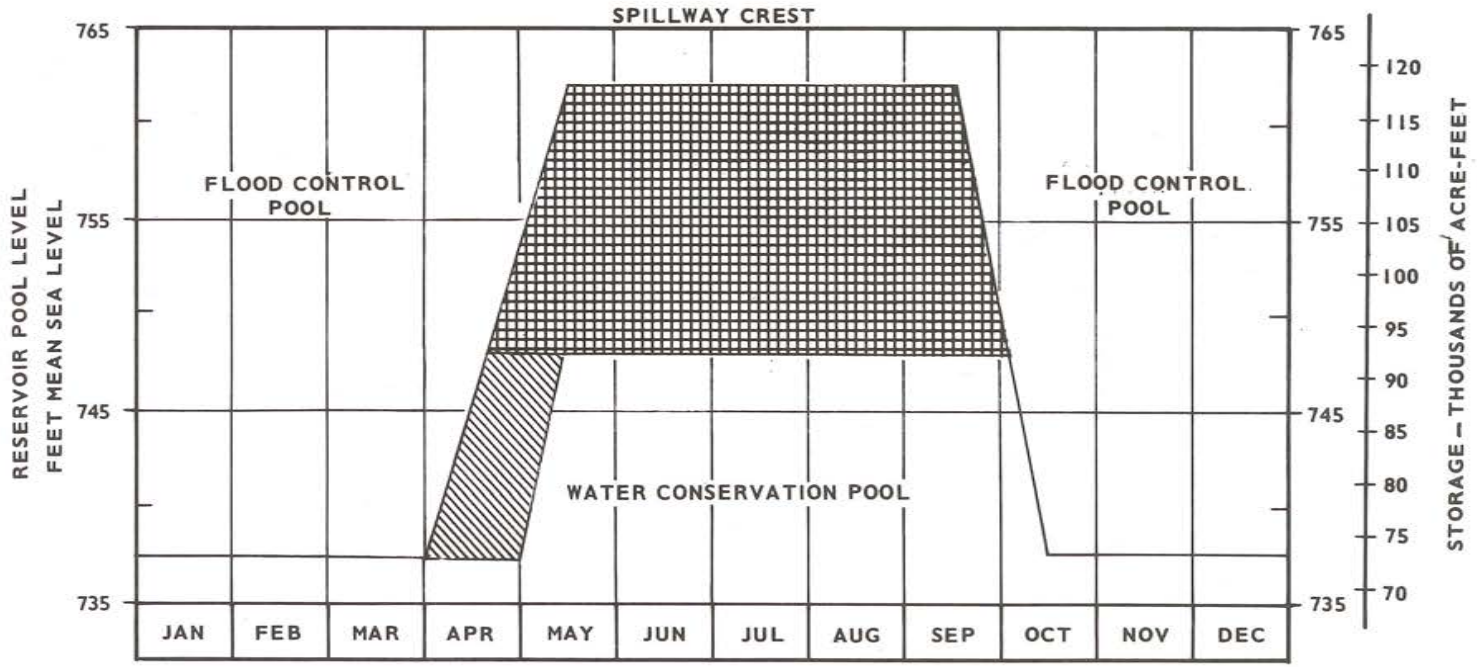


Recommendations

XIII - RECOMMENDATIONS

13.01 Recommendations:

It is recommended that this master plan for Lake Mendocino be approved for the orderly development and management of the project area. It will serve as a guide in preparing construction drawings and specifications for future development which will provide recreational opportunities for public enjoyment. It will also serve as a guide for public-oriented resource management programs.



RELEASE OF FLOOD CONTROL STORAGE FOR WATER CONSERVATION USE IN THIS ZONE TO BE DETERMINED BY RESERVOIR REGULATION UNIT, BASED ON CONDITIONS AFTER APRIL 1.

WATER CONSERVATION STORAGE IN THIS ZONE TO BE USED ONLY IF NEEDED. RESERVOIR POOL LEVELS ABOVE ELEVATION 748 MEAN SEA LEVEL, DURING THE RECREATION SEASON, CURTAILS RECREATIONAL USES OF LAKE MENDOCINO.

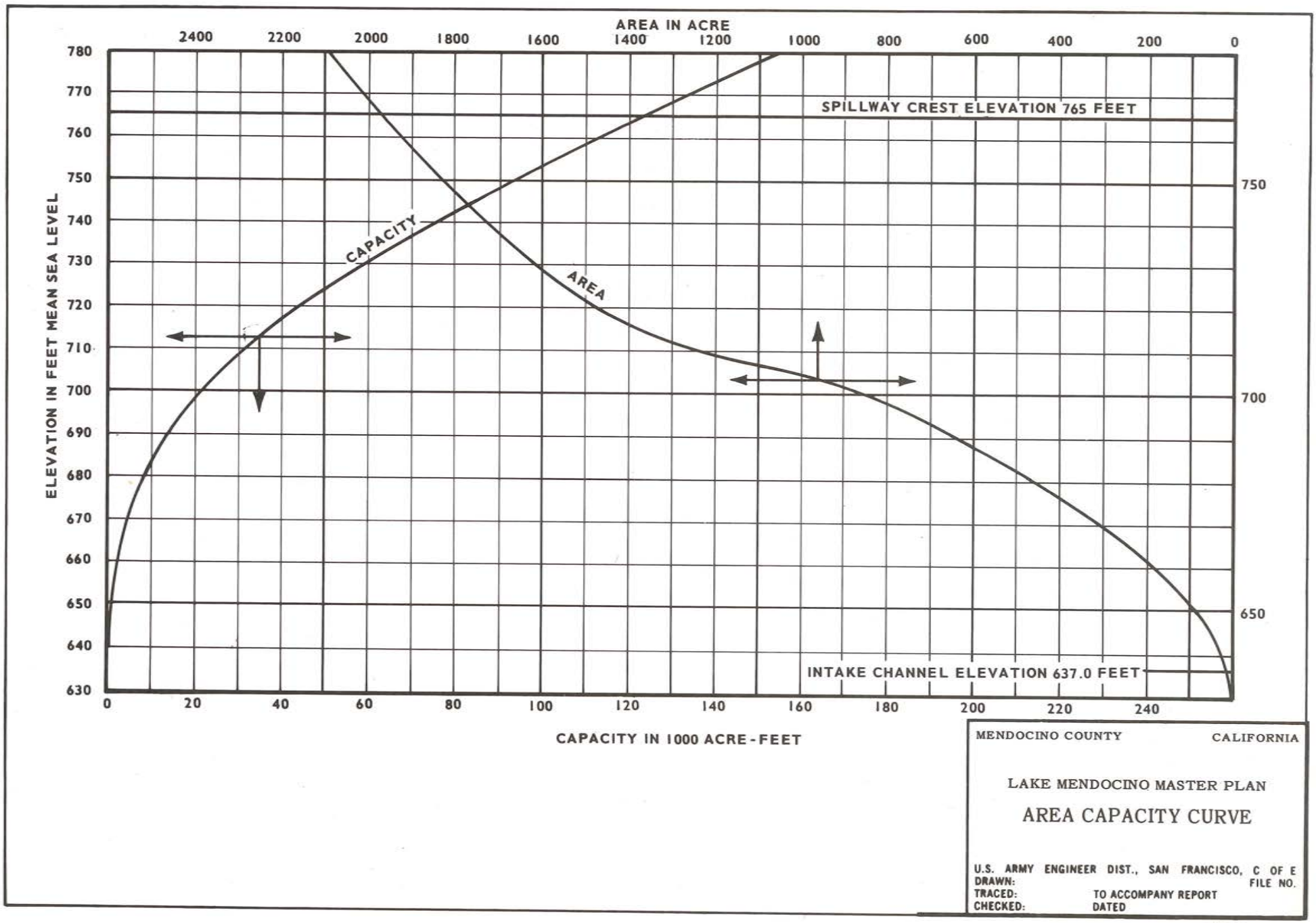
MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

RULE CURVE

U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C OF E
DRAWN: FILE NO.
TRACED: TO ACCOMPANY REPORT
CHECKED: DATED

PLATE 1



MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

AREA CAPACITY CURVE

U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C OF E
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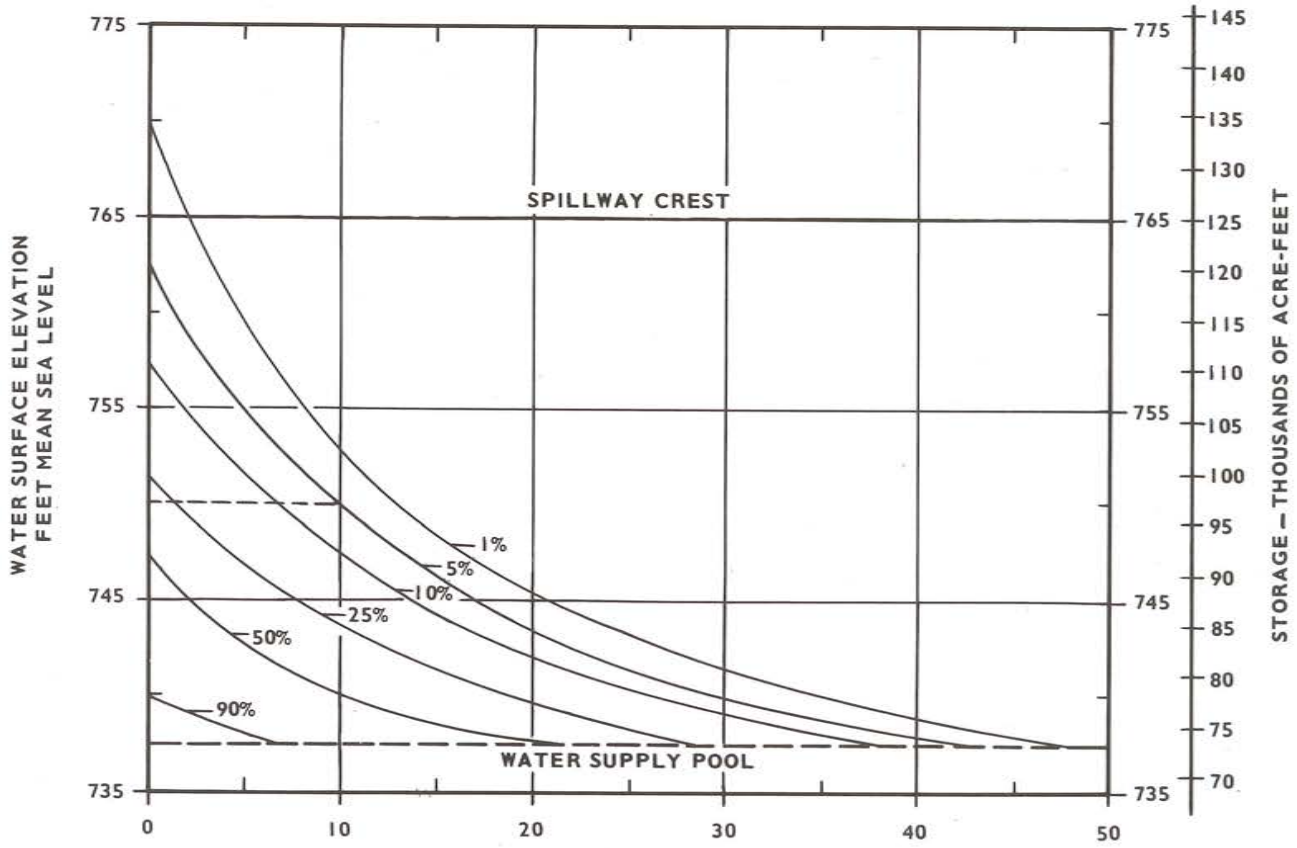
CHECKED: DATED

PLATE 2



DAYS RESERVOIR WATER SURFACE ABOVE GIVEN ELEVATION – OCTOBER 15 TO APRIL 1.

NOTE:

PARAMETER IS PERCENTAGE OF YEARS THAT THE RESERVOIR STAGE IS GREATER THAN THE GIVEN ELEVATION FOR THE GIVEN NUMBER OF DAYS. THIS TABULATION COVERS ONLY STORAGE IN THE FLOOD CONTROL POOL AND IS BASED ON DATA FROM FROM THE 1940–1975 PERIOD OF RECORD. ULTIMATE WATER SUPPLY DEMAND CONDITIONS WERE ASSUMED TO EXIST THOUGHOUT THE PERIOD CONSIDERED.

EXAMPLE:

AS SHOWN BY THE DOTTED LINE, A RESERVOIR WATER SURFACE ELEVATION ABOVE 750 FEET MSL FOR TEN DAYS COULD BE EXPECTED TO OCCUR IN 5% OF YEARS.

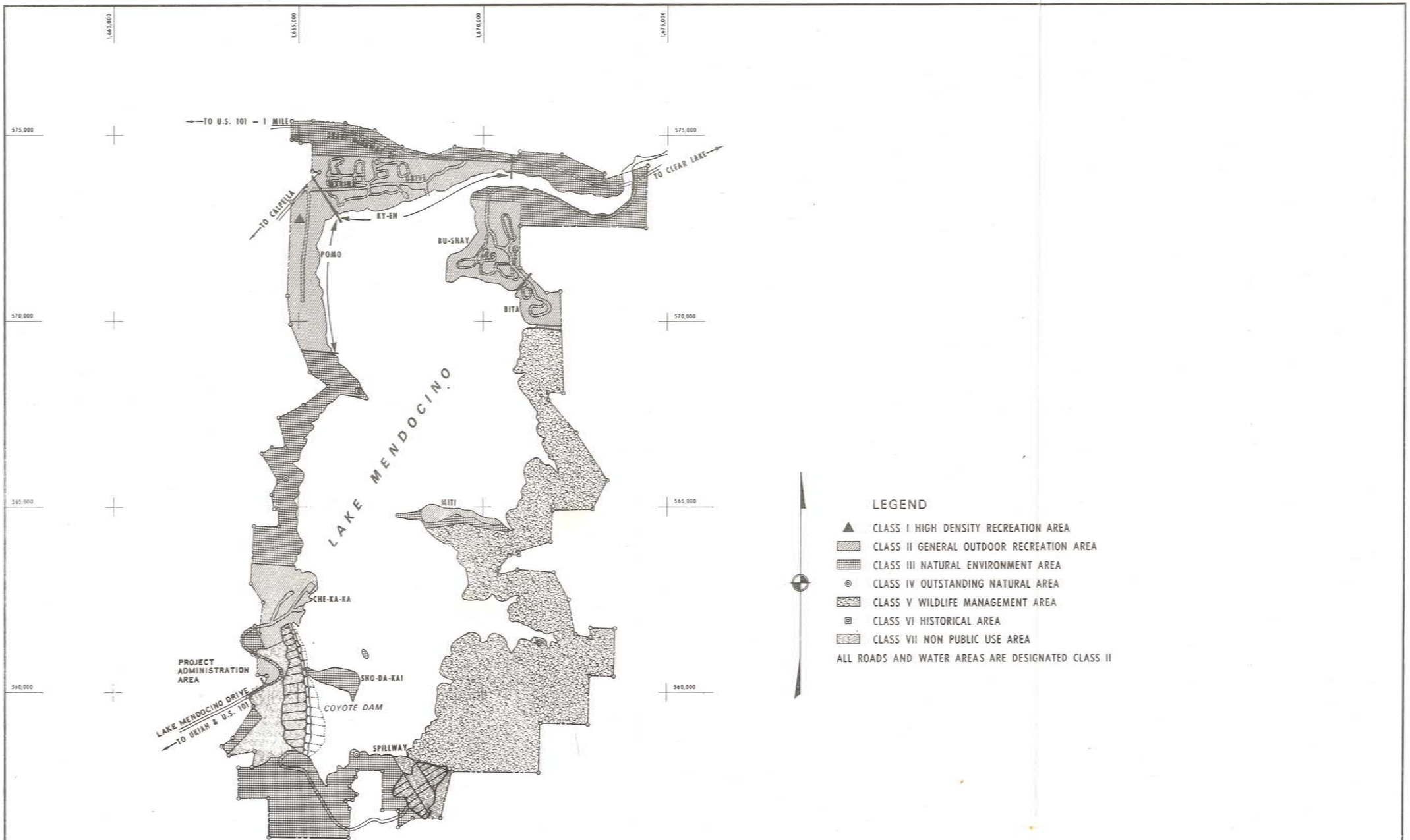
MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

DRAWDOWN FREQUENCY CURVE

U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C OF E
DRAWN: FILE NO.
TRACED: TO ACCOMPANY REPORT
CHECKED: DATED

PLATE 3



U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
CHECKED BY:
SUBMITTED:
CHIEF, CIVIL DESIGN SECT
APPROVAL RECOMMENDED:
CHIEF, DESIGN BRANCH
APPROVED:
DATE:
CHIEF, ENGINEERING DIVISION

MENDOCINO COUNTY CALIFORNIA

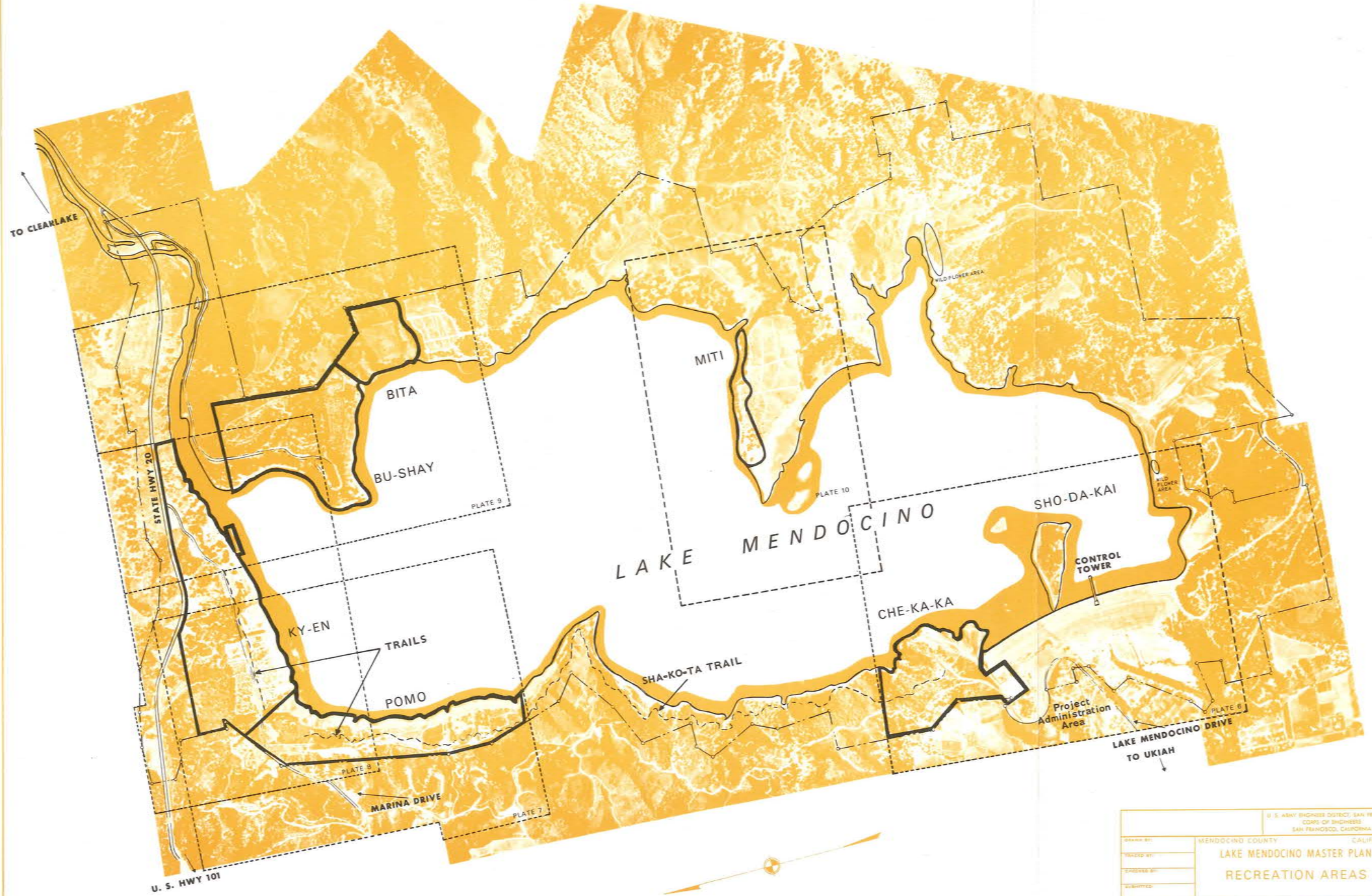
LAKE MENDOCINO MASTER PLAN

LAND CLASSIFICATION MAP

PREPARED UNDER THE DIRECTION OF
HENRY A. FLERTZHEIM, JR.
COLONEL, C.E., DISTRICT ENGINEER

SCALE:
JOB NO.
DRAWING NUMBER
SHEET

PLATE 4



U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

RECREATION AREAS

APPROVAL RECOMMENDED | APPROVED | DATE

PREPARED UNDER THE DIRECTION OF
HERBERT A. PLEKTZHEIM, JR.
COLONEL, C.E., DISTRICT ENGINEER

SCALE: JOB NO.
DRAWING NUMBER
SHEET

PLATE 5

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

CHE-KA-KA RECREATION AREA

APPROVAL RECOMMENDED: APPROVED: DATE:

PROGRESS UNDER THE DIRECTION OF

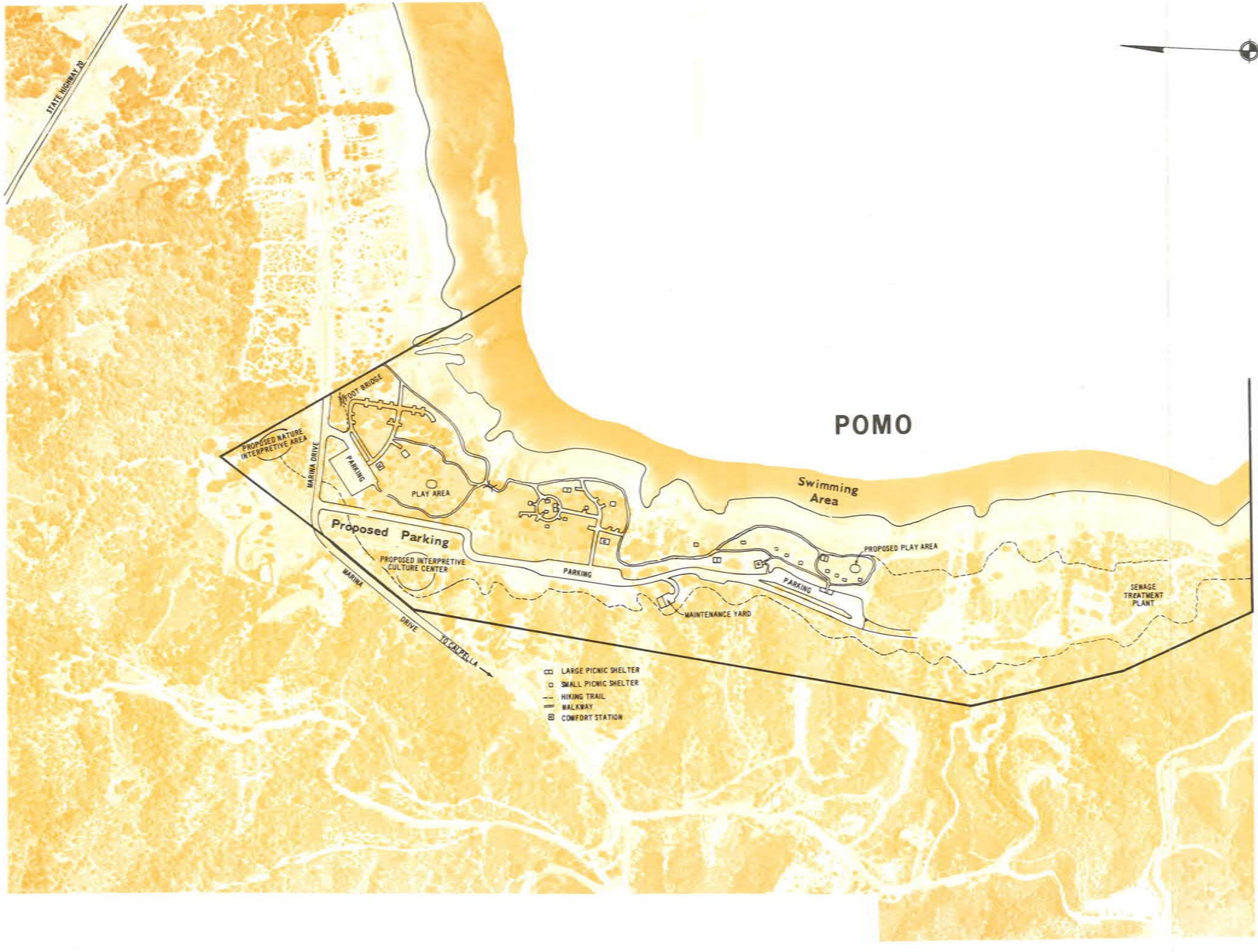
COLONEL, C.E., DISTRICT ENGINEER

SCALE: JOB NO.

DRAWING NUMBER

SHEET

PLATE 6



U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:
APPROVAL RECOMMENDED:
APPROVED:
DATE:
PREPARED UNDER THE DIRECTION OF:
COLONEL, C.E., DISTRICT ENGINEER

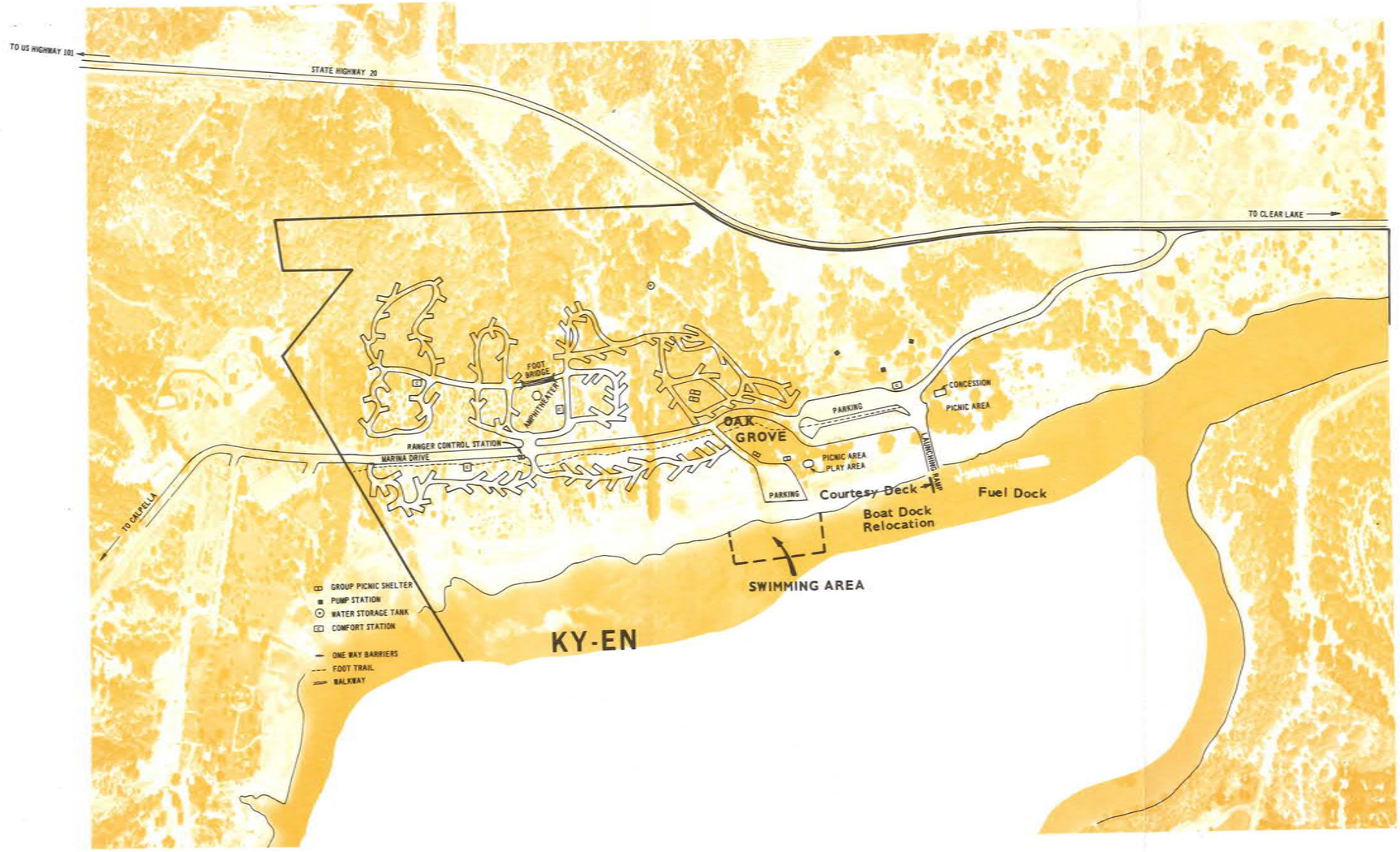
MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

POMO RECREATION AREA

SCALE:
JOB NO.
DRAWING NUMBER
SHEET

PLATE 7



U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

KY-EN RECREATION AREA

APPROVAL RECOMMENDED: APPROVED: DATE:

PREPARED UNDER THE DIRECTION OF

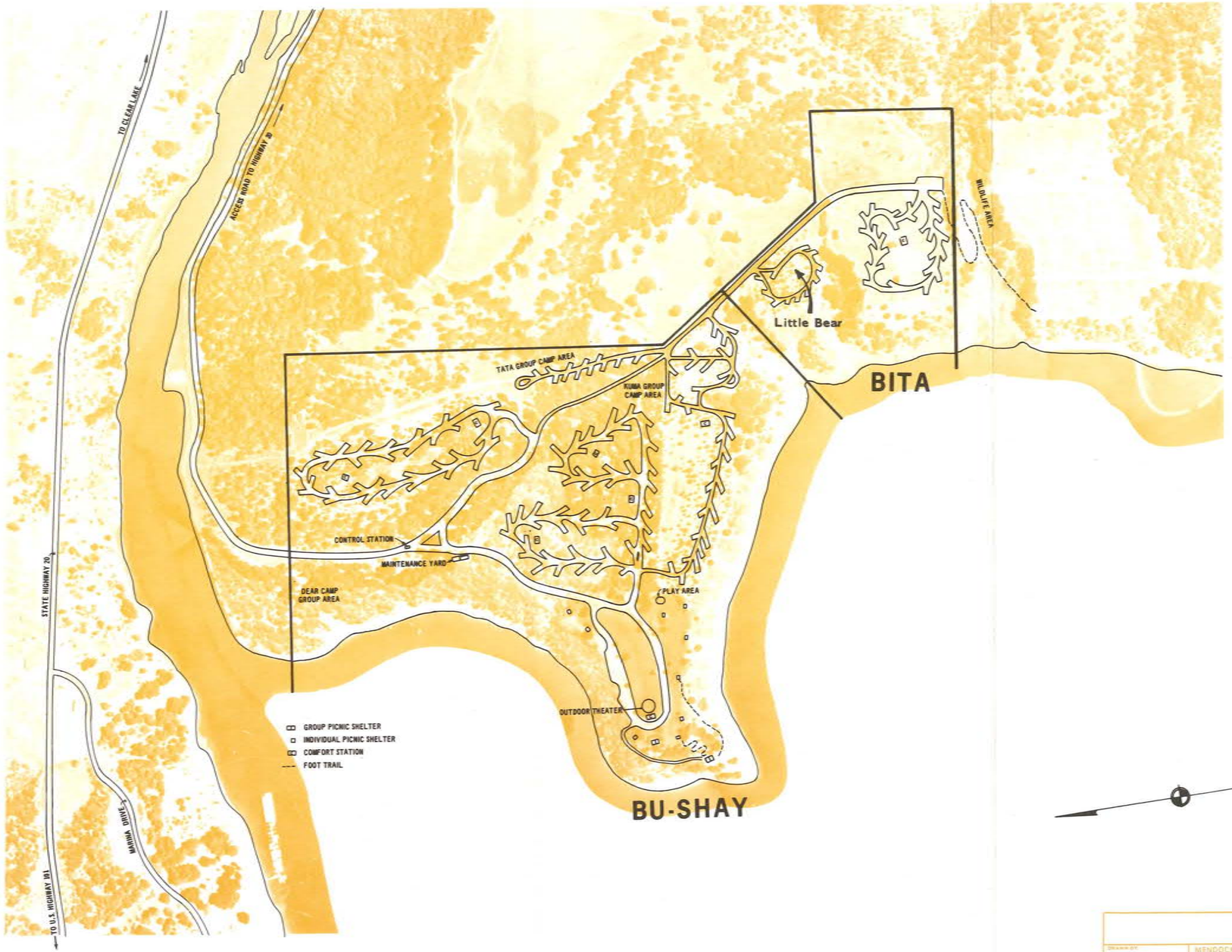
COLONEL, C.E., DISTRICT ENGINEER

SCALE: JOB NO.

DRAWING NUMBER

SHEET

PLATE 8



GRAPHIC SCALE

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

BU-SHAY & BITA RECREATION AREAS

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:
APPROVAL RECOMMENDED:
APPROVED:
DATE:
PREPARED UNDER THE DIRECTION OF
COLONEL, C.E. DISTRICT ENGINEER
SCALE:
JOB NO.
DRAWING NUMBER
SHEET

PLATE 9

MITI

9 - 19 - 75

R.R. 6-3

19 BOAT ACCESS CAMPSITES

FIRE RING

200' 0' 100' 400' 600'

GRAPHIC SCALE

REVISIONS

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

MENDOCINO COUNTY CALIFORNIA

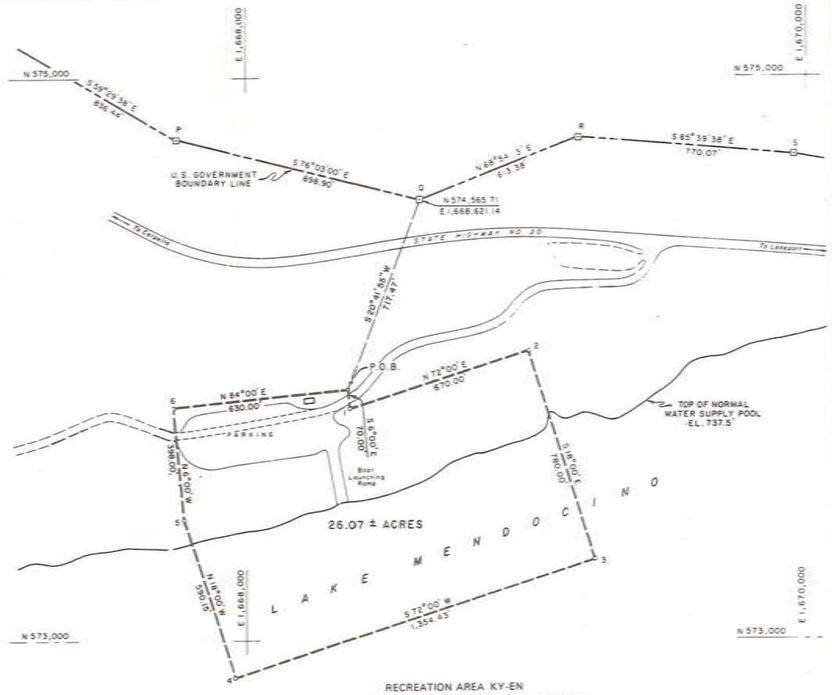
LAKE MENDOCINO MASTER PLAN

MITI RECREATION AREA

PREPARED UNDER THE DIRECTION OF
W. A. FLEETWOOD, JR.
COLONEL, CE DISTRICT ENGINEER

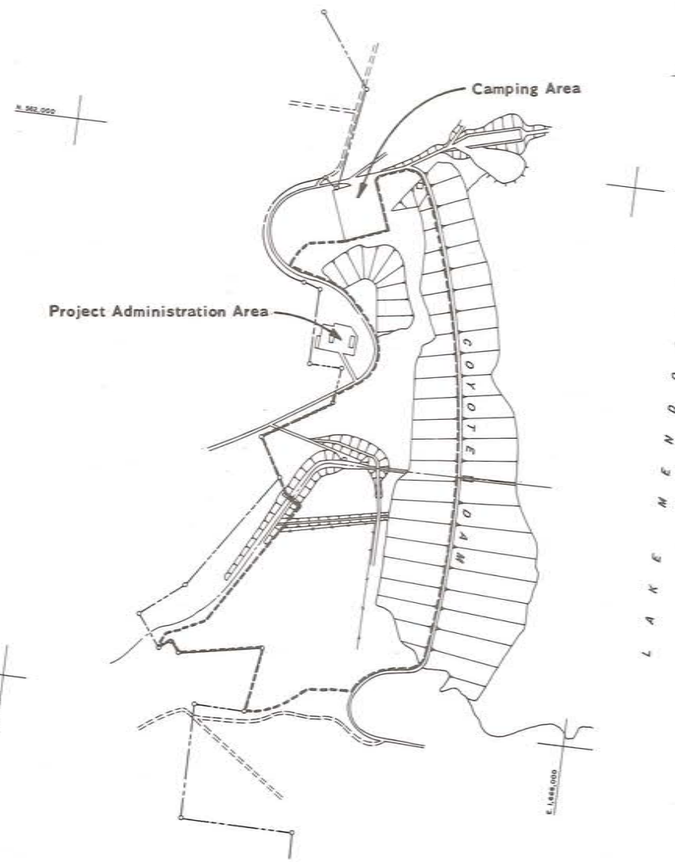
DRAWING NUMBER

PLATE 10



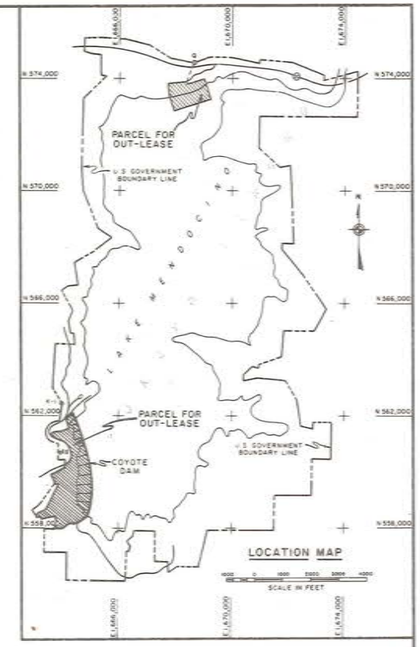
RECREATION AREA KY-EN
PARCEL OF LAND FOR OUT-LEASE

200 0 200 400 600 800
SCALE IN FEET



RECREATION AREA CHE-KA-KA
PARCEL OF LAND FOR OUT-LEASE

400 0 400 800 1200 1600 2000
SCALE IN FEET



LEGEND

- U.S. GOVERNMENT BOUNDARY LINE
- BOUNDARY OF PARCEL FOR OUT-LEASE
- ◎ BOUNDARY LINE MONUMENT - STD C OF E. DISK
- ⊡ BOUNDARY LINE MONUMENT - STATE OF CALIF., DIV. OF HIGHWAYS
- △ C OF E. TRIANGULATION STATION

NOTE:

1. PLANE GRID, BEARINGS, AND COORDINATES ARE BASED ON THE STATE OF CALIFORNIA COORDINATE SYSTEM (LAMBERT CONFORMAL PROJECTION), ZONE III, CALIFORNIA, AS DESCRIBED IN SPECIAL PUBLICATION NO 235, PUBLISHED BY THE U.S. COAST AND GEODETIC SURVEY.
2. REFERENCE BENCH MARK IS "EAST LORENZO", A STANDARD C OF E. DISK SET IN CONCRETE, LOCATED 23 FEET SOUTH OF THE EAST CORNER OF THE OVERLOOK AREA, ELEVATION 866.46 FEET, MEAN SEA LEVEL.
3. VERTICAL DATUM IS MEAN SEA LEVEL, 1929 GENERAL ADJUSTMENT.

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

PARCELS OF LAND FOR OUT-LEASE

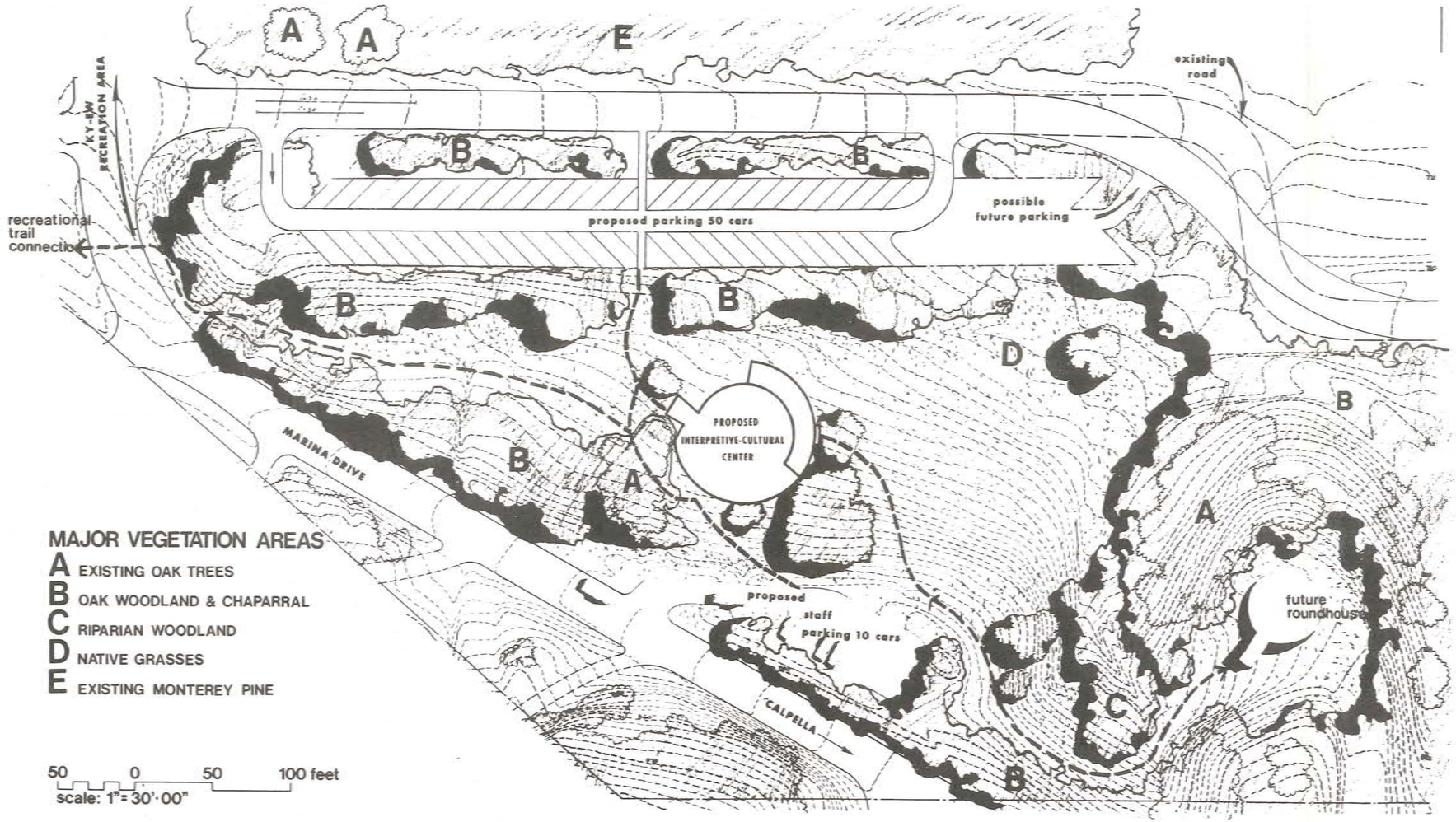
APPROVAL RECOMMENDED: (CHIEF OF REAL ESTATE DIV.)
APPROVED: (CHIEF, ENGINEERING DIVISION) DATE:

PREPARED UNDER THE DIRECTION OF
COLONEL, C.E., DISTRICT ENGINEER

SCALE: JOB NO.
DRAWING NUMBER
SHEET

PLATE 11

POMO RECREATION AREA



SITE PLAN

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

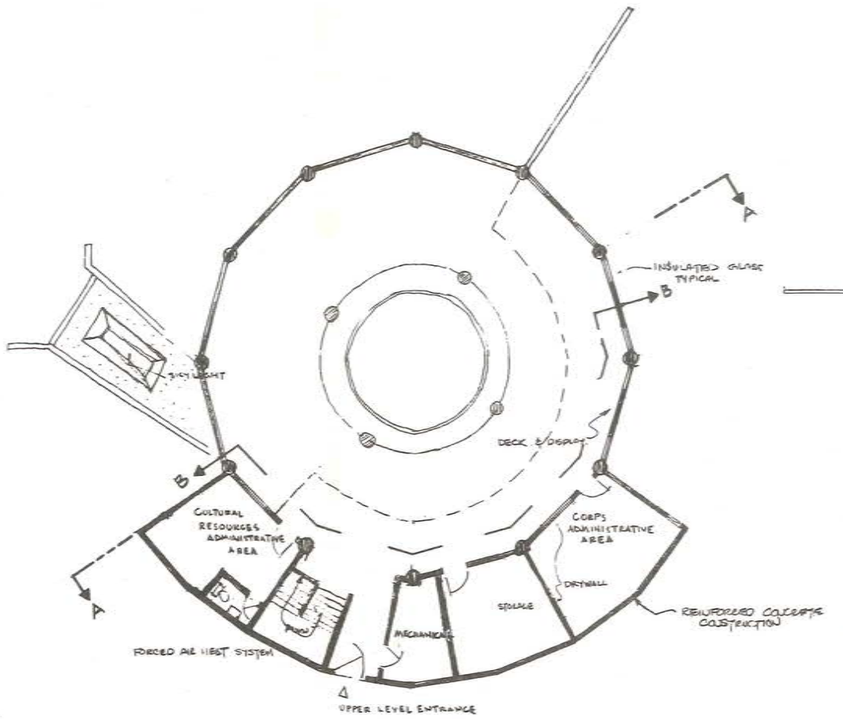
MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN
LAKE MENDOCINO
INTERPRETIVE-CULTURAL
CENTER

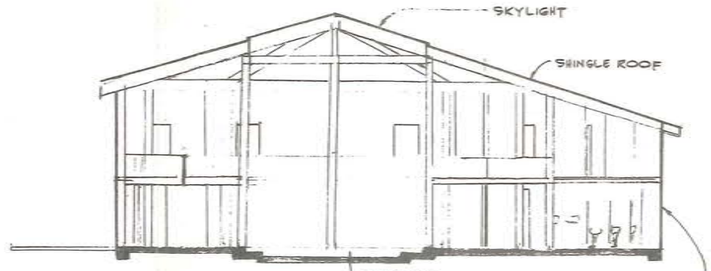
APPROVAL RECOMMENDED: APPROVED: DATE:

PREPARED UNDER THE DIRECTION OF
COLONEL, C.E., DISTRICT ENGINEER

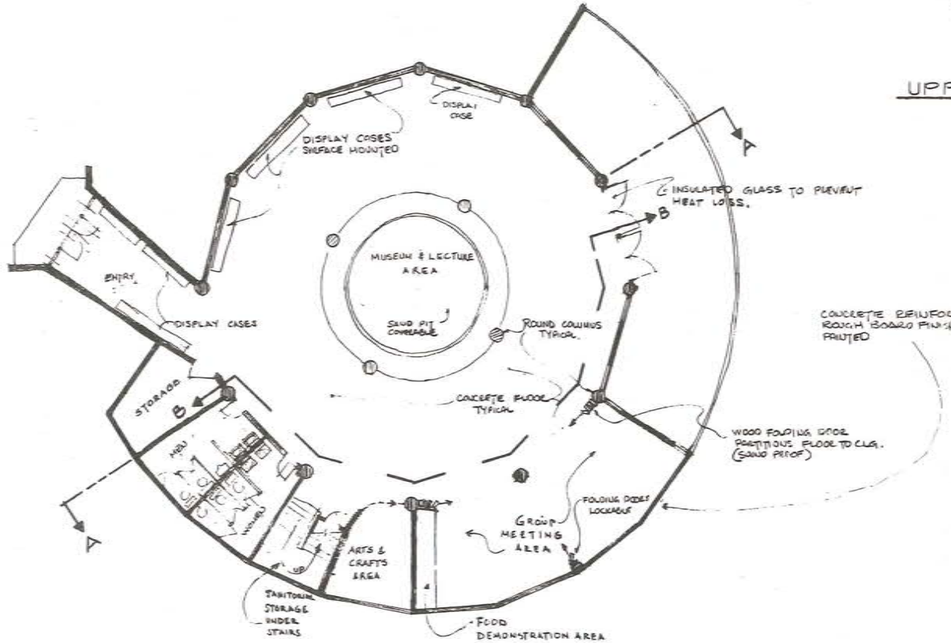
SCALE: JOB No.
DRAWING NUMBER
SHEET



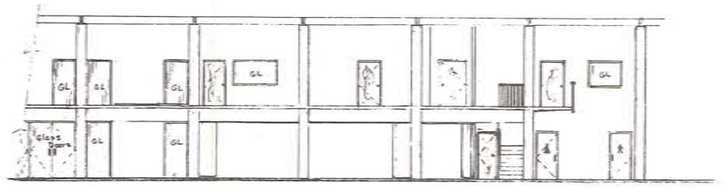
UPPER LEVEL PLAN



SECTION - ELEVATION A-A



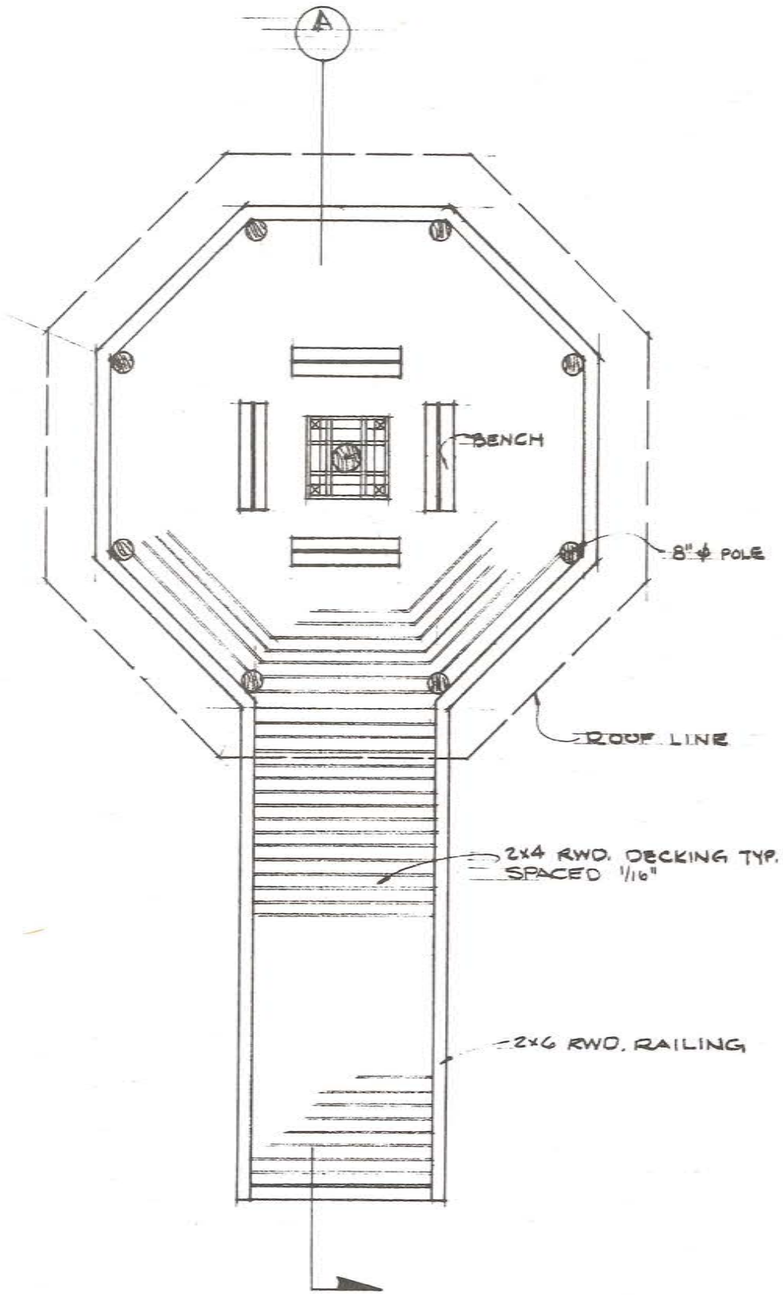
LOWER LEVEL PLAN



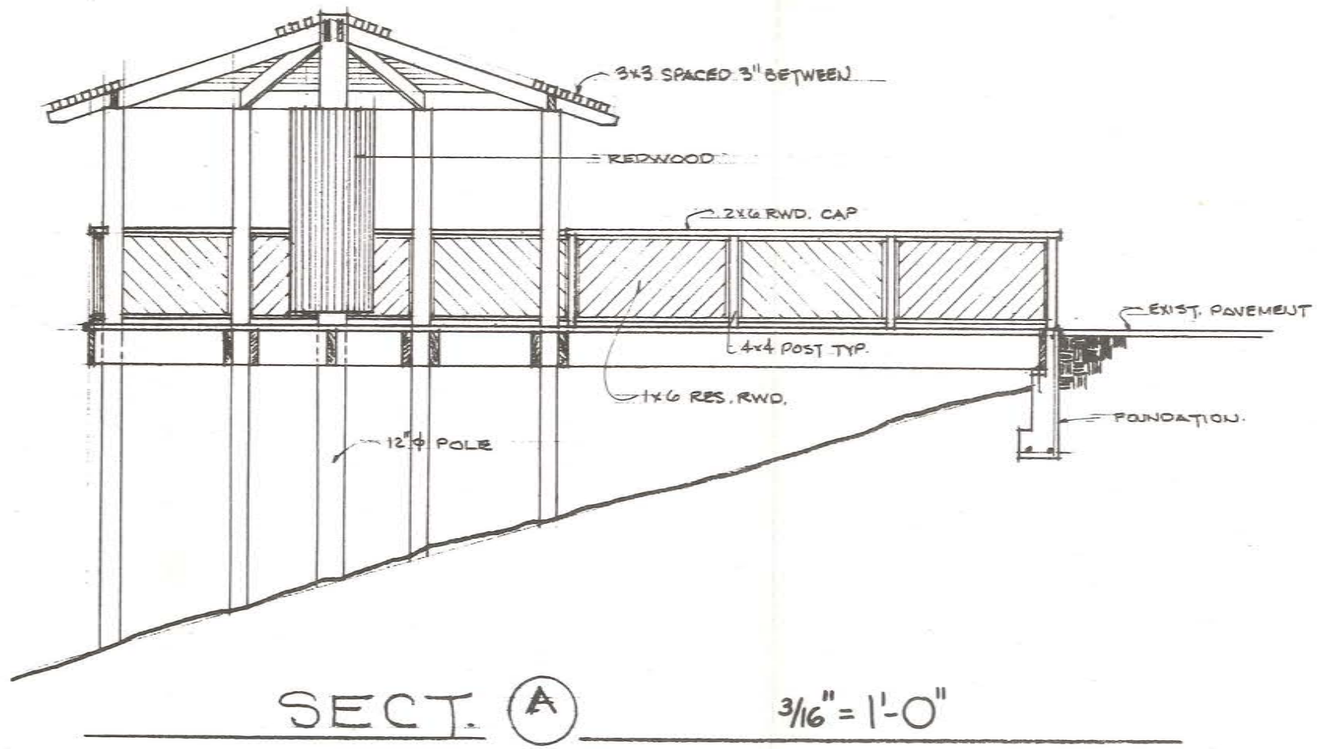
UNFOLDED ELEVATION B-B

SCALE: 1/8" = 1'-0"

	U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO CORPS OF ENGINEERS SAN FRANCISCO, CALIFORNIA
DRAWN BY:	MENDOCINO COUNTY CALIFORNIA
TRACED BY:	LAKE MENDOCINO MASTER PLAN
CHECKED BY:	LAKE MENDOCINO INTERPRETIVE- CULTURAL CENTER
SUBMITTED:	
APPROVAL RECOMMENDED:	APPROVED: DATE:
CHIEF OF BRANCH	CHIEF, ENGINEERING DIVISION
PREPARED UNDER THE DIRECTION OF COLONEL, C.E. DISTRICT ENGINEER	SCALE: 1/8" = 1'-0" JOB No. DRAWING NUMBER SHEET



PLAN 3/16" = 1'-0"



SECT. A 3/16" = 1'-0"

U. S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
SAN FRANCISCO, CALIFORNIA

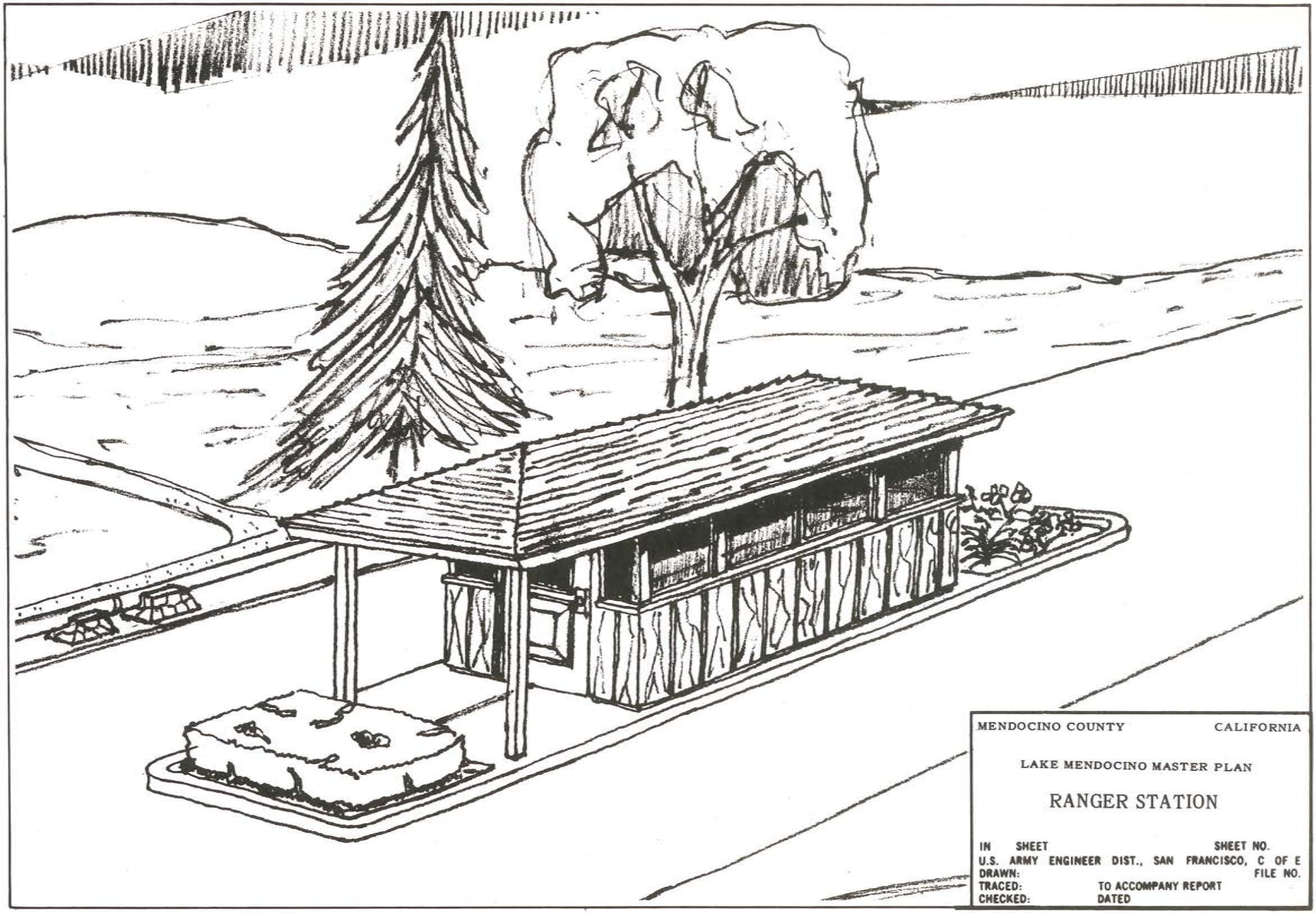
DRAWN BY:
TRACED BY:
CHECKED BY:
SUBMITTED:

MENDOCINO COUNTY CALIFORNIA
LAKE MENDOCINO MASTER PLAN
OVERLOOK KIOSK

APPROVAL RECOMMENDED: APPROVED: DATE:

PREPARED UNDER THE DIRECTION OF
COLONEL, C.E., DISTRICT ENGINEER

SCALE: JOB No.
DRAWING NUMBER
SHEET



MENDOCINO COUNTY CALIFORNIA

LAKE MENDOCINO MASTER PLAN

RANGER STATION

IN SHEET SHEET NO.
U.S. ARMY ENGINEER DIST., SAN FRANCISCO, C OF E
DRAWN: FILE NO.
TRACED: TO ACCOMPANY REPORT
CHECKED: DATED

PLATE 15