

Resource Management Plan and General Development Plan for

# BETHANY RESERVOIR



State of California  
Resources Agency  
**DEPARTMENT OF  
PARKS AND RECREATION**

OCTOBER 1973

STATE PARK AND RECREATION COMMISSION

P.O. BOX 942896, SACRAMENTO, CA 94296-0001



**EXCERPTS FROM THE MINUTES OF NOVEMBER 1973  
Bethany Reservoir State Recreation Area  
Resource Management Plan and General Development Plan**

The Commission had also been asked to review and approve the resource management and general development plans for Bethany Reservoir.

It was moved by Commissioner Starkey, seconded by Commissioner Gilchrist and carried by roll call vote that the following resolution be adopted:

WHEREAS the Director of the Department of Parks and Recreation has presented to this Commission for approval the proposed resource management plan and general development plan for Bethany Reservoir; and

WHEREAS this reflects the long-range development plan so as to provide for the optimum use and enjoyment of the unit as well as the protection of its quality;

NOW, THEREFORE, BE IT RESOLVED that this Commission approves the Department of Parks and Recreation's "Resource Management Plan and General Development Plan for Bethany Reservoir" dated October 1973, subject to such environmental changes as the Director shall determine advisable and necessary to implement carrying out the provisions and objectives of said plans.

\* \* \*

**BETHANY RESERVOIR STATE RECREATION AREA**  
**RESOURCE MANAGEMENT PLAN**  
**and**  
**GENERAL DEVELOPMENT PLAN**  
**OCTOBER, 1973**

**Ronald Reagan**  
*Governor*  
*State of California*

**N. B. Livermore, Jr.**  
*Secretary for Resources*

**William Penn Mott, Jr.**  
*Director*  
*Department of Parks and Recreation*



**State of California — The Resources Agency**  
**Department of Parks and Recreation**

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## SUMMARY

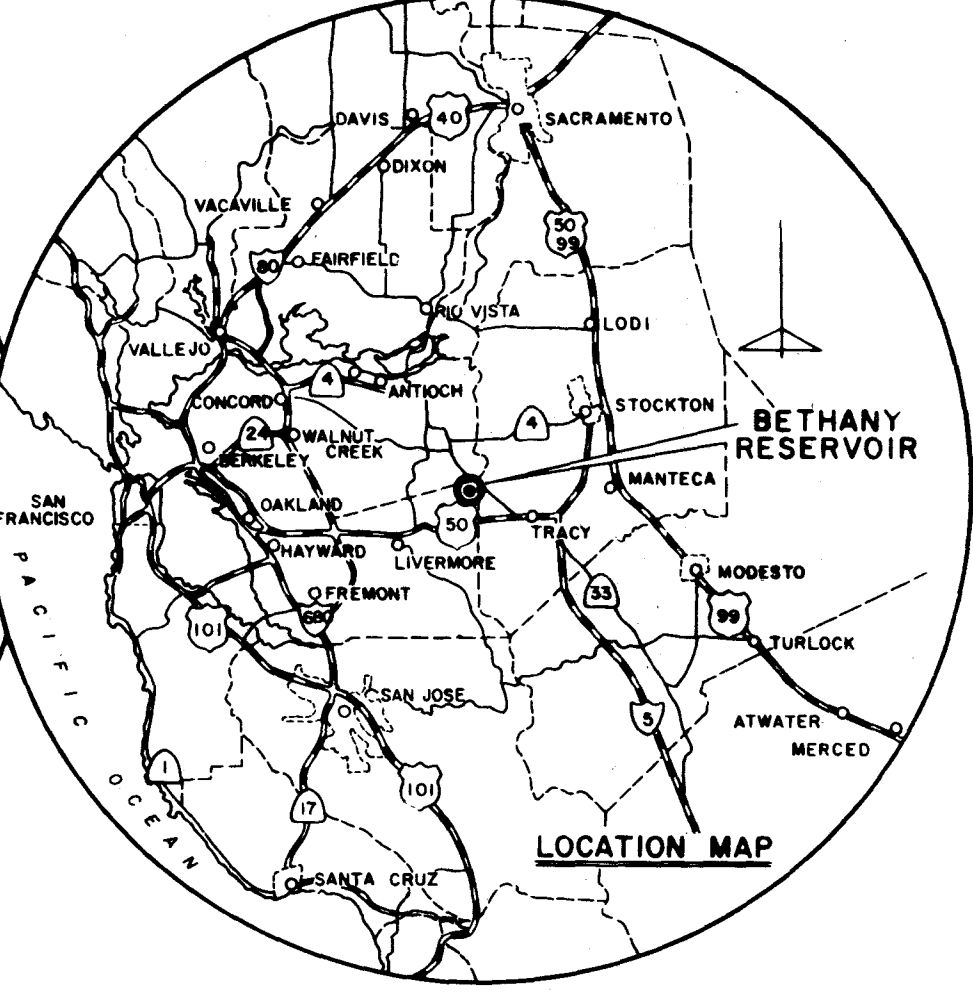
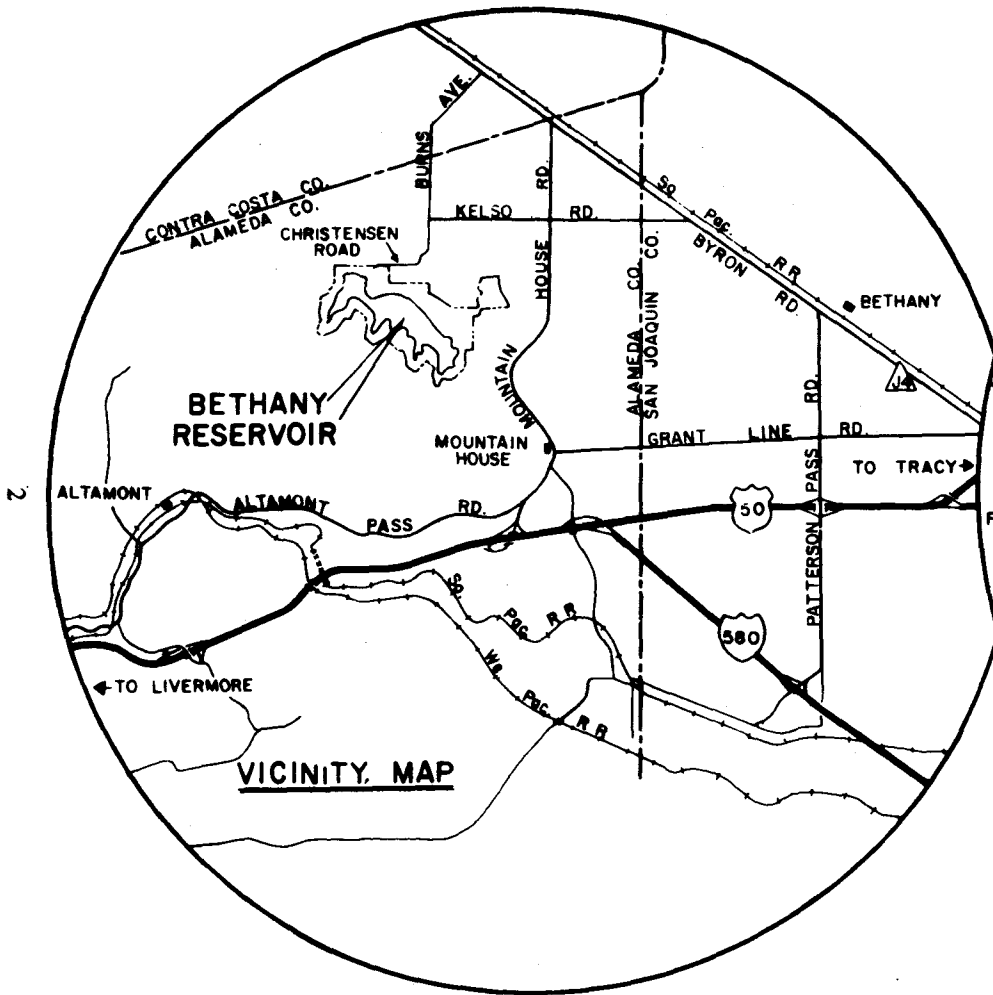
Bethany Reservoir State Recreation Area is one of a series of recreation areas located along the California Aqueduct. The Bethany Reservoir project is 14 miles northwest of Tracy and 20 miles northeast of Livermore in the northeastern corner of Alameda County.

Bethany Reservoir will be developed as a "quiet" recreation area with an emphasis on fishing, picnicking, bicycling, and nonpower boating. This type of recreation area should be attractive to many residents of the San Francisco Bay Area and should represent a welcome diversion from urban living.

Careful analysis of the resources at Bethany Reservoir has indicated that the construction of the reservoir and aqueduct have substantially modified the area. The proposed development of recreation facilities will have little or no adverse impact on this already modified environment.

### Planned Development

Type of facility	Amount
Picnicking	60 units
Camping	15 units
Fishing access trail	4 miles
Parking	120 cars
Swimming beach	1
Comfort station/dressing room	1
Entrance station	1
Service yard	1
Service building	1
Employee trailer pad	1
Access road	½ mile
Boat launching ramp	2 lanes
Fish cleaning facility	1
Boat parking area	40 car/trailer
	40 cars
Comfort station	3



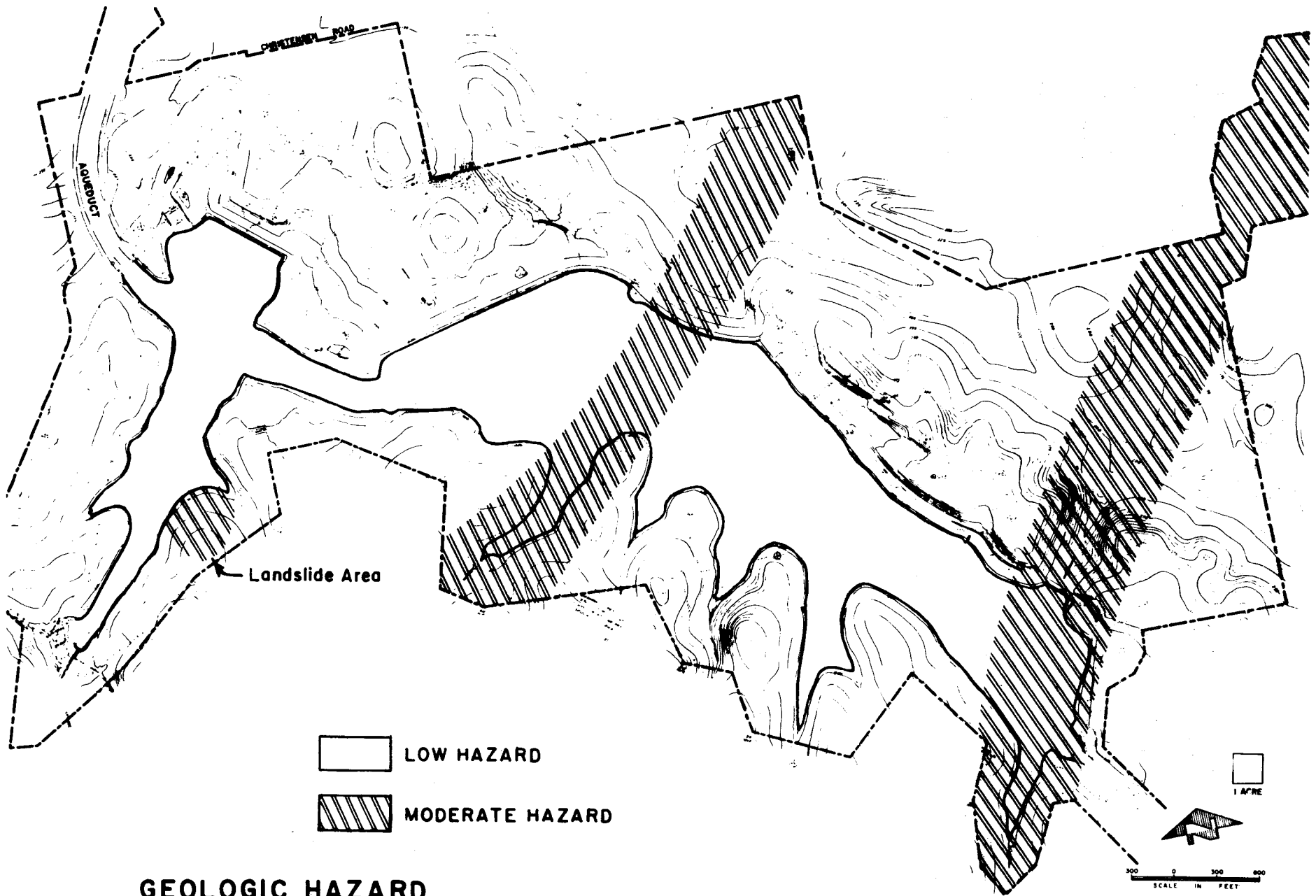
## **Chapter I INTRODUCTION**

Bethany Reservoir is one of several water impoundments along the California Aqueduct of the State Water Project. It is an important feature of the State Water Project in that it serves as a forebay to the south bay pumping plant of the Southbay Aqueduct and as a flow-regulating body for the California Aqueduct.



Bethany Reservoir has a total of 161 surface acres of water. It is located in the northeastern corner of Alameda County on the eastern side of the Diablo Range. It is seven miles north of Highway 50, 14 miles northwest of Tracy and about 20 miles northeast of Livermore. Access to the site is from Highway 50 and Christensen Road.

Analysis of the resources at Bethany Reservoir indicates that this project has the potential to satisfy high-intensity recreation demand and should therefore be classified and developed as a state recreation area.

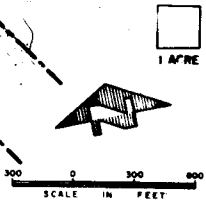
The Department of Parks and Recreation favors local operation of the recreation facilities at Bethany Reservoir because it is anticipated that the greatest use will be by visitors from the local area. At the present time, no firm agreement for operation of the recreation facilities has been made.



Landslide Area

-  LOW HAZARD
-  MODERATE HAZARD

**GEOLOGIC HAZARD**





## **Chapter II**

### **RESOURCE INVENTORY AND ANALYSIS**

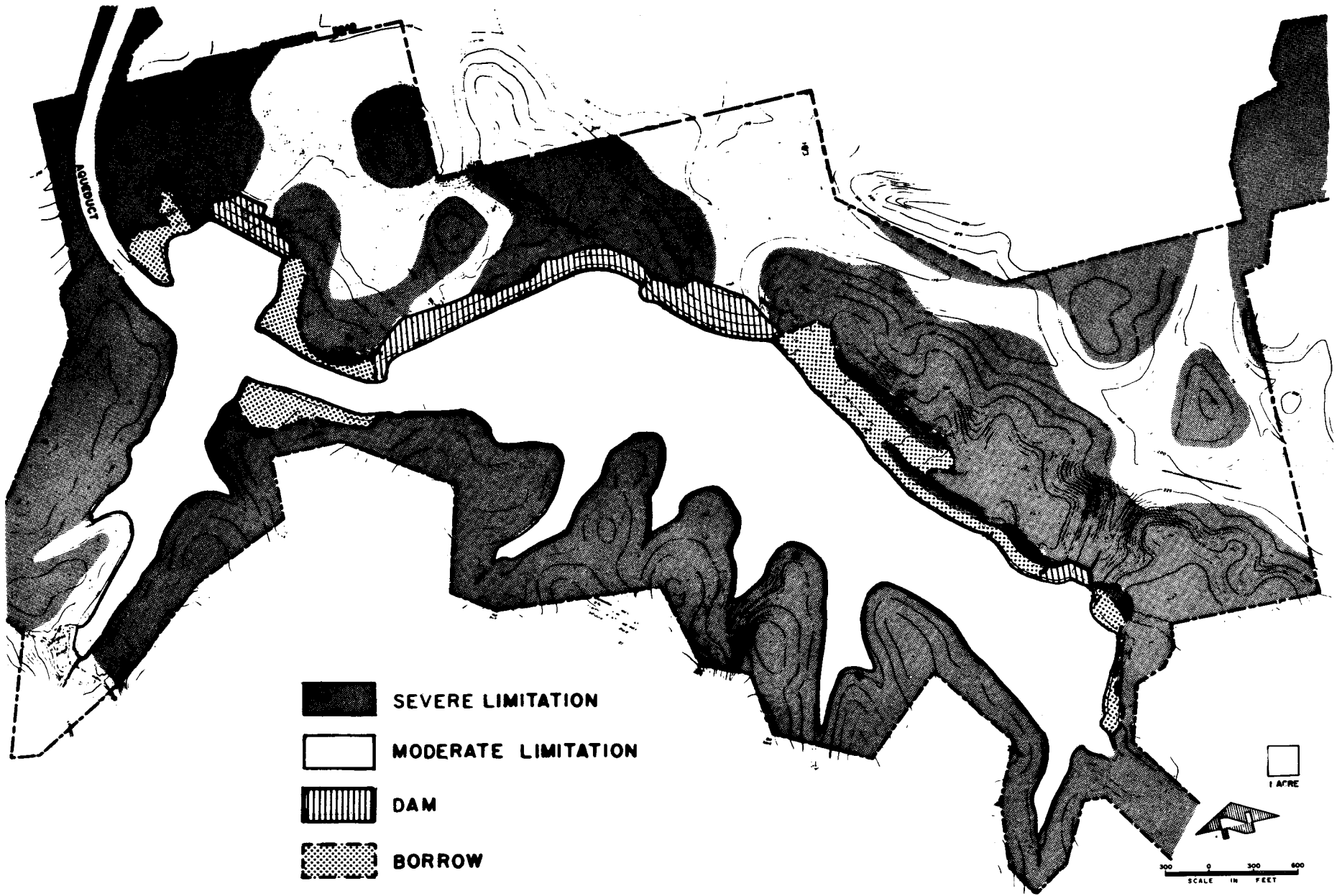
The purpose of this chapter is to analyze and interrelate the natural resources within the recreation area. The analysis will indicate those areas that have high resource values and will provide the basic rationale for the allowable use intensity plan (end of this chapter) and the general development plan (Chapter IV).

#### **Geology**

The dominant geological formation of the Bethany area is upper cretaceous marine. This formation is interspersed with alluvial deposits. The geologic hazards map indicates two faults that are believed to run through the reservoir. The map also indicates an area on the northernmost arm of the reservoir where a landslide deposit exists. Both the fault and landslide areas have been designated moderate hazard areas.

## **Soils**

The soils restrictions depicted on the map are based on studies by the U.S. Soil Conservation Service. The soils have been rated severe or moderate based on their ability to support development. In some areas of the site, large amounts of soil have been moved in the construction of the reservoir. The soils here can be modified by adding amendments to increase their ability to support development.



**SOILS ANALYSIS**

## **Slope**

As the slope analysis map indicates, a large portion of the development potential of the land is limited by the steepness of the slopes. Any land with a slope of more than 20 percent has severe limitations for development. Land with slopes in the 10 percent to 20 percent range has moderate restrictions. Land in the 0 to 10 percent category has no development limitations.

## **Climate**

The climate in the Bethany Reservoir area is hot, dry, and windy. The temperature can be expected to be over 90° F on 80 days out of the year, and temperatures of more than 100° F are common. According to the records of the U.S. Weather Bureau, the mean annual precipitation is generally less than nine inches; 25 inches is the most ever recorded. Eighty percent of the rain occurs between November and March. It rarely rains during the summer months.

## **Wildlife**

Because of the nature of the terrain and vegetation, the animal life consists mostly of small mammals. Probably the largest animal present is the coyote, which preys on the rodents, rabbits, and other small members of the animal population. Birds of prey, such as hawks and owls, are also found in this area.

Since the construction of the reservoir, water birds of varying numbers and variety have been attracted to the area. Their numbers are greatest from fall to early spring.

There are no rare or endangered animal species in the area.

## **Vegetation**

The natural vegetation of the entire Bethany Reservoir area is grassland. Like most of the lowlands of California, this land has been heavily grazed for more than 100 years, and, as a result, the native grasses have been greatly modified.

In addition to grasses, there are numerous species of broad-leaf herbaceous plants. Most of them are weed types although some have attractive flowers in the springtime. The only trees are a few eucalyptus trees at the site of an old farm.

There are no rare or endangered vegetative species nor any unusual ecosystems.

## **Scenic Values**

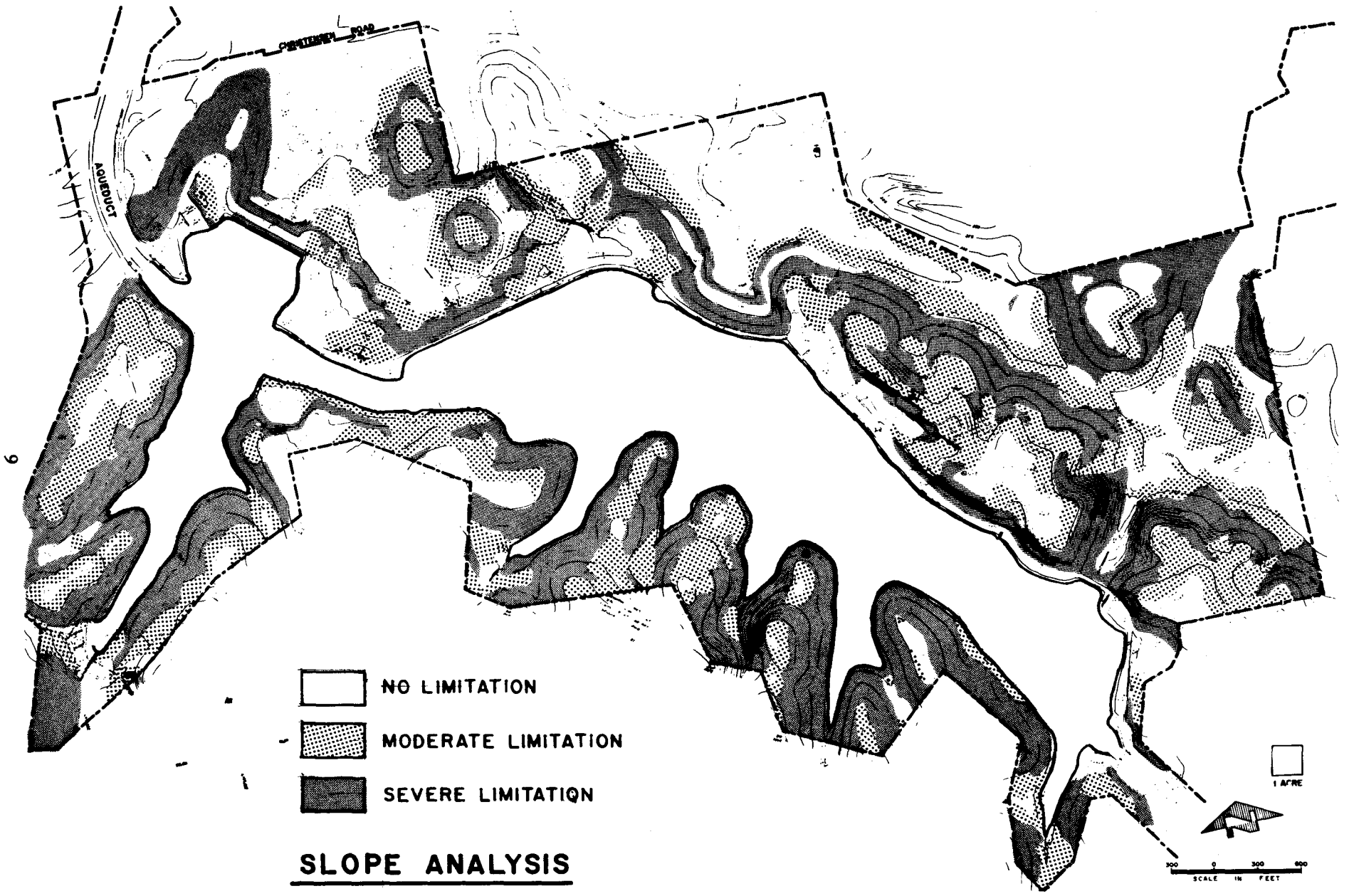
The Bethany area contains certain vista points from which the visitor can look out across the delta and the northern San Joaquin Valley. In the spring, when the hills are covered with green grass interspersed with wildflowers, these vistas are at their best.

## **Archeological Resources**

Other than a chipped obsidian knife blade and a single burial site, no evidence of an early Indian culture has been found in the Bethany area. Because of its dry and treeless nature, this area was probably a hinterland that was penetrated only during trading and gathering trips to the coast.

## **Historic Resources**

There is nothing historically significant about this area.



### **Allowable Use Intensity**

In addition to determining the intensity of development that each resource can support, the resource analysis identifies those areas that have limited potential for development because of natural hazards or site limitations.

The basic assumption of this resource analysis is that development to support intensive recreation use will occur in areas with the least significant resource values.

The resource analysis at Bethany Reservoir indicates that the area has been so completely modified through the construction of the reservoir and aqueduct and through agricultural uses that the existing resource values are few. Preservation of the current resource values is therefore a minor consideration in determining the intensity of recreation development.

The allowable use intensity plan identifies those areas that can support intensive recreation use and those that can support moderate recreation use. It also identifies areas that should not support recreation use at all.



**ALLOWABLE USE INTENSITY MAP**





### **Chapter III**

## **RESOURCE MANAGEMENT PLAN**

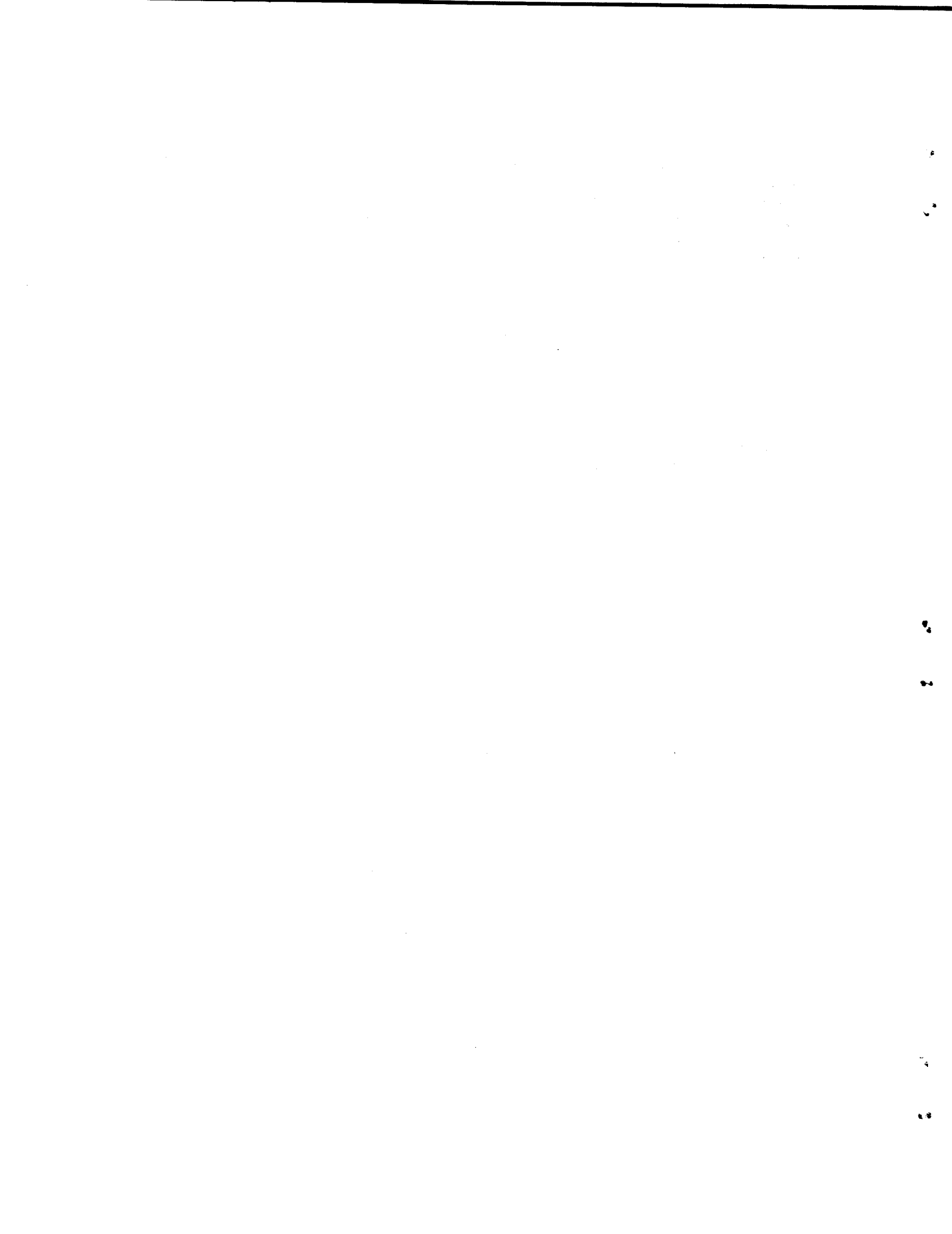
The resource analysis has indicated that the Bethany area has no major environmental or cultural values; rather, the area is of interest to the Department of Parks and Recreation primarily because of its recreation potential. As with any other body of water in the central valley, this reservoir should attract visitors for all types of water-oriented activities. In addition, the limited cultural and natural values of this area will be described and interpreted to the public in whatever informational program is developed.

#### **Declaration of Unit Purpose**

The purpose of Bethany Reservoir State Recreation Area is to enable the public to enjoy the water-associated recreational activities made possible by the presence of Bethany Reservoir and of the beginning reaches of the California Aqueduct.

#### **Declaration of Management Policy**

The Department will develop and manage the recreational resources of Bethany Reservoir State Recreation Area in a manner appropriate to its rural setting, its gently rolling topography, and its location close to and overlooking the vast delta of the Sacramento and San Joaquin Rivers. The Department will also construct and maintain recreational facilities appropriate to the unit's purpose and location.



**Chapter IV**  
**THE GENERAL DEVELOPMENT PLAN**

**Need for the Project**

Bethany Reservoir is located within the zero-to-one-hour travel time zone of the Stockton metropolitan area. It is located within the one-to-two-hour travel time zones of the San Francisco metropolitan complex (Marin, San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, and Solano Counties) and the Sacramento metropolitan area. It is also located within the two-to-four-hour travel time zone of the Fresno metropolitan area.

The estimated and projected populations for these metropolitan centers are as follows:\*

	1970	1980	1990
San Francisco metropolitan complex	4,361,100	5,104,300	6,039,000
Sacramento metropolitan area	637,500	740,500	865,300
Fresno metropolitan area	414,200	454,100	504,100
Stockton metropolitan area	290,700	340,100	393,500

\*Department of Finance: *Population Estimates for California Counties: Advance Report*, August 18, 1972. *Provisional Projections to 2000*, September 15, 1971. Projections include assumed military populations.

The recreation demand of these metropolitan centers is increasing faster than the population growth. The San Francisco metropolitan complex will exert the greatest pressure on the Bethany area. Between 1970 and 1990, this complex is expected to realize a 38 percent population increase, and, during this same 20-year period, recreation demand is expected to increase 50 percent or 1.32 times the population growth.

The new facilities needed from all suppliers to meet existing and future recreation demands of nearby metropolitan centers within their respective travel time zones of Bethany Reservoir are as follows:

	1970	1980	2000
<b>Zero-to-one-hour travel time zone</b>			
Stockton metropolitan area			
Camp units	6	11	51
Picnic units	188	208	488
Marina slips and moorings	—	—	14
Boat access parking	—	—	35
Hiking trails (miles)	—	—	7
<b>One-to-two-hour travel time zone</b>			
San Francisco metropolitan complex			
Camp units	2850	3010	5740
Picnic units	—	—	2049
Boat access parking	—	126	586
Marina slips and moorings	—	—	945

	1970	1980	2000
Sacramento metropolitan area			
Camp units	346	366	736
Picnic units	142	262	592
Marina slips and moorings	179	309	689
Boat access parking	78	138	308
<b>Two-to-four-hour travel time zone</b>			
Fresno metropolitan complex			
Picnic units	96	146	306
Marina slips and moorings	—	42	202
Boat access parking	17	47	127

### Planned Development

The location of the site in relation to the San Francisco metropolitan complex, the lack of significant resources that would be damaged through development, and the recreation demand of residents of the Bay Area emphasize the desirability of developing Bethany Reservoir to accommodate recreation use.

The project site is situated in the rolling hills of a quiet rural area. The project has been designed to maintain the placid atmosphere as a retreat from the noise and hectic pace of the city. The design includes provisions to keep automobile traffic as far from the use areas as is practical and to limit boat use to crafts without motors.

The primary recreation use at Bethany Reservoir will be fishing. To enhance this activity, day-use facilities will be provided. The reservoir is also the northern terminus of the California Aqueduct Bikeway. As such, it will be both a staging area and a destination point for bicyclists.

#### Picnic Areas

One picnic area will be located near the northern end of the reservoir on the east side. Another smaller picnic area will be located on the east side of the reservoir midway between the northern and southern ends. Tables, bar-b-que grills, and drinking water will be provided.

#### Camping Facilities

There will be a small campground primarily for bicyclists near the aqueduct inlet to the reservoir. Each campsite will consist of a pad, a table, and a stove. The nearest automotive access will be a parking area 1,000 feet from the campground.

#### Swimming Beach

A swimming beach will be provided near the larger of the picnic areas.

#### Fishing Access Trail

To provide fishing access, a trail will be developed around the reservoir. The trail will be a dirt path approximately 20,000 feet long.

#### Parking

A paved parking area will provide space for approximately 120 vehicles. There will be irrigated planting spaces in the parking area to provide for shade and screening and to break up the expanse of asphalt.

### **Service Area**

The service area will consist of about 1/5 of an acre, mostly paved. A building will be provided for storage. The entire service area will be enclosed with a six-foot chain link fence for security.

### **Employee Trailer Pad**

One paved trailer pad with utilities will be provided next to the service area to accommodate an employee trailer.

### **Entrance Station**

An entrance station kiosk will be located far enough away from Christensen Road to provide for back-up traffic coming into the park. The kiosk will serve as a fee collection point and as a park office.

### **Sanitary Facilities**

Sanitary facilities will include a comfort station for the camping area, a comfort station/dressing room for the large picnic area and beach, and two chemical toilets for the small picnic area.

### **Landscaping**

The picnic areas and camping area will be landscaped with turf and trees. The parking area will feature trees and ground cover. Trees will be planted along the entrance road and along Christensen Road. All plantings will be irrigated by an underground irrigation system.

### **Circulation**

The entrance to the park is from Christensen Road. The park road will run past the entrance station and directly to the parking area. The other circulation route within the park will be the service road, which will be restricted to service vehicles and will serve as the aqueduct bikeway.

Bicyclists will enter the park in one of two ways. Those using the park as a staging area will arrive by automobile and leave by taking the California Aqueduct Bikeway south. Those bicyclists who are coming to Bethany as a destination or a stopover will approach from the south on the Aqueduct Bikeway.

### **Utilities**

#### **Power and Telephone Service**

Electricity and telephone service are presently available in the area. Power lines within the project will be underground.

#### **Sewerage**

The Central Valley Regional Water Quality Control Board has stated that septic tanks and leach fields are acceptable provided the minimum regional requirements are met. It has been determined that this is the best method of disposing of sewage within the recreation area. All leach lines will be below the lowest elevation of the reservoir.

Two other methods have been explored for disposing of sewage. They are (1) construction of a sewage disposal plant; and (2) delivery of the sewage to a local treatment plant. The amount of development planned does not justify the expense necessary to carry out either of these alternatives.

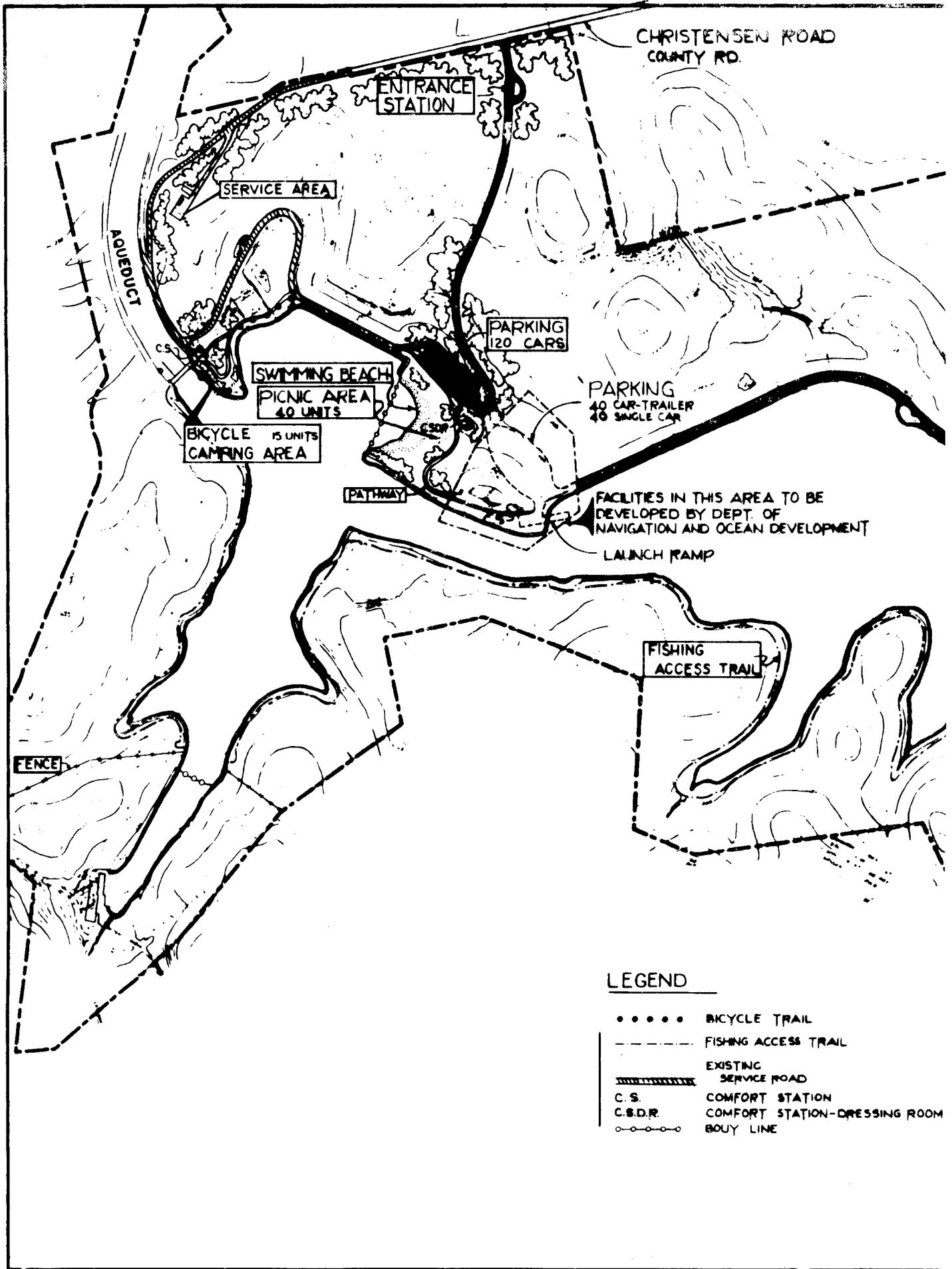
#### **Water**

The water supplies will be treated reservoir water. The system will include an elevated storage tank and pump. The tank capacity should be double the volume necessary for one day's use.

An alternative water supply would be the Department of Water Resources' Delta Pumping Plant. An existing water treatment plant there could supply water to the project if an agreement can be reached and if the necessary amount of water can be obtained.

#### **Boating Facilities**

The boating facilities will be provided by the Department of Navigation and Ocean Development. Their development will consist of a two-lane boat launching ramp, parking for cars with boat trailers and for single cars, a comfort station, and a fish cleaning facility.

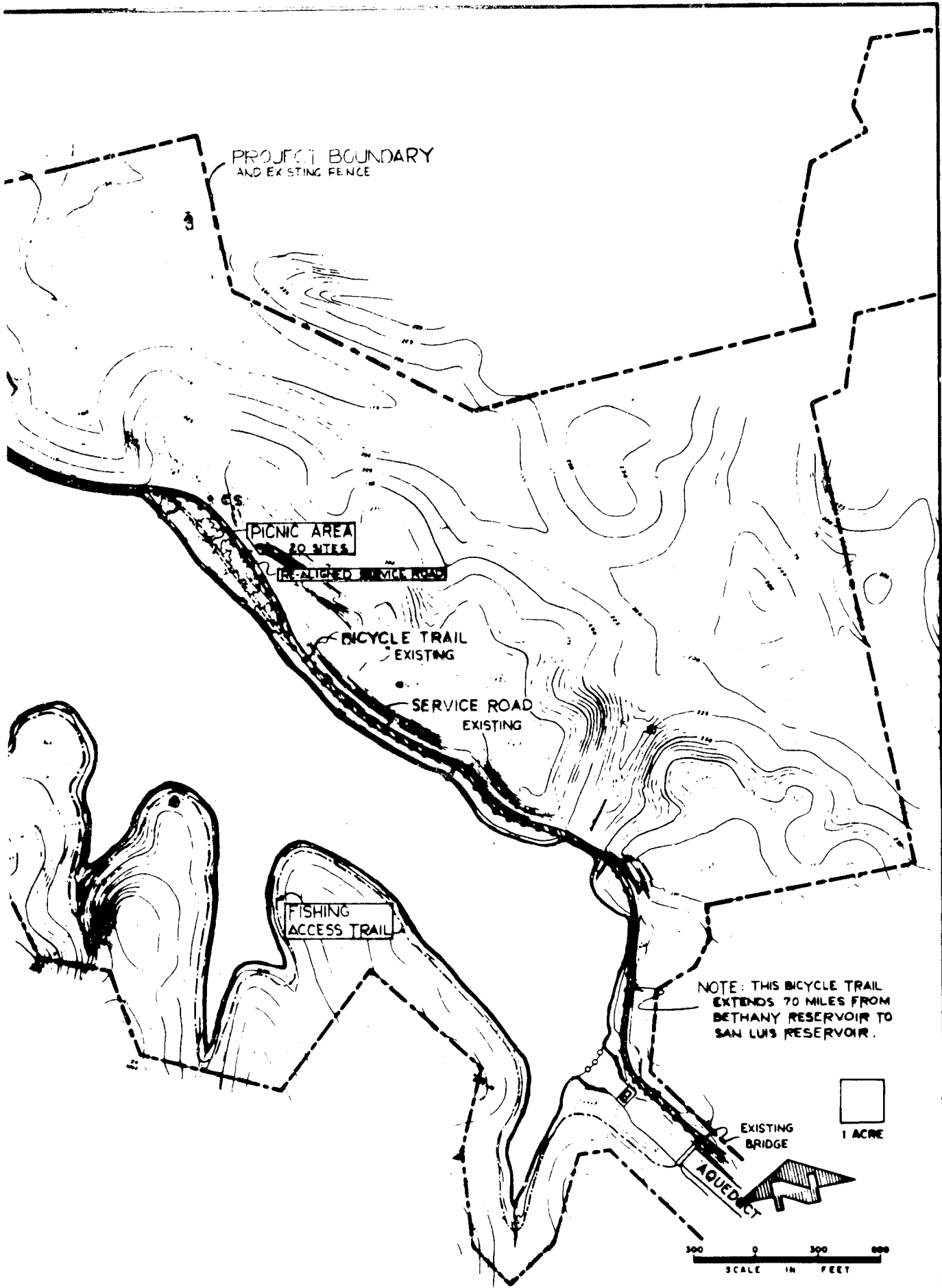


**LEGEND**

- ..... BICYCLE TRAIL
- FISHING ACCESS TRAIL
- EXISTING SERVICE ROAD
- C.S. COMFORT STATION
- C.S.D.R. COMFORT STATION-DRESSING ROOM
- BOUY LINE







APPROVED	DATE
APPROVED	DATE
APPROVED	DATE

REVISIONS	DATE

RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF PARKS AND RECREATION

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

BETHANY RESERVOIR  
**GENERAL DEVELOPMENT PLAN**

DRAWING NO. 13670
SHEET NO. 1
2



## **Chapter V**

### **ENVIRONMENTAL IMPACT REPORT**

The recreation facilities at Bethany Reservoir are being developed jointly by the departments of Parks and Recreation and Navigation and Ocean Development. This environmental impact report applies to those facilities that will be provided by Parks and Recreation. Facilities that are to be provided by the Department of Navigation and Ocean Development will be covered in an environmental impact report provided by that agency.

#### **Environmental Impact of the Proposed Action**

The site of Bethany Reservoir has already been severely altered by man. The greatest effect on the environment has been caused by the introduction of the aqueduct and the reservoir. With these elements, a large body of water has been introduced to an area that is normally arid. Large amounts of earth were moved during construction. This is especially true with respect to the construction of the dams for the reservoir. The excavation for fill material has left large scars.

The aqueduct begins a few miles north of Bethany Reservoir and runs to the Delta Pumping Plant, where the water is pumped up into Bethany Reservoir. Improvements built along with the aqueduct include the Delta Pumping Plant and maintenance yard, paved roads on each side of the aqueduct and on one side of the reservoir, a concrete bridge at each end of the reservoir, a water flow control gate at the South Bay Pumping Plant, two very tall surge tanks, five large pumps on a concrete platform, and a now abandoned canal. Other developments in the immediate vicinity include high tension power lines, a hog farm, and a tallow processing plant.

The construction of recreation facilities will cause some additional physical changes. An access road will be constructed from Christensen Road to the parking area. The construction of the road and parking lot will require some cutting and filling and paving over existing grassland. Approximately one acre of grassland will be covered with pavement.

Another physical change will be the construction of a swimming beach. Approximately 25,000 cubic yards of material will be removed from the beach, and sand will be imported. The material removed will be used for fill in building the parking lot and to fill in the abandoned canal. The beach is to be located on one of the scar areas.

Portions of the service road along the east side of the reservoir will be realigned to provide additional usable land for recreation purposes. The road will be located on scars left from the development of the reservoir.

A fishing access trail will be constructed around the west edge of the reservoir. This trail will not be paved and will cause very little direct impact. However, it may be subject to some erosion during the rainy season.

The utilities required to serve the use areas will have little impact. Electrical power will be furnished to the project through buried power lines. Bottled gas will be used to heat water. Water will be supplied from the reservoir and will be treated. The sewage will be disposed of through septic tanks and leach lines. The leach lines will be constructed in areas of an elevation lower than the lowest elevation of the reservoir. Sewage disposal will meet all water quality control and county standards.

There will be some modification of existing ecological systems. The introduction of additional people to the site will disturb some of the existing animals. The introduction of new plant materials to the site will destroy some animal habitat and will create other habitats. The new habitats will probably bring new species of animals to the area. There are no known endangered species in the area. The net effect on the area's ecological system will be minor.

There should be very little effect on the human population of this area as a result of the proposed project. The area surrounding Bethany is rural. The reservoir has been in existence since 1967 and has not been an impetus for any residential or commercial development. The project is of such a small scale that it should not draw any commercial interests.

### **Any Adverse Environmental Effects That Cannot Be Avoided If the Proposal Is Implemented**

Most of the project will be developed on land that has been modified in the building of the reservoir. Thus, any new development will have very little adverse ecological impact. The only significant impact of the development will be caused by the paving of the road and parking lot. The only alternatives for the paved areas is not to provide these areas at all or not to pave them. If they were not paved, there would be a serious dust problem. And, if the areas are not provided, the public would be deprived of the opportunity to use this recreation site.

### **Mitigation Measures Proposed to Minimize This Impact**

Mitigation measures will include plantings to screen developments from view, to integrate development into the natural scene, and to protect the area from dust. Turf will be used to reduce both wind and human erosion and will make a more attractive area for human use.

### **Alternatives to the Proposed Project**

The first alternative is to have no development. This alternative appears unreasonable because the impact of development is minor. No development would deprive the public of the opportunity to use this recreation site.

The major alternative to be considered is the choice of the location of the road leading to the parking area. If the existing service road should not be used as a bicycle trail, it could serve as the access road. This would eliminate the necessity to build another road. But the danger of mixing automobiles, bicyclists, and pedestrians on a narrow road makes this alternative a poor one.

Another aspect considered in the rejection of the service road was that this recreation area was designed as a quiet area in character with its rural setting. To allow automobiles on the perimeter of the reservoir would have countered this design concept.

The swimming beach location was selected because it was the most compatible with the planned access road and parking area. Other beach locations would require a much longer access road than is presently envisioned.

### **Relationship Between Short-Term Use and Long-Term Productivity of the Environment**

The short-term effects on the environment will be more detrimental than the long-term effects. The short term includes the time required for construction. During construction and for a period afterwards, scars will be visible and susceptible to some erosion. Once the plantings establish themselves, however, the noticeable effects on the environment will be minimal.

The project will be managed in a manner that will ensure maintenance of the facilities and protection of the environment.

### **Any Irreversible Environmental Changes as a Result of the Proposed Project**

The largest portion of this project will be developed in areas that have been modified by construction of the reservoir. Any development on land that has not been modified will be minor and will not constitute an irreversible environmental change.

### **Economic Impact of the Proposed Action**

The economic impact of this project will be quite small. There may be a small surge of economic activity during construction, but it should not be significant enough to stimulate any population growth.

