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the plan

for RECREATION DEVELOPMENT

March 1972 DRAFT

U.S. ENVIRONMENTAL PROTECTION AGENCY
TRANSPORTATION COLLECTION
NORTHWESTERN REGION
EMERSON ST. SEASIDE, CALIF.

LAKE BERRYESSA, CALIFORNIA



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Authority

This report has been prepared by the National Park Service at the request of the Bureau of Reclamation, Region 2, Sacramento, California, under the basic authority of the Park, Parkway and Recreational Study Act of June 23, 1936 (49 Stat. 1894).



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INTRODUCTION

What we do with the public lands of the United States tells a great deal about what we are--what we care for--and what is to become of us as a Nation.

Senator Jackson
Chairman
Senate Interior Committee

The Lake Berryessa Basin is one of those few places which speak forthrightly to the future needs of the rapidly urbanizing and increasingly technologically oriented populous of this Nation. Here on the very fringe of three major metropolitan areas--San Francisco Bay, Sacramento, and Stockton--is a combination of manmade and natural resources which, through proper use, can help this Nation in its continuing efforts to retain its mental and ecological balance.

This basin does not have the powerful magnetism of the sea or of the mountains; yet, it has the attraction of both. It is an area unto itself; a bowl surrounded by rugged ridges. It could be left that way, forgotten, and unincorporated in the active web of urban life, but its

real worth would be lost. Its greatest value then lies in its potential contribution to the major urban centers located south and east of the lake.

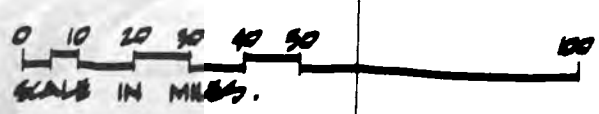
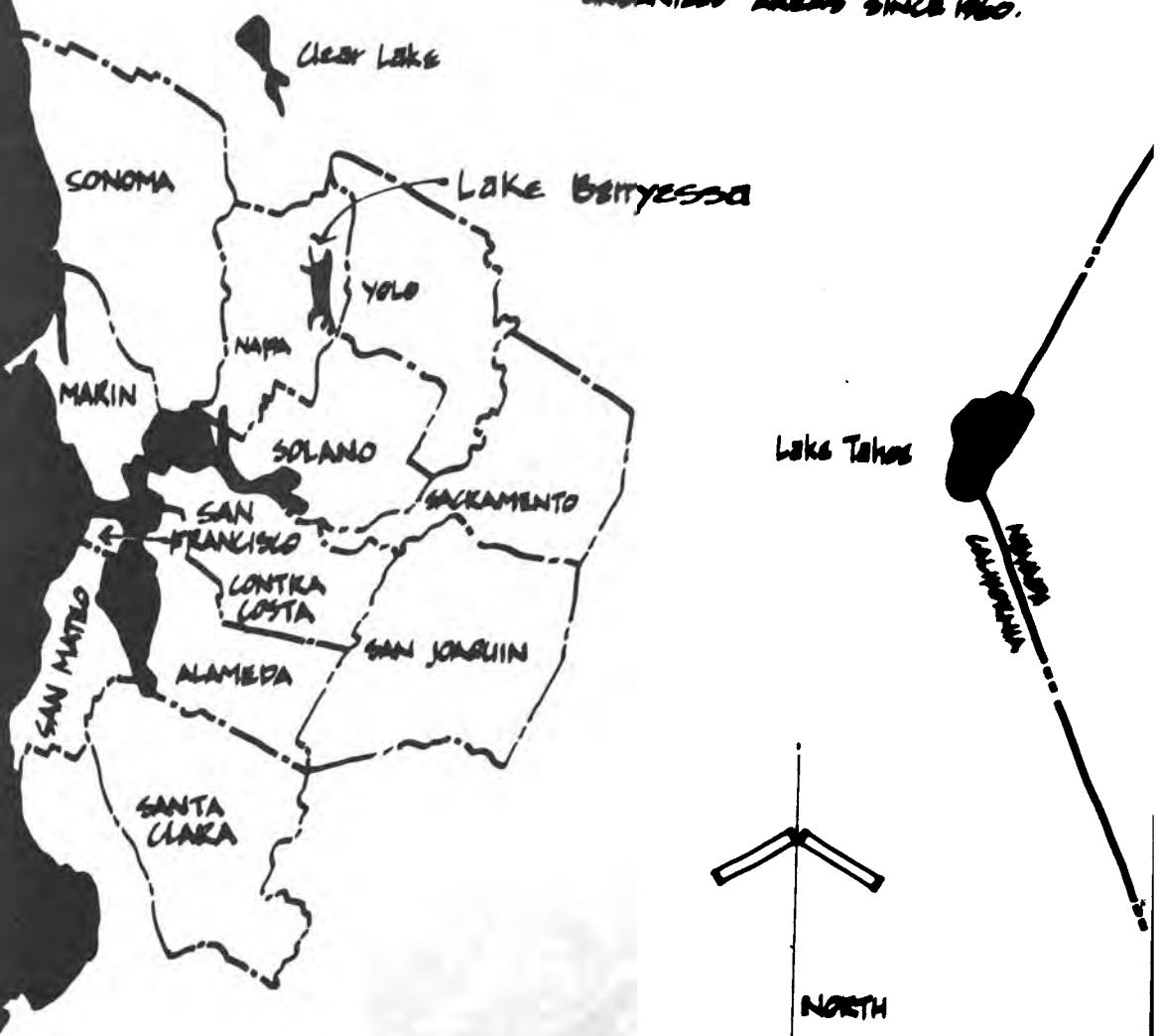
The elements of solitude and "awayness" found along California's ocean beaches and cliffs, in its remnant redwood forests, or throughout the Sierra Nevada also exist at Lake Berryessa, but the difference lies in the intent of the visitor. People come to Lake Berryessa to "get away," but primarily to "get away" in an active manner. Lake Berryessa is a regional water-oriented play space, and except for the Sacramento/San Joaquin Delta, it is the only major fresh water resource readily available to the people of the San Francisco Bay area. As such, the demands for utilization of the lake are great.

The regional influence of Lake Berryessa is difficult to define. The "Outdoor Recreation Outlook to 1980" series published by the California Department of Parks and Recreation shows that the 0- to 2-hour recreation driving zones of the San Francisco Bay, Sacramento, and Stockton areas all include Lake Berryessa, with San Jose and Stockton being on the very fringes of the service area. Although many residents in Sacramento and particularly Stockton will chose to use the more convenient water-oriented opportunities in the Sierra Nevada foothills or the Sacramento/San Joaquin Delta, nevertheless all these metropolitan areas need to be considered in the planning for Lake Berryessa.

This multi-metropolitan region, comprised of 12 counties, is a major dynamic and growing area in California. Its population in 1970 was

POPULATION SUMMARY

- 5.6 MILLION PEOPLE IN 1970.
- 26.6% INCREASE SINCE 1960.
- 32.5% INCREASE IN POPULATION OF URBANIZED AREAS SINCE 1960.



12 COUNTY REGION

5.6 million people--an increase of 26.6 percent over the last 10 years. Furthermore, the urbanized population within the counties has grown even more dramatically, with a 32.5 percent increase since 1960.

Within this region the broad spectrum of existing recreational resources includes beaches and rugged headlands along the Pacific Coast, a varied sequency of paralleling and abrupt mountain ranges and sculptured hills, isolated groves of redwoods in the wooded coastal valleys that gradually change to scattered oaks and grasslands, and finally the wide expanse of farmland in the Sacramento Valley to the east. The San Francisco Bay, the Delta, Clear Lake, and the wine country are located either within or adjacent to the area.

Access to Lake Berryessa from both the Bay area and the Sacramento area appears to be relatively easy; however, once the visitor leaves the freeways, driving can be slow and difficult, particularly on the weekends. Mountains must be crossed to reach the lake from any direction and the roads are generally two-lane, rural facilities.

Lake Berryessa has about 170 miles of shoreline and inundates a large valley enclosed by ridges rising over 2,000 feet to the west and over 2,400 feet on the magnificent Rocky Ridge to the east.

The main lake is a wide expanse of open water over 10 miles long, broken by a few islets and two large islands near the west shore. The southern portion of the lake snakes to the dam through the "narrows;" here there is a feeling of constriction more overpowering than the expansiveness of the main lake.

PUTAH & POPE CREEKS

- STEEP SLOPES
- LONG ARMS OFF MAIN LAKE
- PHYSIOGRAPHIC CONNECTIONS TO POPE VALLEY
- WILD CHARACTER

ROCKY RIDGE & FOOTHILLS

- RUGGED FOOTHILLS & HIGH RIDGE
- STEEP SLOPES
- MAGNIFICENT BACKDROP TO THE LAKE
- ROUGH TOPOGRAPHY PROVIDES REASONABLE ASSURANCE AGAINST DEVELOPMENT
- PHYSICAL & VISUAL LIMITS TO THE EAST

FLAT SHORELINE

- OPEN GRASSY GENTLE SLOPES INTO THE WATER
- SPARSE VEGETATION
- RECEIVES FULL AFTERNOON SUMMER SUN
- GRADUALLY MELTS INTO FOOTHILLS TO THE SOUTH
- MIGRATORY WATER BIRDS

MAIN LAKE

- LONG BROAD OPEN EXPANSE OF WATER
- ROUGH & PANGOROUS IN STRONG NORTH WINDS

GIBSON FLAT, CEDAR ROUGHS, SUGAR LOAF

- RUGGED STEEP RIDGES & MOUNTAIN
- VISUAL & PHYSICAL BACKDROP TO THE WEST
- WILDNES CHARACTER
- TOPO PROVIDES SOME LIMITS TO DEVELOPMENT

FOOTHILL SHORELINE

- ROLLING FOOTHILLS TO WATER'S EDGE
- BENCHES & STEEP TO GENTLE SLOPES
- MULTITUDE OF SMALL COVES
- SOME BEACHES

LOWER LAKE

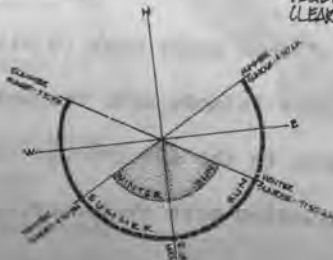
- NARROW LAKE, STEEP WALLS, GORGE-LIKE SIDEARMS
- RUGGED STEEP TOPOGRAPHY
- WILDNES CHARACTER

ISLANDS

- FEELING OF DETACHMENT FROM MAINLAND
- TOPO VARIES FROM GENTLE TO THE SOUTH & WEST TO STEEP ON THE NORTH & EAST
- VEGETATION VARIES FROM PASTURE-LIKE CLEARINGS TO WOODLAND

NOTE:

VEGETATION IS GREEN IN WINTER, GOLDEN BROWN WITH GREEN TREES IN SUMMER.



Long thin arms lead back from the "narrows" into Markley Canyon and Wragg Canyon. Steele Canyon is the division between the steep, rocky confines of the "narrows" and the main lake. The western shore north to Pope Creek undulates in three dimensions. Steep hills and relatively flat benches meet the lake in long thin peninsulas and an almost endless variety of small coves. The vegetation varies from impenetrable chaparral and scattered oaks to grassy clearings.

Long arms of water also extend up the Pope and Putah Creek Valleys from the west side of the main lake. The Pope Creek Valley forms a tenuous physiographic connection to the Napa Valley. The land formations from Putah Creek to Eticuera Creek are similar to those between Steele Canyon and Pope Creek. At Eticuera Creek a natural bowl completes the northern terminus of the lake.

Flat grassland with occasional trees describes the east shore of the main lake. This shoreline provides only an occasional bay or cove for shelter. Extensive mudflats appear as the water level drops in summer. The area is hot, absorbing the full brunt of the afternoon sun. On occasions, this and the south shore receive the full force of winter storms. Toward the dam, the flats merge into rolling hills and then suddenly rise to steep mountain slopes at the "narrows."

The horizons in every direction are the crests of mountain ridges--the most striking being the nearly vertical dike of Rocky Ridge paralleling the east side. The lake is large and wild; however, the irregular shoreline provides an intimacy and feeling of personal possessiveness.

The anticipation and hope expressed in word and picture are heightened by the drive to the lake. Even the jammed roads and snarled traffic create a preamble to an outstanding resource, and the first sight is no disappointment.

But what happens to that feeling? Why are there so few places to park, to picnic, to camp, and why are there no lifeguards? Is this a public play space, a balm to the pressures of the megalopolis, or is it a place for only a relative few?

Here is a special recreation resource in a special location on the edge of one of the most rapidly growing population areas in the United States. It does exist. It has for over 10 years now. But much of it is restricted by management practices and by lack of public facilities. Furthermore, its resources are in danger. Land use practices have torn the land, causing problems that could accelerate the pollution of the lake and bring the day closer when the lake will die--no longer a desirable recreation resource.

All is not negative, however. There are some instances in which the public is being served well. Generally, existing developed areas are appropriately located in relationship to resources and needs and the undeveloped portions of the lake still retain their inherent natural beauty.

To recognize the existing situation and problems, to analyze the needs and potentials, to develop a philosophy of management for the area and to recommend a series of actions to fulfill appropriate objectives--this

is what this plan is about--and therein lie its purposes. However, only cooperation and innovative, creative, forceful implementation can turn this plan into reality.

The reality of Lake Berryessa can be an anachronism--a place for the few. Or it can be a place for many--contributing to the standard of living of tomorrow. It can be a complementing piece in a regionally balanced system of recreation opportunities for both this and future generations.

THE CONTEXT

Although the first part of this planning document is conceptual in nature and content, a clear understanding of the matrix of factors and conditions affecting the use of the area, the purpose, and objectives is prerequisite to the formulation of the plan.

I. BACKGROUND

Project Operation

Lake Berryessa is a Bureau of Reclamation reservoir. The normal water level is 440 feet with about 19,200 surface acres; however, the lake can fluctuate from a maximum high water level (surcharge elevation) of 455.5 feet to a minimum elevation of 253 feet.

Based on Bureau of Reclamation hydraulic data reflecting ultimate demand of the impounded waters, the average water surface elevation for mid-July, or midway through the recreation season, is 410 feet. With this drawdown of 30 feet, Lake Berryessa would have about 16,500 surface acres.

In successive dry years where inflow is less than discharge, a net lowering of the water surface due to dry spells will have the greatest effect on the north and east sides of the reservoir. However, all areas would be affected due to excessive drawdown. Successive dry years resulting in a progressive lowering of the reservoir level to elevations below 340 feet would have a marked effect not only upon the

esthetic qualities, but also upon public use, which would be severely limited in all areas.

Project History

The Solano Project, authorized as a Bureau of Reclamation project in 1948, was designed to provide flood control and to supply water for irrigation, municipal, and industrial purposes for portions of Solano County, California. The waters impounded by the dam inundated the Berryessa Valley and the site of the town of Monticello and created Lake Berryessa. The lake is approximately 22 miles long and lies almost entirely within Napa County. At normal water level, the main body of water is approximately 10 miles long and 3 miles wide with the long axis in a general north-south direction. At this level, the shoreline length is about 170 miles.

The Monticello Dam was completed in 1957, but the lake started to form behind the partially constructed dam during the winter of 1955-56. Because of the anticipated radical fluctuation of the lake level, it was the general belief that the lake would not become a major recreational area. Also, during the construction phase of the reservoir no provision was made for the development of any recreation facilities.

However, during the first two years of the lake formation, the water and land areas began to receive heavy public use. During this period, access to the lake was from existing roads. There were no sanitary or garbage disposal facilities. The Napa County Board of Supervisors

was advised by both the State and County Boards of Health that the lake would have to be closed to public use. The new lake had become a serious problem for both the Bureau of Reclamation and the County of Napa.

Both the National Park Service and the State Division of Beaches and Parks made studies of the Berryessa area. A report entitled, "Recreational Potentialities of the Yolo-Solano Development in California" was prepared by the National Park Service and submitted to the Bureau of Reclamation in March 1957. This report concluded that the area was not of national significance for recreation and recommended administration by the state or a regional agency.

The State of California, Division of Beaches and Parks, released a report in January 1957 entitled, "State Park Potentialities of Monticello Reservoir and Putah Diversion Pool, Napa, Solano and Yolo Counties, California." In summary, this report recognized the high potentialities of the area for public use, but was not positive in recommending State park status. A re-study of the area was authorized by the State Park Commission and subsequently completed in November 1957. This report entitled, "Re-Study of State Park Potentialities of Monticello Reservoir" recommended that the State Division of Beaches and Parks accept administration of Monticello Reservoir area for recreation purposes. The report and plan recommended development of portions of the project land area and acquisition of additional lands adjacent to the public land. It was reported at the time that the state would not have funds to proceed with this project.

In the spring of 1958, the County of Napa offered to assume responsibility for the management of the recreation use at Monticello Reservoir. A management agreement was entered into on July 31, 1958, between the County and the Bureau of Reclamation and concurred in by the National Park Service. It was subsequently amended in 1962.

Provision and administration of recreation facilities is presently the responsibility of the Napa County Board of Supervisors. In August 1958, the Board of Supervisors created the Berryessa Park Commission to assist them in the planning and management of Lake Berryessa. This 5-member commission, representing businessmen, ranchers, sportsmen, and boaters, had no criteria to follow.

Funds were not provided by the Federal Government for minimum basic public use facilities, roads, or parking areas of any kind. Therefore, a plan was formulated by the Commission to seek private concessioners, using their own private funds, to develop the lake at no cost to the taxpayers of Napa County.

Franchise areas were subsequently contracted to concessioners to develop the initial recreational facilities. The invitation for proposals stated among other things, that:

The attention of prospective bidders is further called to the fact that each area will require a basic development of roads, sewage disposal, garbage disposal, fresh water supply and other facilities consistent with use of the respective areas designated upon the "Monticello Reservoir Public Use Plan."

Awards will be made on the basis of the most satisfactory proposals, taking into consideration the service proposed to be made available to the public within the area for which a proposal is submitted, the monetary return to the County for the concession and the general betterment of the recreational facilities at Lake Berryessa.

The above mentioned "Monticello Reservoir Public Use Plan," completed by the National Park Service in October 1959, proposed a variety of recreation facilities, but little of the plan has been implemented. Instead, all concessioners have concentrated on the development of mobile home parks* which are a more stable financial investment than many other types of recreation development. Such development has been carried out almost to the exclusion of other types of recreational facilities, both in land area used and responsiveness to the public need. Mobile home developments have become the rule and have frequently pre-empted other recreation uses as well as prime shoreline land. Steep lands have been utilized, resulting in raw cuts and fills that degrade the visual environment, cause excessive erosion, accelerate the rate of eutrophication of the lake, and reduce the storage capacity.

*The terms "mobile home park" and "trailer park" as used throughout this plan are defined as follows:

Mobile Home Park: A development designed to accommodate mobile homes on a permanent or semi-permanent basis. A mobile home is a transportable, single family dwelling unit suitable for year-round occupancy and contains the same water supply, waste disposal, and electrical conveniences as immobile housing.

Trailer Park: A development designed to accommodate travel trailers on a limited length of stay basis. A travel trailer is a vehicular, portable structure mounted on a chassis designed as a temporary dwelling for travel, recreation, and vacation use, having a body width and length not exceeding the limits which may be transported on California highways without special permit.

The Bureau of Reclamation is currently reassessing the Lake Berryessa situation and has requested the National Park Service to prepare a new public use plan, making management and development recommendations in the best interest of the general public. This document is the result of that request.

II. NATURAL DETERMINANTS

The Napa County Planning Commission has spent considerable effort in identifying the type and location of several natural determinants, such as geological and vegetative conditions, that exist within the Lake Berryessa environs. The identification of such factors does not automatically indicate where development or use should or should not occur. Planning, however, should take such determinants into careful consideration.

If you can learn the history of a land over a hundred years, the knowledge can tell you what processes are at work in the region--both constructive and destructive. From these, you can learn how to use the land, how to plan a development, where to locate the buildings, roads, and plantings. You do not necessarily have to conform to the processes at work, but at least, if you choose to go against them, you are in a better position to estimate the consequences and the costs.

Richard Reynolds, "Ecological Architecture: Planning the Organic Environment," Progressive Architecture, May 1966

Drainage

Lake Berryessa is the focal point of a drainage basis located primarily in Napa County. The major components of the system are Capell, Pope,

Putah and Eticuera Creeks, the streams in Markley, Wragg and Steele Canyon, and a series of short intermittent streams on the east side.

Vegetation

A sparse to dense growth of oak, chaparral, and digger pine cover most of the north, west, and south sides of the lake. The east side is sparsely covered with large oaks near the water and up brushy canyons. Some Douglas-fir specimens are located on Capell Creek, but the growth is marginal.



Soils

There are four major soil classes within the boundary, none of which present severe problems to development. The soils along the east side of Markley Canyon to the dam and along the northern half of the east shore present no problems regarding development. The soils between Markley Canyon and Berryessa Marina on the west side have severe shrink/swell behavior, which may require pier and great beam construction in foundations. The area north of and including Berryessa Marina has few limitations. All areas, however, have serious limitations regarding sewage disposal techniques.

Geologic Features

Several fault lines exist and there have been a number of minor earthquakes in the area. There are a few landslide-prone areas within the boundary.



Slopes

Slopes under 15 percent are found in very few areas around the reservoir. The most notable of these are located on the northern portion of the eastern shore, in Gosling Canyon, on the islands, Berryessa Marina to Pope Creek, and just south of Eticuera Creek on the west shore.

Steep slopes often give way to more gentle sloping benches and ridge lines at or near the normal water surface. These bench and narrow ridge lines are paralleled by many seasonal creeks and drainage courses. The major creek arms are found in canyons with steep slopes. Topography on the northern half of the reservoir's eastern side consists of very gentle slopes above and below the normal pool elevation.



Climate

The climate of the Lake Berryessa area is conducive to most recreation uses. The summer season is long, warm, and dry with the mean temperature in the low 70's, with extremes over 100 degrees occurring in August. Summer evenings are warm and pleasant with cool nights. Fall and spring mean temperatures average in the 60's. Winters are wet and cold with temperatures falling occasionally below freezing. Annual precipitation is approximately 30 inches, mostly in the winter months.

The primary wind direction is from the southwest, although frequent north winds funnel onto the lake, often creating dangerous boating conditions.

Fish and Wildlife

Large and small mouth bass, catfish, crappie, and trout are well established in the lake. The California Department of Fish and Game makes periodic plantings of these fish. Fishing is excellent all year.

Black-tailed deer inhabit the area as well as coyotes, bob-cats, skunks, weasels, raccoons, foxes, and rodents. Quail, dove, and non-game birds are numerous. Large numbers of Pacific flyway waterfowl use the lake, since the grassy slopes of the east side provide sufficient and good feed. Rattlesnakes are also fairly numerous.

III. DEMANDS AND NEEDS OF POTENTIAL USER POPULATIONS

The demand and need for facilities at Lake Berryessa will always be great and probably beyond fulfillment. Also these demands and needs

are not for all activities and not the same for every segment of the population.

Over half (55 percent) of the recreation demand in the region is for facilities within a 2-hour distance of home.

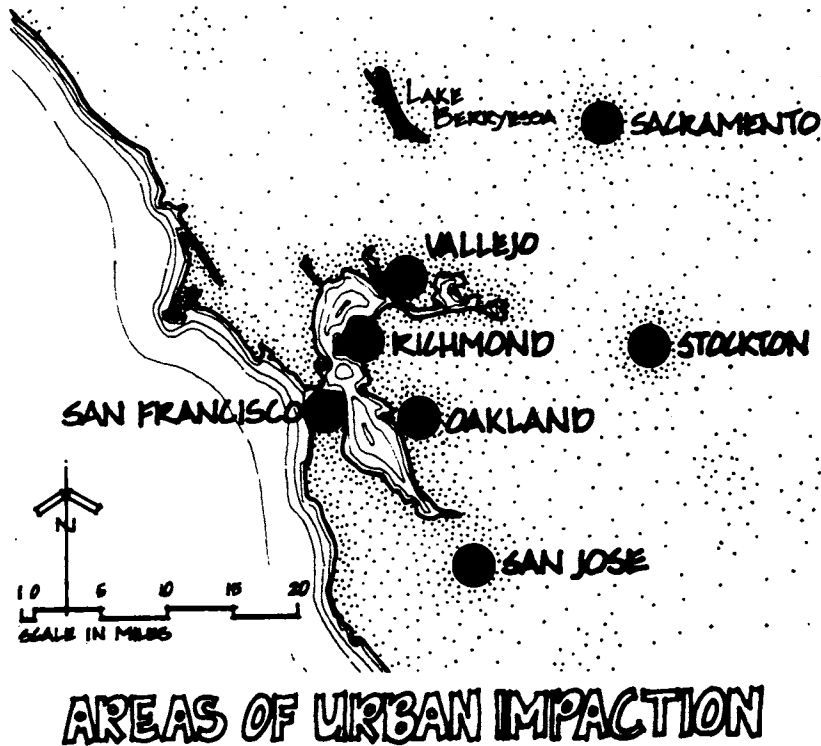
In 1980, deficiencies are expected to exist within the 0- to 2-hour zone in such activities as camping, hiking, riding and swimming, as well as facilities for bicycle trails, boat access parking spaces, there are no projected deficiencies in boat access facilities, i.e., launching ramps. Such predictions are further supported by the projections of increasing personal income. All indications show that it will increase even more rapidly than population. The possible effects of this increase are well stated in a 1968 report "Recreation on and Around San Francisco Bay" by the Bay Conservation and Development Commission:

There is a considerable amount of variation in terms of the percentage of population that participates in each of the various activities. For example, many popular activities exhibit varying patterns with respect to income. Activities such as boating and water-skiing, which require substantial capital outlays are sensitive to increased incomes. Other activities, such as fishing picnicking, walking for pleasure, and nature walks are relatively insensitive to income and participated in by all income groups. . . . Developing. . . for only the more obvious needs, such as boating and water-skiing, could result in exclusion of important socio-economic groups of residents from the use of (the) resources.

Such exclusion as is referred to above would primarily affect that segment of the population living in urban impacted areas, which are "multi-neighborhood portions of our larger cities, which exhibit

abnormal concentrations of social maladies."*

Within the primary user population area of Lake Berryessa there are about 600,000 people in seven such areas--nearly 30 percent of the urban impacted population in the State of California. These people have special recreation problems.



*"Recreation Problems in the Urban Impacted Areas of California,"
State of California Department of Parks and Recreation, October 1970.

According to the State of California Department of Parks and Recreation, October 1970 report entitled, "Recreation Problems in the Urban Impacted Areas of California," the six activities that the urban impacted residents most desired, in order of present day scarcity, are as follows:

1. Fishing and hunting
2. Bowling
3. Swimming
4. Going to the beach, lake, or mountains
5. Dancing
6. Driving, traveling, sightseeing

The same relative ranking for the above activities (excluding bowling and dancing) prevails both in terms of "percentage participating who desire to participate more" and "activities in which the greatest number of residents desire to participate more often."

A portion of these needs could well be fulfilled through utilization of resources at Lake Berryessa.

IV. OTHER REGIONAL RESOURCES

The recreation resources within the 0- to 2-hour travel zones of the potential user populations are extremely rich and varied. Such resources include the Pacific coastline and the San Francisco Bay areas, the coastal mountain parks, the Delta area, the many reservoirs east of the Central Valley, and the resources of Sierra Nevada, such as Lake Tahoe.

However, there are numerous reservoir resources convenient to the Sacramento and Stockton areas in the Sierra foothills and several small reservoirs scattered throughout the San Francisco Bay area. The three major inland bodies of water within the two hours of most of the San Francisco Bay area are the Sacramento/San Joaquin Delta, Clear Lake, and Lake Berryessa.

In the immediate vicinity of all three major metropolitan areas lies the Sacramento/San Joaquin Delta area, which will compete almost directly with the resources of Lake Berryessa. Spread over nearly 1,150 square miles in 5 counties is a network of channels approximately 700 miles in length. Although only 3 million visitor days of use occurred in the Delta area in 1966, 19.5 million visitor days are predicted by 2020.*

Clear Lake is on the extreme fringe of the zone. Development around the lake has reached the point where additional public use areas will be limited and will have little if any affect on the use of Lake Berryessa.

Although the region is richly endowed in extensive and varied recreational opportunities, Lake Berryessa remains as the one major reservoir resource that can best serve the public interest in the San Francisco Bay area.

*Sacramento/San Joaquin Delta Master Recreation Plan, Resources Agency of California

The lake is also somewhat more convenient to portions of the Sacramento population than other reservoirs. However, due to their proximity, Folsom Lake, the Sacramento River and Delta areas, Auburn Reservoir (under construction), and other lakes and reservoirs in the Sierra foothills probably will continue to be the major water recreation areas for residents of the Sacramento and Stockton areas. Maximum utilization of these facilities can be anticipated; Folsom is already frequently used to capacity for boating. It seems probable, therefore, that these areas will have little effect on the optimum utilization of facilities at Lake Berryessa.

The lack of nearby high quality lake and reservoir resource areas points toward full development of Lake Berryessa's optimum capacity as a fresh water-oriented recreation area. It is perhaps relevant to note at this point that although Lake Berryessa is one of the largest lakes in the region (shoreline and water area are nearly 200 percent greater than those at Folsom), its present annual visitation is only approximately 75 percent of that at Folsom. Yet, Lake Berryessa is more convenient to larger concentrations of population. Although use of any two areas can never be completely compared on physical features alone, the foregoing observations do indicate existing underdevelopment for public use of the resources at Lake Berryessa.

V. LAND STATUS

Lands owned in fee title by the Bureau of Reclamation for Lake Berryessa total 26,200 acres. Of this acreage, 19,200 acres comprise the

water surface and 7,000 acres are lands above the normal pool elevation of 440 feet. The Federal ownership limit was established at a minimum distance of approximately 300 feet horizontally from maximum water level.

Flowage or flood easements exist in four different locations: along Putah Creek, on Eticuera Creek, in Steele Canyon, and in Wragg Canyon. These easements complicate management problems. Several parcels of public land near the reservoir and under the administration of the Bureau of Land Management were withdrawn from disposition and are presently under the control of the Bureau of Reclamation. Grazing rights on reservoir lands along the northeast shore are reserved to adjacent owners.

A Reclamation Zone extends about 1,000 feet in all directions from the dam. This zone is under the direct control of the Bureau of Reclamation and its use is limited only to those activities that pertain to the water control purposes of the Solano Project.

VI. ADJACENT LAND USES

Three subdivisions are being developed adjacent to the Lake Berryessa boundary. They are Berryessa Park, adjacent to the north end of Rancho Monticello; Spanish Flat Woodlands, west of Spanish Flat Resort; and Berryessa Highlands, east of Steele Canyon Resort. The Lake Berryessa Estates subdivision is located near the up-stream portion of the easement on Putah Creek. These are generally compatible

with the recreation development, and the lots are of a size that indicates country or recreation living. The east side is devoted to ranching which is compatible, and several long established hunting clubs utilize areas on both sides of the reservoir. A good serviceable airport at Usibellis, some 10 miles away in Pope Valley, could possibly accommodate Lake Berryessa visitors who fly in. Shops and restaurants at Sugarloaf Park, Spanish Flat, and Moskowite Corners are complementary uses.

Adjacent land uses as proposed by the Napa County Conservation, Development and Planning Department are entirely compatible with proposed recreation uses of Lake Berryessa.*

The freeway proposal through the Chiles Valley and Wooden Valley corridor would improve access from the user population region without adversely affecting existing traffic corridors in Napa Valley.

*Refers to the proposed "Napa County General Plan."

PURPOSE, OBJECTIVES AND GOAL

I. PURPOSE

The Recreation Purpose of Lake Berryessa is to:

Make available to the San Francisco Bay, Sacramento, and Stockton region a water-oriented recreation area, providing the maximum amount of recreational opportunities compatible with the conservation of the resources for future generations and complementary to other recreational opportunities within the region.

II. OBJECTIVES

To further define this purpose and to provide guidance for the establishment of operating programs to fulfill the above purpose, the following objectives have been established to guide the management, development, and use of Lake Berryessa.

1. Character of Use

Recognize the public character of the area, giving highest priority to the provision of those facilities that meet the public needs.

2. Optimum Recreation Use

Provide a balanced variety of public recreational opportunities to the optimum extent possible.

3. Development Control

Restrict development only to that which provides optimum utilization of the resources for maximum public benefit;

ensure that such development is carried out in strict accordance with all appropriate Federal, State, county, and park laws, ordinances, and regulations.

4. Environmental Protection

Utilize resource management techniques that will assure conservation of the inherent resources; adhere to environmentally responsible construction and maintenance procedures to ensure protection of the land and water quality; encourage and participate in planning and development of integrated, sewer, water and refuse systems.

5. Circulation Systems

Provide, through cooperation, planning, and development, adequate circulation systems both within the area and in the surrounding region to assure full enjoyment of park resources, with maximum safety and convenience to the visitor.

6. Visitor Protection

Make provisions for public safety through well-planned development, adequate staffing, and water safety and law enforcement programs.

7. Land Acquisition

Acquire lands necessary to fully and effectively implement the plan.

8. Information/Orientation

Provide the visitor with information regarding facilities, vacancies, recreational opportunities, and applicable regulations at Lake Berryessa and in the surrounding region.

9. Comprehensive Planning

Adhere to a periodically up-dated comprehensive plan for the lake; support, encourage, and participate in regional and local comprehensive planning efforts.

10. Urban Impacted Residents

Provide recreational opportunities that are meaningful in meeting the needs of the residents of urban impacted areas; coordinate and cooperate with other agencies to assure access to these opportunities.

11. Architectural Control

Initiate and maintain architectural controls to assure esthetic qualities that are harmonious with the environment.

12. Environmental Education

Encourage and foster an environmental ethic by involving regional school systems and other organizations in an environmental education program that utilizes the facilities and resources of the park.

13. Research

Encourage research programs in sociological and natural sciences compatible with the recreation use of the area.

III. GOAL

The Goal of this Plan is to provide a document that will guide development and management programs which will fulfill the purpose and objectives.

THE PLAN CONCEPT

I. GENERAL

The concept for development and use of Lake Berryessa must be relevant to and reflective of the stated purpose of the area and the objectives under which the area is to be managed. The purpose and objectives are the conceptual base upon which all proposals are built. Action programs that implement the proposals ultimately fulfill the purpose and the management objectives.

Proposed use patterns and facilities are determined through an analysis of the needs and demands generated by the service region superimposed upon the opportunities and constraints inherent in the identifiable natural resources, taking into consideration local planning programs.

All proposals are made in accordance with the land use policies inherent in Federal ownership and stewardship of land and Public Law 91-190, the National Environmental Policy Act of 1969.

The spirit and intent of Public Law 91-190 can best be reflected by quoting it in part. Although this plan is primarily concerned with recreation, the principles espoused in the act are of as great concern here as elsewhere.

It is the continuing responsibility of the Federal Government to use all practicable means consistent with other considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources to the end that the Nation may--

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The concept that development and use of Lake Berryessa should reflect the needs of nearby urban areas is well stated in the Recreation Appendix of the "California Region Comprehensive Framework Study:"

Perspectives of the nature of the recreation environment have changed with our increasing social awareness. In particular, we have come to recognize recreation as an essential human need in a complex and troublesome age. From this point of view, recreation is not simply a luxury of leisure, but a requirement for well-being and social stability. In attempting to fulfill this need, demands on all levels of government have assumed a new direction and urgency. The implications of this social responsibility have yet to be fully expressed, but it is clear that our programs and perception have been lacking.

Furthermore:

It is evident that natural resources and land use are intimately tied to the urban milieu and that their value has assumed a social and cultural significance uncommon in the past. The frontier mythology that ownership gave unlimited authority to use and abuse with laissez-faire discretion is no longer tenable. Instead, we should seek to substitute the concept of trusteeship for (that of) exploitation.

The vexing paradox of conservation of the resource against use of the same resource becomes paramount at this point. The interactions and conflicts inherent in use by today's public versus conservation for our progeny must be recognized, confronted, and resolved. Further complicating the picture is the obvious need to retain private capital to provide at least a portion of the services at Lake Berryessa.

Lake Berryessa is a Federal project; its resources have regional importance. The responsibility of the Federal Government is to develop and make available to the public of the region an exemplary recreation resource that is responsive to the needs of today and to the demands of tomorrow while protecting the environmental determinants which created it.

II. PRINCIPLES

The solution must be based upon three basic principles:

Understanding

Cooperation

Control

Understanding is the first and perhaps the most difficult principle to achieve. It embodies understanding the positions, desires, needs, and limitations of all parties concerned. It means understanding the limitations and opportunities inherent in the natural resources present. It must bridge the differences of all parties, relegating the vested interests present in the Federal Government, the county, and the concessioners second to the interests of the public.

Cooperation between all parties to achieve mutually desired ends is a necessity. Land utilization of the area inside the boundary must be compatible with adjacent uses controlled by the county. The Federal Government, the county, the concessioners, and others must work in concert to achieve the purpose and objectives of the area.

Control is the final principle--control over the location of uses over the densities of uses, over the means of land utilization, over the throngs of visitors, and over those things that may diminish the quality of the visitor's experience or contribute to the degradation and eventual ruin of the natural resource. Without a viable, usable resource, there cannot be use of any kind at Lake Berryessa.

III. PRIORITIES

Lake Berryessa is public property, and an unusually attractive regional resource. As such, there is incumbent on the managing agency the primary obligation to provide facilities and an environment for public recreational enjoyment. The public use is paramount. Land allocation for private usage should be secondary, and provided only when primary needs have been fulfilled. Under this concept, and in view of other opportunities available within the region, facilities at Lake Berryessa should be primarily oriented toward public use of the lake's waters, with support facilities as needed. Secondary consideration should include land-based facilities not necessarily dependent upon water, such as trails and campsites. Tertiary considerations may be given to

private and/or quasi-private interests, that such uses do not pre-empt land needed for higher order uses.

These priorities should govern all land utilization policies and decisions. This does not mean, however, that facilities in all three priorities may not be developed simultaneously to ensure balanced recreational opportunities and economically viable concessioners.

From an analysis of the natural determinants inherent in the resources, the concepts of the Napa County General Plan, and the needs of the various publics in the region, a concept of use evolves quite readily and naturally.

IV. CHARACTER OF POTENTIAL USE

The natural determinants indicate that the west shore area of the main lake, including the islands, and the water area of the main lake are generally quite suitable for intensive use. Access to the west shore is relatively good, and future road proposals in the vicinity indicate improvement.

Pope and Putah Creeks are isolated by landforms and suggest little if any intensive use, except near their mouths.

The flat eastern shore initially suggested intensive development. However, if the gentle gradient of the adjacent lake bottom, the adversity of the climatic elements, the desirability of a pastoral transition from lake to ridge, and the excellent fishing along the

PUTAH & HOPE CREEKS

- GOOD FISHING.
- "WILD" CHARACTER IN CANYONS.
- POSSIBLE INTENSIVE USE OF CREEK MOUTHS

ROCKY RIDGE & FOOTHILLS

- "OFF-SHAPE" BACKDROP TO EAST.
- TERRAIN & LACK OF ACCESSIBILITY SUGGEST RETENTION OF "WILD" CHARACTER.

FLAT SHORELINE

- GOOD FISHING ALONG EAST SHORE.
- LAND NOT HIGHLY SUITABLE FOR INTENSIVE USE.
- FUTURE CONSIDERATION MAY BE GIVEN TO RELATIVELY LOW INTENSITY DEVELOPMENT. TRANSITION ZONE BETWEEN LAKE & RIDGE.

MAIN LAKE

- GOOD FISHING IN LOVES & ALONG EAST SHORE.
- OPPORTUNITY & RESOURCE FOR DEVELOPMENT OF A GREAT VARIETY OF WATER RELATED USES.
- THE PRIMARY RESOURCE.

GIBSON FLAT, CEDAR BUSHES, SUGAR LOAF

- "OFF-SHAPE" TO WEST.
- TERRAIN, RELATIONSHIP TO COUNTY PLANS, AND DEVELOPMENT POTENTIALS OF ADJACENT SHORELINE SUGGEST APPROPRIATENESS OF DEVELOPMENT TO COMPLEMENT FACILITIES WITHIN TAKE-LINE, AND LIMITED RESIDENTIAL DEVELOPMENT.

FOOTHILL SHORELINE

- BEST SUITED RESOURCES FOR INTENSIVE USE IN SPECIFIC LOCATIONS.
- GOOD FISHING IN LOVES
- GOOD ACCESS POTENTIAL

ISLANDS

- ISOLATED, DISCONNECTED CHARACTER - NO AUTO ACCESS.
- SUITABLE FOR INTENSIVE USE.

LOWER LAKE

- NOT SUITED TO INTENSIVE USE EXCEPT IN SPOTS, MOST OF WHICH ARE NOT EASILY ACCESSIBLE.
- PARTS OF WATER SURFACE APPROPRIATE TO INTENSIVE USE.
- SURROUNDING LANDFORMS SUGGEST RETENTION OF "WILD" CHARACTER.

MONTICELLO DAM

CHARACTER OF POTENTIAL USE IS DERIVED FROM ANALYSIS OF THE INHERENT CAPABILITIES AND LIMITATIONS OF THE EXISTING NATURAL RESOURCES, EXISTING AND POTENTIAL ACCESS, THE NEED FOR BALANCE BETWEEN THE TYPES OF USES, AND THE RECOMMENDATIONS OF THE COUNTY PLAN...



CHARACTER OF POTENTIAL USE

shore are considered, a concept of non-intensive use evolves for this area.

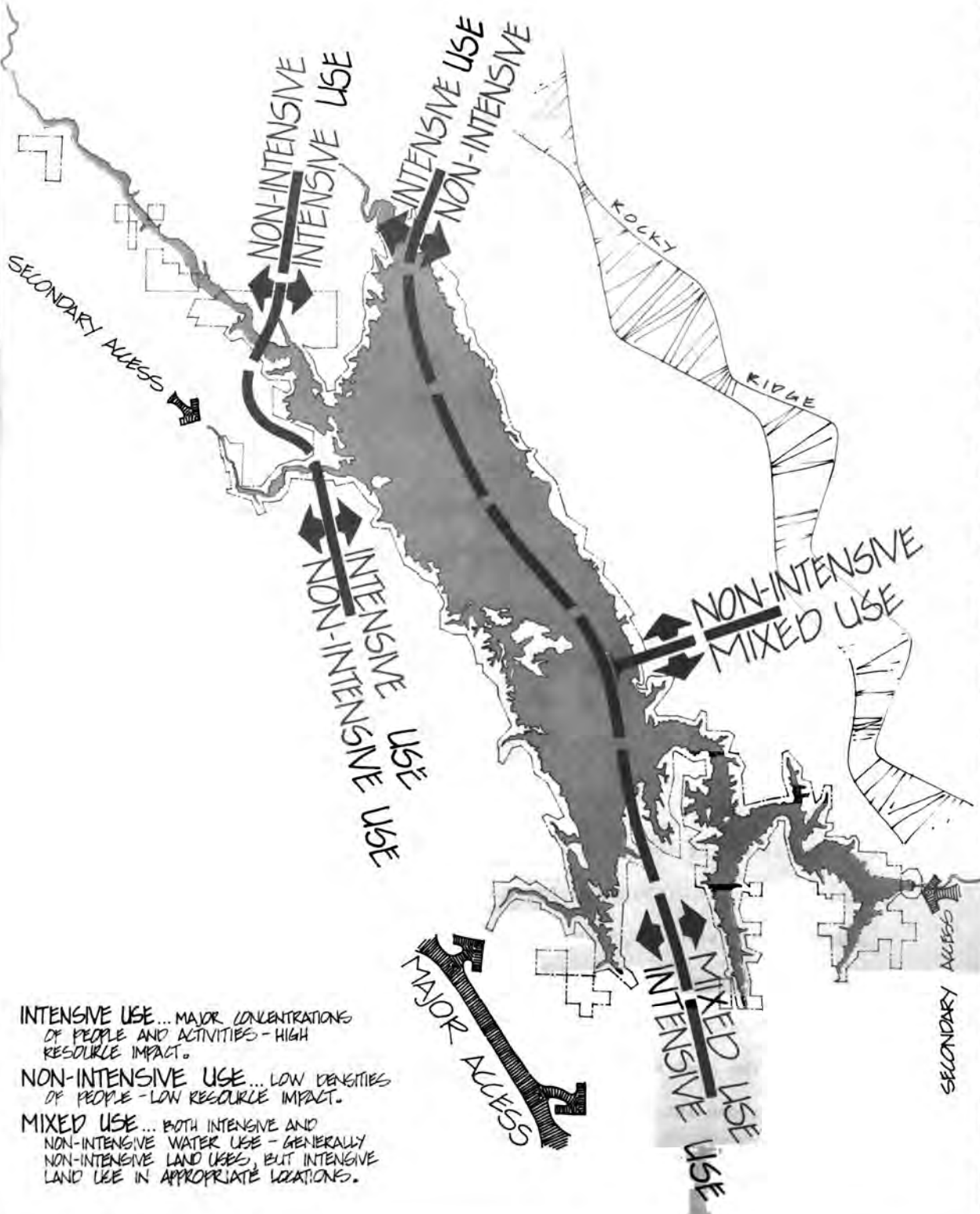
Although the water area of the lower lake is appropriate for intensive use, except in the coves and along the shoreline, the adjacent land area is generally unacceptable for intensive development. A few land areas with good access are suitable for intensive development and for providing desirable access to that portion of the lake.

The lands around the lower lake, along Putah and Pope Creeks and other steep portions along the lake generally suggest that their "wild" undeveloped character be retained. Access to such areas should be limited to foot and boat.

The varied natural determinants of the lake and its environs suggest a variety of uses. Existing access corridors and the various needs and demands of the recreating public further enforce such a concept.

V. USE-ZONE CONCEPT

An analysis of the foregoing factors indicates that Lake Berryessa can readily be divided into three types of use based upon geographic location--intensive use, non-intensive use, and mixture of the two. The western half of the main lake and its shoreline, including the islands with adjacent access corridor, constitute a primarily intensive use zone. The east side of the main lake and Putah and Pope Creeks constitute a non-intensive use zone. The remaining lower lake becomes a zone of mixed intensities of uses.



INTENSIVE USE... MAJOR CONCENTRATIONS OF PEOPLE AND ACTIVITIES - HIGH RESOURCE IMPACT.

NON-INTENSIVE USE... LOW DENSITIES OF PEOPLE - LOW RESOURCE IMPACT.

MIXED USE... BOTH INTENSIVE AND NON-INTENSIVE WATER USE - GENERALLY NON-INTENSIVE LAND USES, BUT INTENSIVE LAND USE IN APPROPRIATE LOCATIONS.

USE ZONE CONCEPT

The planning considerations for Lake Berryessa that must constantly be kept in mind while discussing types of activities and facilities are as follows:

1. Minimum impact on the environment
2. Optimum use of resources
3. Dispersal of use
4. Avoidance of use conflicts
5. Maximization of variety of use in the context of regional needs
6. High quality of all experiences
7. Complementary relationships to county planning
8. No impairment of Solano Project objectives
9. Fluctuation of water level

The priority of land allocation discussed earlier also becomes important at this point.

These concepts together with the intensity of use concepts will guide the remainder of this plan.

Intensive Use Zone

Intensive uses are those which utilize the resources heavily, where densities of people are high, and where impact on the environment is heavy.

This zone is the primary land and water zone which includes all intensive water-based activities and the necessary facilities, such as

marinas and bathhouses. Also included are support facilities such as food services, related picnic areas, and overnight accommodations. Such lands and waters that are not suited to intensive uses should be protected and retained for non-intensive uses, such as fishing, boat access activities, and/or trail related uses. Lands not needed for higher priority uses yet suitable for intensive use may be utilized for quasi-private activities.

Non-Intensive Use Zone

Non-intensive uses are those which do not concentrate people and where there is relatively light impact on the environment.

Inherent in this zone are natural determinants that limit development possibilities. Also, visual relationships to surrounding lands should not be violated by intensive development.

The east side shoreline should be maintained as pastoral landscape--a transition from the lake to the ridge and its foothills. It is the beginning of the primary scenic backdrop to the lake. Appropriate uses include shoreline fishing access and grazing (the latter at least until such time as minor development is warranted or until the pollution from cattle wastes becomes unacceptable).

The Pope and Putah Creek valleys should be retained as essentially "wild" areas with bank fishing, slow boating, boat fishing, and hike-in and/or boat-in camping as the predominant uses.

Mixed Use Zone

As has been previously discussed, uses in this zone are a combination of the previous two types of use. The appropriateness of the types of feasible access. Therefore, examples of all the previous activities and facilities can be expected within the zone, ranging from retention of the "wild" character and complementary activities to the most intensive type of development including marinas, overnight accommodations, etc.

Moskowite Corners Area

Because of the confluence of access routes, an information/orientation center for both Lake Berryessa and the surrounding region is desirable in this area. Availability of facilities, location of activities, reservations, directions, etc., could be conveniently and centrally located in this area.

Reclamation Zone

All recreational uses are excluded from this zone with the exception of an overlook at the dam.

Ridge Backdrops

The county proposals for land use of Rocky Ridge and its foothills and the Gibson Flat/Cedar Roughs/Sugarloaf chain are supported by this plan.* Extensive subdivision or urban-type developments in

*Proposed Napa County General Plan

PUTAH & HOPE CREEKS

- KETAIN "WILD" CHARACTER
- BOAT-IN AND HIKE-IN CAMPE
- FISHING - TRAILS - SLOW BOATING

ROCKY RIDGE & FOOTHILLS

- SUPPORT COUNTY PLAN TO PRESERVE WILDNESS OF CHARACTER AND MAINTAIN BACKDROP VIEW TO THE EAST.

EAST SIDE

- MAINTAIN SHORELINE AS RURAL LANDSCAPE - TRANSITION FROM LAKE TO RIDGE - POSSIBLE CONSIDERATION FOR DUDE RANCH TYPE DEVELOPMENTS IN FUTURE.
- EAST PORTION OF LAKE NON-INTENSIVE USE ZONE, PRIMARILY FISHING.

GIBSON FLAT, GEMAR ROUNDS, SUGAR LOAF

- SUPPORT COUNTY PLAN TO KETAIN ESSENTIALLY RURAL CHARACTER - RESIDENTIAL & FACILITIES TO COMPLEMENT RECREATION DEVELOPMENTS IN SUITABLE SITES.

WEST SIDE

- PRIMARY LAND AND WATER INTENSIVE USE ZONE - LAND & WATER INTERFACE FACILITIES AND SUPPORT FACILITIES ON SUITABLE LANDS.

- MENICKING - CAMPING - MAKING - LAUNCH FACILITIES - CONCESSIONS - OVERNIGHT ACCOMMODATIONS - ADMINISTRATIVE FACILITIES - ETC.

- COVES, SHORELINE, & LANDS NOT APPROPRIATE FOR INTENSIVE USE TO BE RETAINED FOR FISHING, BOAT ACCESS ACTIVITIES, TRAIL RELATED USES, OR OTHER NON-INTENSIVE USES.

LOWER LAKE

- LIMITED LAND-BASED INTENSIVE USE & AUTO ACCESS.
- SURROUNDING LAND SHOULD REMAIN VISUALLY "WILD" WITH DEVELOPMENT ONLY AT A FEW SELECTED SITES.
- WATER AREA FOR BOTH INTENSIVE & NON-INTENSIVE USE - CENTRAL LAKE INTENSIVE, EDGES NON-INTENSIVE.
- LAND USES PRIMARILY BOAT-IN & TRAIL RELATED.

MOSKOWITZ CORNERS

INFORMATION - ORIENTATION CENTER

PLANNING CONSIDERATIONS

1. MINIMUM IMPACT ON THE ENVIRONMENT.
2. OPTIMUM USE OF RESOURCES.
3. DISPERAL OF USE.
4. AVOIDANCE OF USE CONFLICTS.
5. MAXIMIZATION OF VARIETY OF USE IN THE CONTEXT OF REGIONAL NEEDS.
6. HIGH QUALITY OF ALL EXPERIENCES.
7. COMPLEMENTARY RELATIONSHIPS TO COUNTY PLAN.
8. BOND IMBURMENT OF SOUND PROJECT OBJECTIVES.
9. FLUCTUATION OF WATER LEVEL.



RESOURCE USE CONCEPTS

either of these areas could negate the attractiveness of Lake Berryessa as a regional recreation area as well as violate those natural characteristics that lend uniqueness and desirability to the environs.

VI. OPTIMUM CAPACITY CONCEPT

An additional and extremely important concept that must be considered is the concept of Optimum Capacity.

All resources have innate capacities for use--the numbers of people who can be accommodated while maintaining the quality of their experience and safety without resultant irreversible damage to the resources. This level of use is the optimum capacity. Optimum capacity is indefinable in objective terms and involves a number of subjective judgments. The total optimum capacity for any recreation area is the sum of the capacities of its various parts. The quantity of specific facilities provided is tied directly to the capacities of both the resource which that facility is to serve, and the resource on which the facility is built.

Similarly, land use practices can affect optimum capacity. The concept of optimum capacity is based on an assumption of land use practices which minimize environmental degradation.

Although use may exceed the optimum capacity on peak visitation days such as Memorial Day, Independence Day, and Labor Day, irreversible and irretrievable environmental damage would not usually occur in this short period of time.

The development of an optimum capacity for Lake Berryessa will be covered in a subsequent section of this report. At this point, it is necessary only to introduce the concept because of its importance in the planning process.

MANAGEMENT ALTERNATIVES

I. GENERAL

The basic objectives of the management alternatives considered in this section of the plan are as follows:

1. To identify merits and limitation of each alternative
2. To identify various actions necessary for implementation of each alternative
3. To recommend the most desirable management alternative

The management of Lake Berryessa, whether accomplished directly by the Federal Government or through another governmental agency, should conform to the greatest extent possible to the standards expected by the public for a Federal recreation area. Lake management should establish and enforce policies that will benefit the general public and be consistent with wise resource use which take precedent over all other interests or considerations.

The following principles are recommended as providing the basis for all management decisions and policies.

Resource Management: Public outdoor recreation shall be recognized as the basic resource management purpose. Natural resources located within the area may be utilized and managed for additional purposes, if such uses are compatible with the fulfillment of the recreation purposes of the area.

Resource Use: Primary emphasis shall be placed upon providing outdoor recreation activities for the general public in a pleasing environment compatible with the original project purposes.

Physical Developments: The scope and type of developments, as well as their design, materials, and construction, should enhance and promote the use and enjoyment of the recreational resources of the area in accordance with the National Environmental Policy Act of 1969 (Public Law 91-190).

The following alternatives assume that:

1. The Federal Government would purchase all existing utilities, roads, launching ramps, and structures from the present concessioners, and assume the responsibility for such services as maintenance, garbage collection, water supply, and sewage treatment.
2. The concessioners would continue to provide recreation services to the public.
3. New fee arrangements, rental rates, etc., would have to be negotiated between the Federal Government and the concessioners.

The reasons that the above actions are necessary are:

1. Greater direct control over the quality of development
2. Implementation of the concepts of this plan without undue hardship on existing concessioners.

3. Greater flexibility for change and elimination of existing undesirable structures, facilities, and/or uses
4. Maximum public use and enjoyment with minimum adverse environmental impact
5. Single agency control of the development and use of Federal recreation resources

The basic disadvantage is the high initial cost to the Federal Government. However, this disadvantage is offset by the quantity and quality of service and facilities that could be provided.

Two alternatives are considered feasible.

II. ALTERNATIVE A: NATIONAL RECREATION AREA

In terms of regional significance and in view of the need for the creation of urban recreation areas, Lake Berryessa might qualify as a national recreation area. Some of the presumed advantages of such designation are as follows:

1. A level of government management consistent with the importance of the area to a large regional urban population.
2. Greater direct public accountability.
3. More direct control of the use of private capital in the provision of necessary facilities at Lake Berryessa.

4. Greater funding possibilities from Congress.
5. Expertise in recreation area management.

Implementation of this alternative is dependent upon enactment of appropriate Federal legislation.

III. ALTERNATIVE B: STATE RECREATION AREA

This alternative envisions management of Lake Berryessa as a state recreation area with Federal subsidization in two aspects.

1. The Federal Government would purchase existing private interests as enumerated earlier and transfer such acquired rights to the State.
2. The Federal Government, through some type of revenue sharing arrangement, would subsidize State management operation, and development activities. Since Lake Berryessa is a Bureau of Reclamation project, it is logical that such revenue sharing be accomplished through the Bureau's programmed funds.

There are no important apparent disadvantages to this proposal. Advantages would be similar to those enumerated under Alternative A.

Implementation of this alternative would be contingent upon passage of appropriate legislation by both the California Legislature and the Congress of the United States.

The foregoing two alternatives are the only ones considered. Management by other agencies is not recommended because any other arrangement would not be consistent with the Federal investment and would not recognize the regional importance of the area.

IV. RECOMMENDED ALTERNATIVES

By application of the criteria set forth in the Recreation Advisory Council's Circular No. 7, "Non-Federal Management of Recreational Facilities on Federal Lands and Waters," it appears that Federal management is appropriate for Lake Berryessa. Alternative A, the establishment of a national recreation area, appears to be the most desirable in view of the significance and the opportunities inherent at Lake Berryessa. This national recreation area would complement rather than duplicate the types of recreational opportunities of the proposed Golden Gate National Recreation Area, providing a well-rounded, highly varied array of quality recreation opportunities for the urban residents of the greater San Francisco/Stockton/Sacramento region.

However, until a national recreation area is established, interim arrangements are necessary as follows:

1. Existing agreements should remain in effect
2. Expansion of existing "resort areas" should be curtailed
3. Management practices consistent with this plan should be implemented

4. The Bureau of Reclamation should seek appropriations to develop public use facilities in conformance with this plan.
5. A water quality monitoring system should be implemented
6. Any existing sewage treatment inadequacies should be corrected.

Alternative B, State management with Federal subsidization, is also acceptable provided proper authorities were secured.

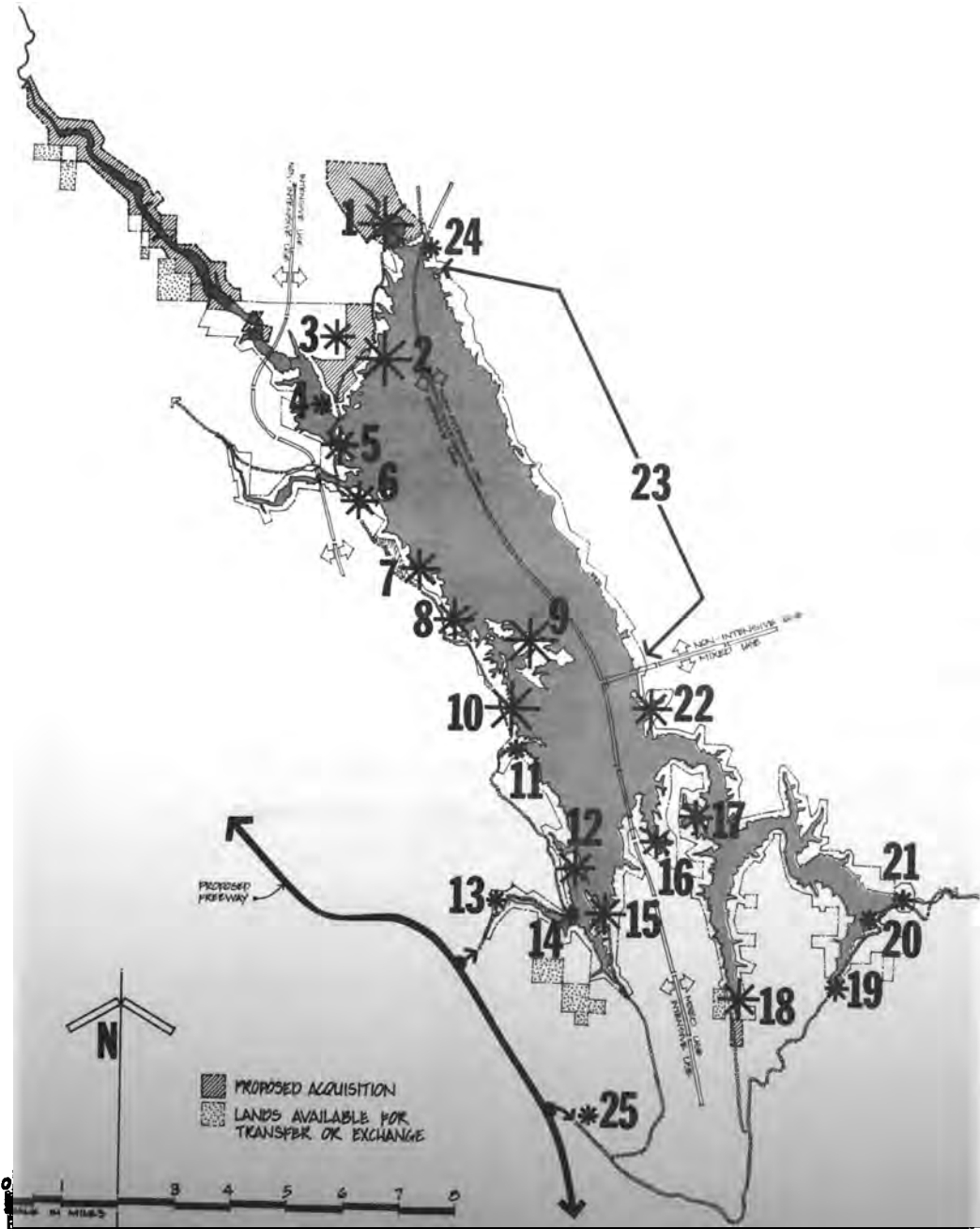
Continuation of the existing agreement, management by Napa County, is not considered acceptable for the following reasons:

1. Management by a county does not recognize the regional importance of the area as evidenced by the fact that approximately 95 percent of the use is from outside the county.
2. Historically, the combination of county management and private funding has not demonstrated the ability to provide the public with the quality and variety of recreational opportunities expected in a Federally owned recreation area.

RECREATION DEVELOPMENT PLAN

The Recreation Development Plan is the next sequential step in the planning process, i.e., supplying specific facilities and uses in accordance with the concepts developed previously. The plan is conceptual in nature and does not delineate relationships of facilities and uses within each development area, nor does it attempt to define amounts or numbers of facilities or people served. It is a description of the types of facilities and uses to be provided and operated at general locations by both concessioners and public agencies. Such facilities and uses are proposed in order to assure maximum opportunities inherent in the previously defined concepts.

The plan as presented at this point is recommended as a logical application of all the concepts discussed earlier.



RECREATION DEVELOPMENT PLAN

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ROAD ACCESS																									
MARINA																									
LAUNCHING RAMPS																									
BERTHING																									
FISH CLEANING FACILITY																									
BANK FISHING ACCESS																									
COURTESY DOCKS																									
CAR-TOP BOAT LAUNCH																									
FISHING FLOATS																									
TRAILER PARK																									
RESTAURANT																									
STORE																									
REFRESHMENTS																									
FAMILY CAMP																									
GROUP CAMP																									
PICNICKING																									
SWIMMING																									
OPEN PLAY AREA																									
INFORMATION/ORIENTATION																									
MOTEL																									
SANITARY FACILITIES																									
FERRY TERMINUS																									
BATHHOUSE																									
HIKING TRAILS																									
BIKE TRAILS																									
OVERLOOK																									
BOAT BASIN (NON-POWER)																									
AMPHITHEATER																									

RECREATION DEVELOPMENT FACILITIES MATRIX

IMPLEMENTATION REQUIREMENTS

I. EXISTING DEVELOPMENT

The existing development at Lake Berryessa, with the exception of the park headquarters complex, consists of seven concession-operated franchise areas and has been built entirely with private capital. The investment is extensive, amounting to over \$7,000,000.* The bulk of the investment consists of mobile home developments, boat launching ramps, marina facilities, stores, motels, and related support facilities and utilities. Some of these developments have been carried out well; some are minimally acceptable; some are totally unacceptable. Some of the most acceptable developments include the boat launching ramps and related marina facilities, although variations in quality exist among the concession areas. These ramps handle nearly 300,000 boats per year, and up to 4,000 boats on a peak day. The latter places the water resources of the area at or near boating capacity, based on State of California criteria. Public use facilities are minimal throughout the area, although some attempts have been made to provide areas and facilities for these uses.

Although the expenditures that have been made are impressive, when analyzed in the perspective of total amount of development dedicated to public use (as opposed to permanent or quasi-permanent individual use), the amount of appropriate development is minimal.

The existing franchise areas are the only areas developed for use. Although an area just north of park headquarters is designated for "public use" and is used heavily, no facilities have been provided other than chemical toilets and refuse cans.

Cars are parked at random along the highway right-of-way.

The development within the franchise areas has been centered primarily around the mobile homes, creating essentially private or quasi-private residential areas. Such development is objectionable in that encroaches upon the shoreline thereby denying public access and utilizing space needed to satisfy future demands.

Construction techniques employed by concessioners have in many cases caused excess cuts and fills resulting in unsightly, erosion-prone scars, which mar the natural beauty and contribute to the deterioration of the lake and its environs.

Single docks line the shoreline in many places, impeding public access, adding to the degradation of the natural beauty, and possibly contributing to the acceleration of eutrophication in the lake due to heat absorption.

Little has been done to provide safe, guarded swimming areas. Campgrounds that do exist are few in number, generally poor in quality and have often been turned into the more lucrative, easier to manage mobile home sites. The public demands for water-oriented play spaces have been

neglected, primarily through lack of funds for the development and maintenance of such areas.

The following sections of this plan will propose actions in support of the Recreation Development Plan not only to correct past and present deficiencies while retaining that which is well done and appropriate, but also to present methods by which the greater public interest can be well served.

II. OPTIMUM CAPACITY

There are numerous conditions, factors, constraints, etc., that must be considered and evaluated when estimating optimum capacity for a recreation area. In estimating the optimum capacity for Lake Berryessa, the following four major factors were considered:

1. Carrying capacity of the lake's water surface. The average surface acreage for mid-July, the height of the recreation season, was calculated by using weather data from the past 100 years (1866-1966). Assuming that all water commitments for the Solano project were met, the average mid-July surface acreage was estimated to be 16,500 acres.

A figure of 4 acres per boat was used to estimate the boating capacity. This includes water skiing, fishing (by boat), pleasure boats, and non-powered boats.

2. The carrying capacity of lands within the Federal boundary surrounding the lake. The development plan proposes that primarily those lands with slopes less than 15 percent be developed and the remaining areas be used for open space, off

scape, and hiking trails. Land area is not a critical control factor since additional lands, could be acquired if needed to provide the necessary recreation facilities.

3. The carrying capacity of existing roads providing access to the lake. It has been estimated by using State traffic counts and other design data that the present road system providing access to the lake can carry an estimated optimum capacity of about 2,800,000 annual visitor days.* Again this is not a static figure and can be increased by improving and upgrading existing roads or by constructing new highways or other types of transportation systems that will accommodate additional vehicles or people.

4. The carrying capacity of existing sanitary facilities, mainly sewage treatment facilities. The capability of collecting and properly disposing of or treating sewage and other refuse resulting from recreational use of the lake is a controlling factor because it has a direct bearing on the water quality of the lake. However, adequate sewage treatment can be provided if sufficient funds are available.

The estimated optimum capacity of Lake Berryessa is about 8,700,000 annual visitor days. This estimate was calculated under the assumptions that the lake had an average surface

*A visitor day is defined as one person participating in one or more recreation activities during any part of a 24-hour day.

acreage of 16,500 in mid-July, that Federal lands surrounding the lake were adequately developed for recreation, and that adequate access and sewage treatment facilities existed.

The lake and adjacent Federal lands should accommodate this estimated optimum capacity without undue damage to the recreation resource or to the natural amenities if the provisions set forth in this plan are followed.

III. DEVELOPMENT CONTROLS

The control over location, type, design, and quality of all development undertaken at Lake Berryessa is necessary to ensure that all facilities are compatible with the purposes of the reservoir and are responsive to the environment in which they are located. All development should be in accordance with the Lake Berryessa Recreation Development Plan, individual area development concept plans, and all applicable Federal, State, and county regulations. No exception from ordinances which apply to the rest of the Berryessa Basin should be made within the Lake Berryessa boundary, except in cases where control achieved through regulations that apply only within the boundary are more strict than those that apply outside the boundary.

Franchise agreements between the managing agency and concessioners should be reviewed and renegotiated to include legal control over development practices to ensure that such practices are at all times consistent with the currently approved Lake Berryessa Recreation Development Plan.

All development (both public and private) within developed areas should be in accordance with professionally prepared plans.

Specific controls, regardless of the managing agency involved should include the following recommendations.

Utilities

All utility lines should be placed underground in future developments; a program initiated to eventually place all existing utilities underground.

Visual Form

All developments should be sensitively sites to reflect the natural patterns of the land, and all should be designed to harmonize with their sites. Roads, wherever possible, should follow the contour of the land. Structures should complement existing landforms, have pleasing views, and relate to each other in form, arrangement, color and choice of material, and reflect a unified appearance as an individual part of the total development.

Parking

Adequate parking space, designed as part of each development, must be provided for each function.

Storage and Service

Buildings are to be serviced in areas screened from public view. Extensive storage is likewise restricted to areas out of public view. Storage of unnecessary materials and equipment should not be allowed.

Landscaping

All developments should be fully landscaped, including appropriate street furniture, building materials, and wherever possible, native plant materials. Landscape rehabilitation programs should be instituted to negate the effects of cutting and filling.

Emergency Access

All parts of every development must be readily accessible to all emergency vehicles.

Sign Control

All signs within the Lake Berryessa boundary should conform to an approved sign program. Such a program should define standards of design and sign use.

Mobile Homes

The following recommendations should apply to all mobile home parks within the boundary and are considered an addition to the State of California Health and Safety codes or applicable county ordinances in lieu of the California codes.

Development Location: All mobile homes should be located entirely within the areas where they presently exist.

Positioning: All mobile homes shall be so positioned on their lots that they may at any time be hooked to towing vehicles for removal from their sites.

Parking: At least two parking spaces shall be provided within each mobile home park for each mobile home. No boat and/or boat trailer shall be parked at a mobile home site or at any other place within a mobile home park for more than 12 hours without the prior written approval of its concessioner.

Shade Structures: Such structures may be installed provided that:

- a. they are in accordance with spacing requirements between mobile homes
- b. they are commercially manufactured or professionally constructed
- c. they are constructed in such a manner that they are easily removable from a site
- d. they are of no greater height than the mobile home which they serve
- e. they do not exceed the length of the mobile home or 10 feet in width, and restricted to only one side

Fences: No fence in excess of 36 inches in height shall be installed unless approved in writing by the concessioner. Any mobile home occupant who fails to maintain a fence in good repair shall be requested to remove the fence by the managing authority.

Foundations: No permanent foundation shall be erected for mobile homes.

Decks: Decks may be installed provided that they conform to spacing requirements, are adjacent to the mobile home, are no larger in size than shade structures, and can be easily removed.

Storage Facilities: Exterior storage structures are permissible if commercially manufactured or professionally constructed and meet the requirements of the California State Health and Safety codes.

Vegetation: Planting or landscaping of a site is permitted provided that:

- a. no planting or landscaping shall be done in front of a mobile home, which obstructs the removal of the mobile home from its site
- b. screening or planting do not create hazards for vehicle movement within the mobile home parks.
- c. landscaping does not alter the existing terrain or impede normal drainage patterns, unless approved by the managing agency.

Walks, Walkways, Patio Slabs and Retaining Walls: No mobile home site occupant shall construct on or between sites any permanent walks, walkways, patio slabs, retaining walls, or other such structures.

Parking Requirements: The overall parking ratio shall be two parking spaces per mobile home lot. At least one parking space shall be provided on and immediately adjacent to each mobile home lot.

Trailer Parks

Pertinant mobile home regulations, as well as State and county codes and ordinances should apply to trailer parks.

Applicability

The above regulations should apply to all mobile homes or recreational travel trailers following adoption of this plan, including those presently existing.

Sewage Treatment Facilities

Provision for acceptable sewage treatment facilities should be made prior to any additional demand being placed on existing facilities. Facilities that are presently inadequate should be brought up to standard immediately.

Each marina should have facilities necessary to service boats with sealed heads and self-contained units.

Individual Moorings or Private Docks

All individual moorings or docks should be removed or, if built to managing authority specifications, incorporated in concessioner's marina or berthing facilities.

Stairs and Seawalls

No private stairs to the shoreline should be allowed, and those presently existing should be removed. No seawalls should be allowed, except as specifically approved by the appropriate managing agency.

Public Access Zone

Public access to the normal water level elevation of 440 feet should be established around the entire lake.

Interior Roads

All interior roads should be paved (not merely oiled), all slopes rounded and stabilized, and all circulatory directions clearly marked.

IV. ENVIRONMENTAL PROTECTION

The management of Lake Berryessa should utilize resource management techniques, which will assure conservation of the inherent resources as follows.

Recognition of Optimum Capacity

A primary concept in managing Lake Berryessa is the concept of optimum capacity. Unless further research and experience show otherwise, the maximum number of people who should be allowed to use the resources at Lake Berryessa (with the exception of peak days such as Memorial Day, July 4th, and Labor Day) will be in accordance with the optimum capacity as discussed earlier.

Water Pollution Abatement and Control

The management of Lake Berryessa should strive to maintain the quality of all waters originating in or flowing across the Federal lands through:

- a. provision of adequate sewage treatment and disposal for all public use facilities, including self-contained waste storage units on boats

- b. control of erosion
- c. regulation and control, as necessary, of fuel-burning water craft
- d. avoidance of contamination by lethal substances, such as certain pesticides
- e. regulation of the intensity of use in certain areas and at certain times, when determined necessary, based upon water quality monitoring
- f. entering into cooperative agreements or compacts with other agencies and governing bodies for cooperative measures to avoid water pollution from all sources

Air Pollution

The management of Lake Berryessa should work with others in the air shed to reduce air pollution from all sources. Fumes and smoke from campfires, refuse burning, and other kinds of combustion should be controlled in all developed areas to the extent necessary to meet regional clean air standards.

Solid Waste Disposal

Wastes generated within the area may be disposed of within the area at locations approved by the managing agency. Most waste disposal should be accomplished outside the Federal boundary because of limited space and proximity to the water; however, feasible locations

may exist on Federal properties. Disposal areas should not (1) pollute water or air, (2) result in the defacement of public recreation areas, or (3) result in destruction or impairment of important natural resources.

Soil and Moisture Conservation

Emphasis should be placed upon the prevention and correction of erosion and vegetation deterioration, using such methods as planting the cut and fill slopes, irrigation, etc.

Fire Control

Each developed area should be prepared to control structural as well as non-structural fires, and cooperative and support agreements should be continued with local fire departments.

Plans and provisions, including burning and campfire regulations, should also be made for deterrence and control of grass and forest fires.

Quality of Environment

To achieve the recreation purpose of Lake Berryessa, planning and management must be related to the area's total environment. Such planning and management must recognize the need for transportation arteries; utility and communication corridors; consumptive resource uses; and residential, commercial, and recreational land uses within the surrounding region.

The management of Lake Berryessa should be alert to peripheral use and development proposals that impinge on the environment of the area

and should encourage cooperative planning among public agencies, organizations, and individuals having responsibility for maintaining the quality and esthetics of the environment surrounding the area.

Insects and Diseases

Control of native insects and diseases should be limited to:

- a. outbreaks threatening to eliminate the host from the ecosystem or posing a direct threat to resources outside the area
- b. preservation of scenic values
- c. maintenance of shade trees in developed areas

If non-native insects or diseases become established or threaten invasion of the area, advice and assistance should be requested from the County Agricultural Commissioner.

Sewage Treatment

A separate study of existing sewage treatment facilities was conducted as a part of the background information collected and analyzed during preparation of this report. The following recommendations are drawn from that study.

Possible enrichment of the water with nitrogen and phosphorous nutrients from man-induced wastes is believed to be the most serious threat to the ecology of Lake Berryessa at the present time.

It is recognized that any significant increase in nitrogen and phosphorous content of the lake water must be prevented because enrichment of the water with these nutrients will promote undesirable algae growth, which detracts from the recreational value of the lake and speeds the natural ageing process. Adequate treatment and disposal of all domestic wastes in the Lake Berryessa Drainage Basin is of utmost importance, as sewage is rich in nitrogen and phosphorous, and these nutrients are not generally removed by conventional sewage treatment processes.

The following recommendations apply to wastes generated within the Federal boundary, although it is recognized that wastes generated outside the boundary will have to be controlled to maintain the quality of the lake water.

1. Septic tanks should be inspected on a regular basis and cleaned as necessary.
2. All pond construction should conform to Napa County Health Department design criteria.
3. The Lake Berryessa environment can best be protected at the present stage of development by discharging all domestic sewage or sewage effluents to non-overflowing waste stabilization lagoons for final disposal.

4. Those lagoon systems serving Rancho Monticello and Berryessa Marina are generally poorly located and overloaded under present conditions. Measures should be taken to correct these problems.
5. It is strongly recommended that Napa County undertake, in the near future, a basin-wide study of future sewage treatment needs with consideration given to the creation of one or more sewage treatment districts for the entire basin.

Appropriate Federal agencies should participate in such a study and encourage the implementation of its recommendations.

Water Supply

The water supply for the developments at the lake is pumped directly from the lake and treated by filtration and chlorination. Samples of the treated water are collected monthly, examined by the County Health Department laboratory, and routinely meet Public Health Service drinking water standards for bacterial quality. However, there are occasional complaints from consumers regarding high turbidity. This is the result of bank erosion coupled with wave action. Therefore, some intakes should be relocated farther off shore in deeper water or additional treatment should be provided.

Water Quality Monitoring

A water quality monitoring system should be instituted at the lake to detect any deterioration in water quality and it should include both

bacterial and nutrient content analysis.

V. ACCESS AND CIRCULATION

Access to and circulation within the park and its individual components is an aspect of the plan that deserves very careful consideration, in that it contributes to functional development as well as safe and efficient means for moving people and/or their vehicles. Lack of proper access may deny full utilization of the resources. Conversely, access that is too convenient or access by improper modes can destroy the very experience and environmental quality which that access was meant to give.

Efficient means of moving people and cars in and out of the Lake Berryessa area, of storing boats not in use, and for changing transportation modes (such as from car to boat) are essential for both the conservation of the area and its effective utilization.

Although the lack of good access has undoubtedly saved the resources of Lake Berryessa from overuse, the need for better access will increase. The proposed Wooden Valley/Chiles Valley freeway would serve the Berryessa area very effectively.

Access to the developed areas must be from Route 128/Knoxville Road spine. Existing access points are generally well located. Additional access points to serve proposed developed areas should be carefully located and kept to a minimum. Acceleration and deceleration lanes

should be provided where necessary.

Circulation within the park will continue on the Route 128/Knoxville Road spine, which also serves private developments along this corridor. Some improvement of this corridor may become necessary.

Circulation within developed areas should be clearly defined and serve all uses with a minimum of conflict. Existing circulatory systems range from excellent to poor, with the poor examples being largely confined to some mobile home areas in which road systems are often confusing and poorly laid out.

A corollary to good circulation systems is adequate parking facilities for each use, thus relieving the need to park on roadsides, turf areas, and other makeshift locations.

Trail access to hike-in camps, the east side, etc., will need to be developed and must be supported by adequate parking areas.

Boat access will need to be supported by provision of suitable landing sites, either in the form of grounding areas or courtesy docks.

Access to the islands, the non-intensive use areas, and the lands to be left "wild" in character will be primarily by boat or foot. In most cases, such modes of transportation are mandatory because of natural limitations. Prohibition of auto access to these areas will also serve to control levels of use and thereby ensure retention of the desired character.

Access from the mainland to Big and Little Islands is proposed to be accomplished by some type of ferry arrangement or by private boat. Such an arrangement would preserve the character of detachment from the mainland. Occasionally pedestrian access will occur during periods of low water; however, a feeling of detachment will remain because of the barrenness of the exposed land.

Facilities necessary to support such access would include ferry docks on both the mainland and the islands, courtesy docks for private boats on the islands, and parking facilities on the mainland in close proximity to the ferry terminus.

Access to Lake Berryessa for recreational flying enthusiasts is needed to some degree and may well become more important as time goes on. If demand at the lake becomes great, an airstrip should be considered. Possible location within and outside the boundary should be investigated and an appropriate selection made.

Finally, circulation systems should be clearly depicted on informational material given out to visitors. If such information is readily and easily available, a great majority of the problems caused by visitor confusion can be eliminated.

Studies for alternative means of mass transportation within the area and from core metropolitan areas should be made to alleviate congestion on the Route 128/Knoxville Road spine, and for the allocation of large land areas for parking as optimum capacity is reached in the future.

VI. VISITOR PROTECTION

Visitor protection is a highly important management responsibility, and although it is not readily apparent to most visitors, it is instrumental in providing a high quality recreation experience.

Staffing

Staffing should correspond to the pace of development and to the increased visitation.

Police Protection

A core staff of law enforcement officials are maintained as park staff, and existing agreements with the Napa County Sheriffs office should be continued. Services and protection now offered must be augmented to correspond to increasing visitation to the Lake Berryessa area, with special provisions for periods of high use such as weekends and holidays.

Water Safety

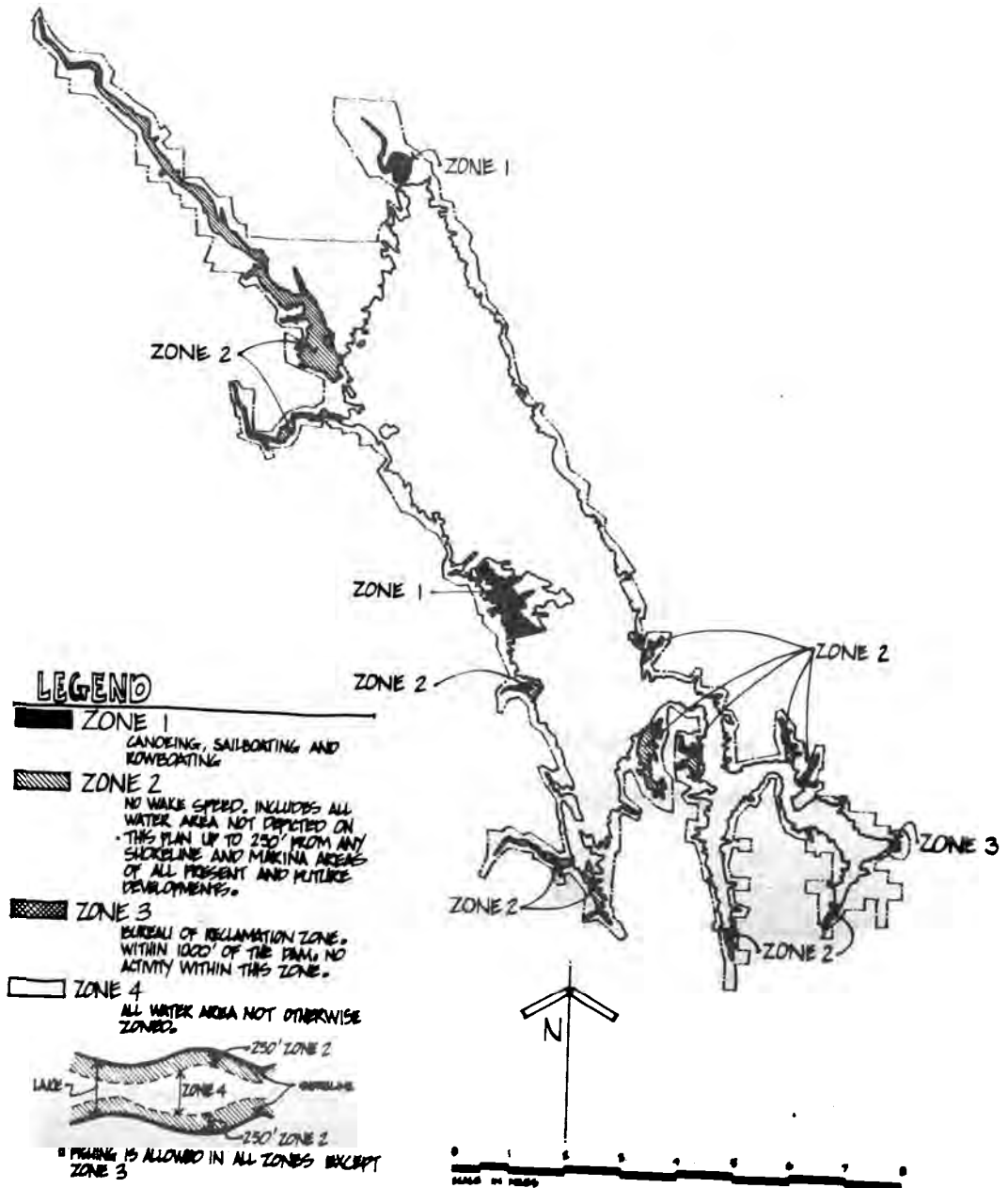
Water safety programs should be encouraged and enforced. A water-use zoning plan to minimize use conflicts of the water surface follows:

Zone 1 - Reserved for canoeing, sailing, and rowboating

Eticuera Creek, the channel between west shore and Big and Little Islands, and the cove at Spanish Flat.

Zone 2 - No wake speed

All water area within 250 feet from any shoreline, plus Putah and Pope Creeks upstream from Knoxville Road Bridges, the marina



WATER ZONING

area of present and future developments, and all other coves and inlets delineated on the Water Zoning Plan.

Zone 3 - No boating

Bureau of Reclamation area at Monticello Dam, as shown on the Water Zoning Plan

Zone 4 - Water skiing and high speed boating

Remainder of lake over 250 feet from any shoreline.

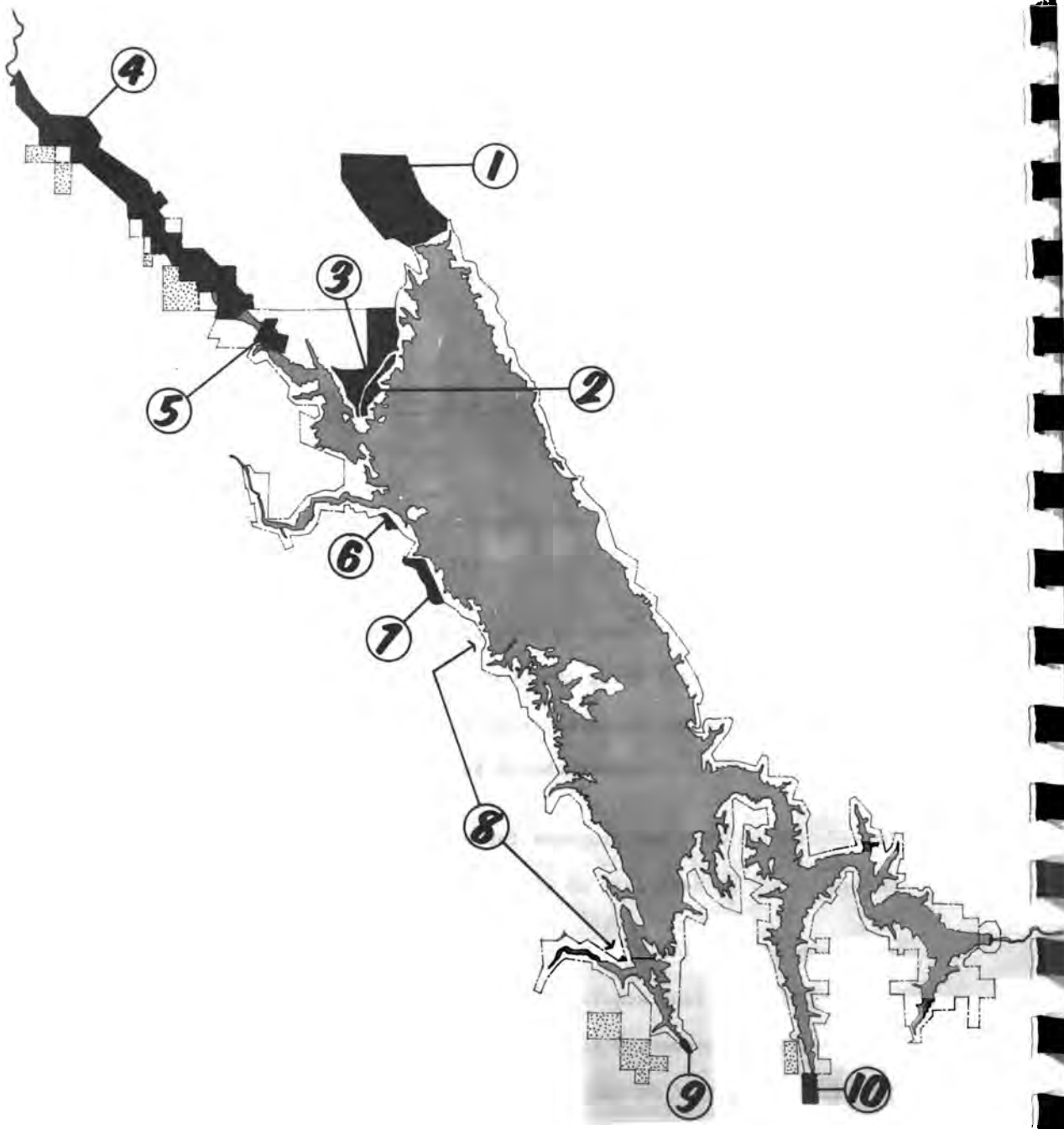
Water skiing should be allowed only between one hour after sunrise and one hour before sunset.

All swimming beaches should be protected by at least one lifeguard at 100 yard intervals along the shoreline. Necessary safety and lifesaving equipment should be readily available at each beach. All beaches that are not guarded should be so posted.




Implementation of other programs for assuring visitor safety and enjoyment may be necessary as visitation increases.

VII. LAND ACQUISITION

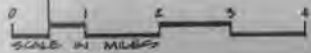
Proposed Federal land acquisition at Lake Berryessa includes those lands which are necessary for implementation of the plan and to further the effectiveness of management policies. Such a program should include disposal of unnecessary parcels presently under Bureau of Reclamation control.



LEGEND:

-  PROPOSED ACQUISITION
-  WITHDRAWN LANDS NOT NECESSARY FOR RECREATION PURPOSES.
-  NUMBERS REFER TO TEXT.

11



LAND ACQUISITION

The following lands should be acquired in fee simple. (numbers correspond to numbers on the Land Acquisition Plan)

1. A parcel of approximately 1,050 acres at the northernmost end of the lake along Eticuera Creek, to include but not limited to lands presently under easement. The purpose of this acquisition is to accommodate proposed development and to protect the scenic beauty of the area.
2. A parcel of approximately 90 acres between Knoxville Road and the existing Federal boundary north of Putah Creek. This parcel would provide lands necessary for effective utilization of the shoreline lands in this area. Potential management problems and use conflicts could be avoided when no private lands separate the highway and the park.
3. A parcel of approximately 400 acres directly to the west of parcel number 2. This parcel would provide access and management protection to the proposed development on the heights between Putah Creek and the lake. This parcel excludes the school property.
4. A parcel of approximately 1,640 acres, nearly but not exactly coincidental with the existing easement along Putah Creek. This acquisition is necessary to ensure compatible uses of all waters impounded by Monticello Dam and adjacent lands and to eliminate existing management problems.

5. A parcel of land of approximately 110 land and water acres, at present, entirely surrounded by lands owned in fee located on the Putah Creek arm of the lake. The purpose of such acquisition is the same as for parcel number 4.
6. A parcel of approximately 25 acres directly south of the Pope Creek Bridge bounded by the highway, the existing boundary, and the Berryessa Park subdivision. This parcel would be used to provide access to and parking for the proposed Pope Creek area.
7. A parcel of approximately 100 acres including all lands between Knoxville Road and the existing Federal boundary south of the Berryessa Park subdivision, extending south to the point where Knoxville Road and the Federal boundary cross. The purpose of this acquisition is to accommodate proposed development.
8. A series of presently undeveloped parcels between Knoxville Road and the lake south of Rancho Monticello to Capell Creek, excluding the large area presently outside the boundary between Sugarloaf Park and Spanish Flat Resort, totaling approximately 2.5 acres. The purpose for acquiring these parcels would be to maintain the scenic setting of the lake east of Knoxville Road, to preclude undesirable strip type development along the east side of Knoxville Road, to provide overlooks at appropriate points, and to preclude possible management problems.

9. A parcel of approximately 30 acres adjacent to the southerly tip of the existing boundary along the creek in Steele Canyon, which is coincidental with the existing easement. This acquisition is necessary to ensure compatible uses of all waters impounded by Monticello Dam, including surcharge waters, and to eliminate the possibility of management problems.
10. A parcel of land of approximately 80 acres located south and adjacent to the existing boundary in Wragg Canyon, including but not limited to the existing easement. The purpose of this acquisition is to accommodate proposed development at South Shore and to eliminate management difficulties inherent in the easement.
11. A 2- to 3-acre parcel of land located in the Moskowitz Corners/ Capell Valley area. Final location should be determined following adoption of the proposed Wooden Valley/Capell Valley freeway route. The parcel should be located near or adjacent to the junction of the freeway and State Route 128. The purpose of this parcel is to accommodate development of the proposed information/orientation/interpretation center.

Those parcels that are not necessary for recreation purposes are detached parcels adjacent to Wragg Canyon, Steele Canyon, and Putah Creek. Such parcels are depicted on the Land Acquisition Plan.

Total proposed acquisition is approximately 3,530 acres.

Acquisition should take place as soon as possible because of rising land costs and the need to protect the immediate lake environs.

VIII. INFORMATION/ORIENTATION

The efficient dissemination of information to the visitor and his orientation are highly important functions, serving to maximize visitor enjoyment and utilization of the area. A threefold program is necessary to carry out these functions, and includes printed information and orientation literature, personal contact, and a complete, standard signing system as discussed previously under the Development Controls Section.

Information/Orientation Literature

Current maps, brochures, and other printed material showing access routes, development locations, recreation facilities and opportunities, overnight accommodations, restricted use zones, applicable park, local, state, and Federal regulations, user fees, and emergency areas should be readily available to the public at all contact stations and concession facilities.

Personal Contact

The value of effective, courteous, knowledgeable personal contact can not be overemphasized. All park and concession personnel should be able and willing to assist visitors in any way possible to make their visit more enjoyable.

Sign System

As discussed earlier, a system of signing should be developed that utilizes standard symbols and wording, is constant in design motif, and is applied consistently throughout the park. The same motif should also be utilized on brochures, thus facilitating recognition of the area by the public.

Facilities

In support of the information/orientation function, a limited number of facilities are proposed on the Recreation Development Plan.

The most extensive facility is proposed for the Moskowite Corners area. It should be conveniently located near the junction of Route 128, Route 121, and the proposed freeway through Chiles Valley. A temporary facility should be located here as soon as possible. The function of such a facility would be to disseminate published literature, sell necessary permits and licenses, and provide contact between park personnel and visitors.

Information available should not be confined to the Lake Berryessa area, but should also include information about the surrounding region. Availability of overnight accommodations could also be coordinated from this point, possibly including a reservation service for facilities within the park.

Interpretative functions as discussed in a subsequent section should also be located here.

The use of the present headquarters area for the information/orientation function should be continued, providing literature, permits, and personal contact.

An orientation sign should be placed at the Monticello Dam parking area and at the intersection of Pope Valley Road and Knoxville Road.

IX. CONSIDERATION FOR NEEDS OF URBAN IMPACTED RESIDENTS

The park management should actively seek the opportunity to utilize the recreational resources available at Lake Berryessa for urban impacted residents. This can be accomplished through cooperation with those Federal, State, and local agencies and private organizations that are immediately concerned with such matters.

If, through such cooperation, additional and/or special facilities that are compatible with the resources of the area are found necessary, this plan should be amended.

Neither the special transportation nor the organizational requirements needed to utilize the Lake Berryessa resources are necessarily part of the primary management responsibilities of the area. However, full cooperation, facilities and financial assistance should be provided to the maximum extent possible. Special appropriations, including special grants, may be sought to support specific programs within the area.

X. ARCHITECTURAL CONTROL

In order to ensure that development is esthetically pleasing and environmentally harmonious, certain controls should be placed upon all structures and facilities provided at Lake Berryessa. Such controls should visually identify each development as a "community" unto itself, as well as facet of the total park development.

All building designs should be of a high quality and the size, scale, and siting should be in harmony with the immediate environment. Such factors as slope, vegetation, views, wind direction, sun, and shade, should be incorporated in the design of all facilities. Each developed area should be designed in accordance with a detailed, professionally prepared development plan that includes circulation systems, utilities, parking, and building location.

All construction should be carried out in such a manner as to minimize scars upon the landscape. Programs that include planting, reseeding, slope rounding, and stabilization should be undertaken to negate necessary construction scars.

Colors used in construction and painting should be limited to earth tones of yellow, green, and brown.

XI. ENVIRONMENTAL EDUCATION

A substantial proportion of the visitors to Lake Berryessa are urban dwellers having little contact with nature and little understanding of the relationship between man and the environment. Yet many of

these same people are becoming increasingly aware that man and what he does affects the environment of which he is a part, and conversely that environment affects him and his future well-being. Man is not apart from nature.

The park management should, in cooperation with local and regional school districts, establish and make available areas within the park that can be effectively utilized to demonstrate the interrelationships of man and man, and man and nature.

These areas need not be ones of great natural beauty, unscarred by human endeavor. Rather, they should possess a variety of landforms and plantlife as well as show the results of man's tampering with existing forms. They need not be far removed from the heavy use of man--their only criteris is that of variety. Areas in which man and his developments conflict with the environment may be the ones most useful for study.

The role of park management is to make available such areas and to actively offer use of these areas to the school districts involved.

A secondary role of environmental education is that of interpretation. As future interpretive programs and facilities evolve at Lake Berryessa, the same concepts that apply to environmental education may be made part of the interpretive program.

XII. INTERPRETATION

Although specific interpretive programs and facilities are not considered part of this plan, it is recommended that a study be undertaken to determine the interpretive possibilities and to recommend specific programs and facilities.

Possible interpretive themes could include the history and natural history of the Berryessa Basin, the role of the Bureau of Reclamation in today's society, and the purposes of Monticello Dam.

XIII. ADVISORY BOARD

It is recommended that an advisory commission be established to aid the onsite manager of Lake Berryessa in the management and operation of the area. This commission should be composed primarily of local representatives. However, the State of California should also be represented, as well as those regional, State, and Federal agencies deemed appropriate.

XIV. PLAN UPDATING

The plan for recreational development should, as part of its implementation, be periodically reviewed and updated to reflect changes in the needs and desires of the public, advances in applicable technologies, and the physical, social, and political changes in the surrounding region.

It is suggested that such updating be formally scheduled at 5-year intervals. This schedule should remain flexible to provide for the updating needed as development proceeds.

DEVELOPMENT CONCEPT PLANS

The series of Development Concept Plans that follow are the next step in a rational, sequential planning process, which defined activities, their location, and their relationship to each other. These plans are based upon the natural landforms with their physical opportunities and limitations, as well as upon the needs of the recreating public as appropriate to each site. They have been prepared as further definition of the concepts developed earlier in this report.

The individual areas for which specific uses are shown are not meant to delineate exact locations. Rather, they are meant to show functional and geographic relationships of the uses and activities within general areas. The exact definition and extent of final locations cannot be accomplished until detailed design phases are undertaken.

Numbers (in terms of cars, people, boats, etc.) of units which can be responsibly accommodated at each site and a development sequence priority for the various units that comprise each developed area are also indicated. If no priority is listed, the entire area should be developed simultaneously. The designation of "future" means that no development should take place until after the next periodic plan updating.

Inherent in the allocation of priorities, but not mentioned on the drawings themselves, is the inclusion of the following four items as part of Priority 1:

- a. The removal of all mobile homes that restrict public access along the shoreline.
- b. The removal of all individual or consolidated docks not in designated berthing areas.
- c. Bringing all mobile home areas to a standard equal to or greater than the applicable California Health and Safety Codes and other requirements as stated earlier in this plan.
- d. The removal of all mobile homes that have caused environmental degradation through their placement.

The dichotomy between "concession areas" and "public use areas" has been discarded. In essence, all areas are "public use areas."

Concession involvement in the provision of services at Lake Berryessa is a vital and integral part of this plan. However, the concept of the concessioner role should change from that of sole developer and operator of a specific tract of land to that of operator and manager of any facility that could reasonably be expected to return a fair profit, regardless of where it occurs within the boundary of Lake Berryessa.

It is recommended, therefore, that concessioners not be expected to provide roads, utilities, structures, sanitation, water, and sewer facilities or services, or maintenance on such facilities. It is also recommended that existing like facilities be purchased from the present concessioners. Such services as police protection and lifeguards should also be provided by the managing agency.

The designation of entire areas to be developed and operated by specific concessioners should be withdrawn. Rather, specific contracts on individual facilities and/or services should be negotiated as appropriate. Entrance and/or user fees for like services should be standard throughout the area.

It is the recommendation of this plan that water and sewer districts should be created and modern, high-quality sewage treatment and water supply be provided for the entire basin, both within and outside the Federal boundary. However, until such time as this recommendation can be implemented, adequate sewage treatment facilities will have to be provided.

No environmental study areas have been located on the plans. However, possible sites should be determined so that they will be available to support a viable environmental education program in local schools.

Above all else, all officials including private enterprise associated with the development and management of Lake Berryessa must adhere to an enlightened ethic in decision making and development control (see the Development Controls section for specific guidelines).

The capacity of the proposed developments, including that of the existing facilities but not of the "future" proposals, is approximately 2,800,000 annual visitor-days, which correspond to the capacity of the existing road system as discussed earlier under "Optimum Capacity."

This figure also corresponds to the first phase development capacity as discussed later under "Phasing."

Although the following plans are self-explanatory to a large degree, some comments are necessary to clarify them. Also, some developed areas depicted on the Recreation Development Plan do not have supporting plans in this section. These areas are all to be developed after the initial 5-year period. The following comments will provide guidelines for development as well as clarify points on the plans that follow.

Developed Area 1 - Eticuera Creek

Development of this outstanding area cannot begin until appropriate lands are acquired and improved access into the basin is effected. The inherent resources of the site suggest a day-use development based upon a constant level sub-impoundment north of the existing road. Appropriate uses would include shoreline and float fishing, picnicking, swimming, sunbathing, non-powered boating, open play, and hiking trails. Support facilities include road access, parking, a fish cleaning facility, bathhouse, refreshment and sundries concession, non-powered boat rental, car top launch area, sanitary facilities, and information and orientation. The possibility of the development of an environmental study area should also be investigated since biological relationships ranging from water's edge to ridgetop occur in close proximity here.

Developed Area 2 - North Shore

This area should be the first developed to accommodate use in excess of the 2,800,000 annual visitor days projected for the first phase of development. The area's varied terrain possesses a great variety of recreational opportunities and has good access potential, although lands between the highway and the existing boundary will need to be acquired before its full potential can be realized. The area extends from the north side of the Putah Creek Bridge to the south edge of the last peninsula before Eticuera Creek.

Recreational opportunities in the area include the full range available on the lake, with the exception of power boat launching. (Adequate launch sites presently exist.)

Suggested activities within the North Shore developed area include shore, float, and cove fishing; camping; picnicking; swimming; sunbathing; open play; bicycling; and hiking. Support facilities include road access, parking, fish cleaning facility, courtesy docks, car top launch, refreshment and sundries concession, bathhouse, sanitary facilities, bike rental, non-powered boat rental, and information, orientation, and interpretive opportunities. No consideration should be given to the inclusion of mobile homes in this area. The possibility of the inclusion of an environmental study area should be studied.

Care should be taken in planning this development to maximize the opportunities for shoreline access and enjoyment of the outstanding scenic amenities available within the area.

Developed Area 3 - Gibson Flat

As improved access and visitor demand become a reality, the development of the relatively flat portions of the Gibson Flat area on the ridge west of the existing road should be considered. Possible uses could be a recreation travel trailer park, a group camp, an environmental study area, or another facility unrelated to water-oriented use. A further possibility is that of leaving the area untouched as a wildlife preserve.

Considerations for its utilization should include needs demonstrated after the first few years of operation, the potentially fragile nature of the area, the difficulty of access and utility connection, the relationship to the operation at North Shore, and the interpretive possibilities of the area.

Developed Area 4 - Boy Scout Camp

This area is presently used by the Boy Scouts as a camp area. This type of use should remain. However, the Boy Scouts should not be the exclusive users, and the area should be made available to other similar organizations.

Two possibilities exist to achieve this end: (1) the Boy Scouts could continue to own the improvements and charge fees to other similar groups using the area, or (2) the managing agency could purchase the improvements from the Boy Scouts and then offer the facilities to other groups on a scheduled basis.

As use increases, consideration should be given to providing improved water and sewer service. Improved vehicle parking on the periphery of the area may become necessary to protect it from environmental degradation. Management practices for the area will need to be developed in relationship to the type and extent of use that occurs.

Developed Area 5 - Putah Creek Park

The plan is self-explanatory, except with reference to Area "F". The existing camping for which the area is presently used should be continued, subject to reexamination at the time of the next periodic plan updating. However, measures should be taken to prevent excess erosion and other degradation of the resource due to camping activities. Steep, raw slopes should be stabilized, and roadways and camp parking areas treated with a durable surface.

Developed Area 6 - Pope Creek

No additional comments.

Developed Area 7 - Rancho Monticello

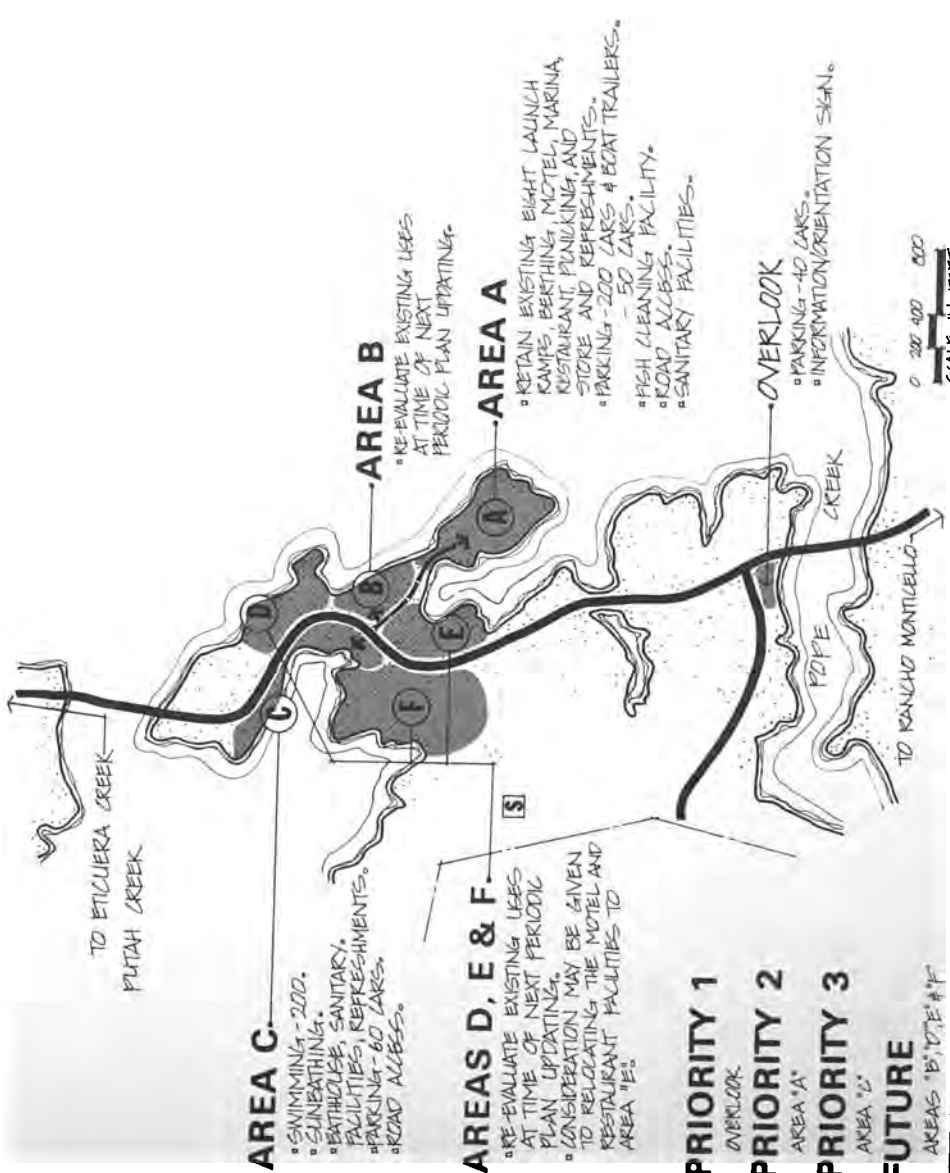
No additional comments.

Developed Area 8 - Berryessa Marina

No additional comments.

Developed Area 9 - Islands

No additional comments.



AREA C

- SWIMMING - 200.
- SUNBATHING.
- BATHHOUSE, SANITARY FACILITIES, REFRESHMENTS.
- PARKING - 60 CARS.
- ROAD ACCESS.

AREA B

- RE-EVALUATE EXISTING USES AT TIME OF NEXT PERIODIC PLAN UPDATING.

AREAS D, E & F

- RE-EVALUATE EXISTING USES AT TIME OF NEXT PERIODIC PLAN UPDATING.
- CONSIDERATION MAY BE GIVEN TO RELOCATING THE MOTEL AND RESTAURANT FACILITIES TO AREA 'E'.

AREA A

- RETAIN EXISTING EIGHT LAUNCH KAMPS, BERTHING, MOTEL, MARINA, RESTAURANT, PUNTING, AND STORE AND REFRESHMENTS.
- PARKING - 200 CARS & BOAT TRAILERS. - 50 CARS.
- FISH CLEANING FACILITY.
- ROAD ACCESS.
- SANITARY FACILITIES.

- PRIORITY 1**
OVERLOOK
- PRIORITY 2**
AREA 'A'
- PRIORITY 3**
AREA 'D'

FUTURE
AREAS 'B', 'D', 'E' & 'F'

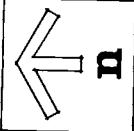
OVERLOOK

- PARKING - 40 CARS.
- INFORMATION/ORIENTATION SIGN.

0 200 400 800
SCALE IN FEET

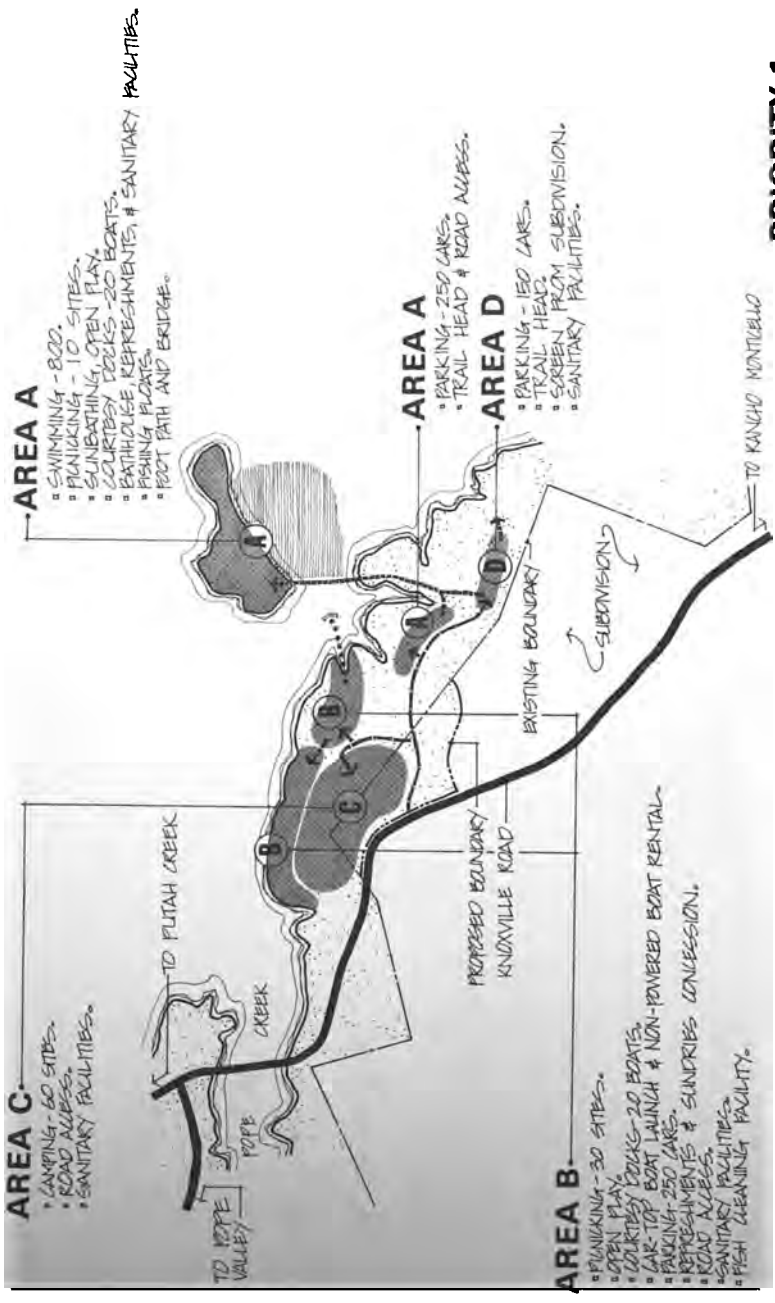
development concept
area 5

PUTAH CREEK



LEGEND -

- EXISTING SEWAGE TREATMENT
- ACCESS ROAD
- HIGHWAY



PRIORITY 1
AREAS A, B, C, & D

0 200 400 800
SCALE IN FEET

<p>.POPE CREEK.</p>	<p>development concept area 6</p>
<p>LEGEND</p> <ul style="list-style-type: none"> → DEVELOPED AREA ACCESS ▬ FORESTED AREA ACCESS ••••• NON-POWERED BOAT LAUNCH ☒ SWIMMING AREA 	

- AREA D**
- REMOVE MOBILE HOMES.
 - RETAIN EXISTING PLEINIC SITES - APPROX. 30.
 - ADD PLEINIC SITES TO TOTAL 50 - APPROX. 20.
 - OPEN PLAY.
 - PARKING - 80 CARS.
 - ACCESS ROAD.
 - SANITARY FACILITIES.
 - LANDSCAPE REHABILITATION.

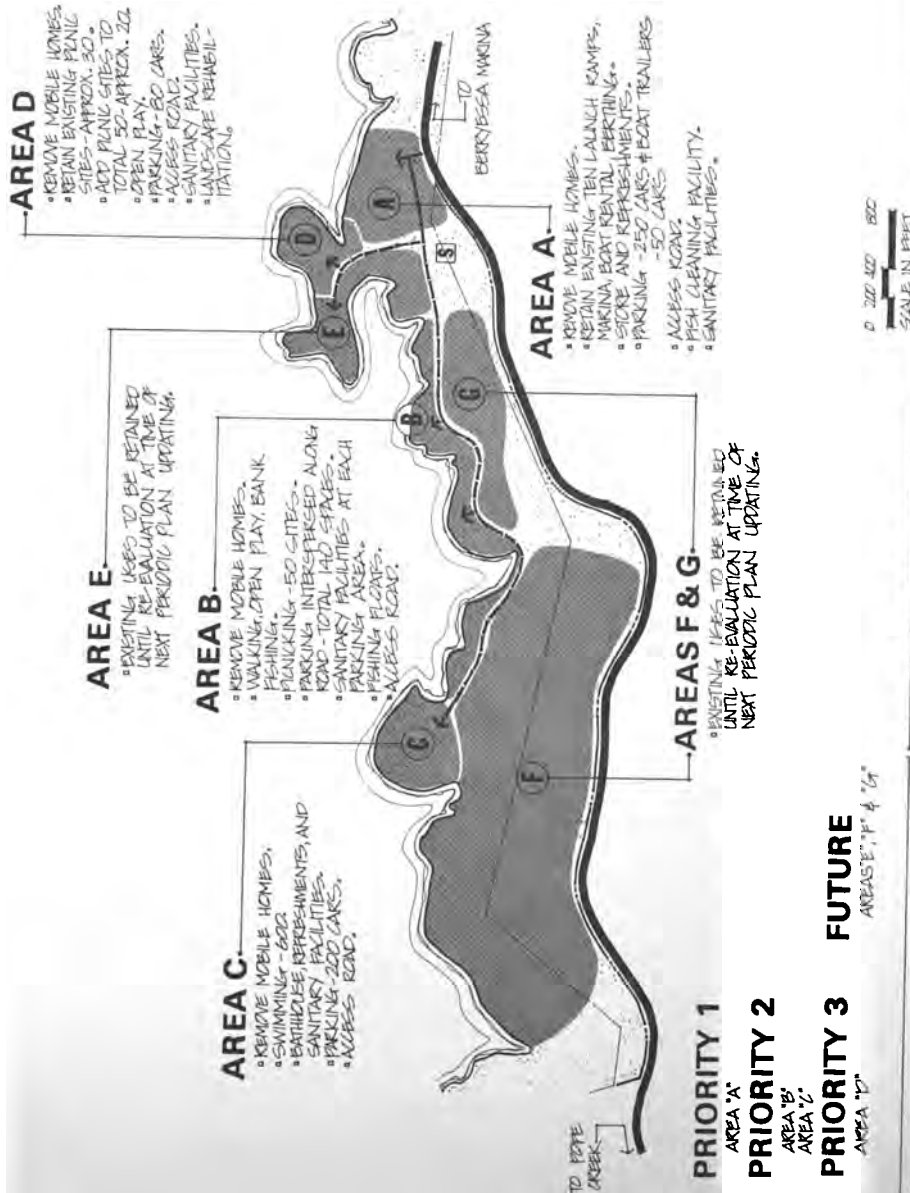
- AREA E**
- EXISTING LOTS TO BE RETAINED UNTIL RE-EVALUATION AT TIME OF NEXT PERIODIC PLAN UPDATING.

- AREA B**
- REMOVE MOBILE HOMES.
 - WALKING, OPEN PLAY, BANK FISHING.
 - PLEINICKING - 50 SITES.
 - PARKING INTERFERED ALONG ROAD - TOTAL 140 SPACES.
 - SANITARY FACILITIES AT EACH PARKING AREA.
 - FISHING PLATFORMS.
 - ACCESS ROAD.

- AREA C**
- REMOVE MOBILE HOMES.
 - SWIMMING - 600.
 - BATHHOUSE RECREATION, AND SANITARY FACILITIES.
 - PARKING - 200 CARS.
 - ACCESS ROAD.

- AREA A**
- REMOVE MOBILE HOMES.
 - RETAIN EXISTING TEN LUNCH KAMPS, MAKINA, BOAT RENTAL, FERTILING, STORE AND REFRIGERATION.
 - PARKING - 250 CARS + BOAT TRAILERS - 50 CARS.
 - ACCESS ROAD.
 - FISH CLEANING FACILITY.
 - SANITARY FACILITIES.

- AREAS F & G**
- EXISTING LOTS TO BE RETAINED UNTIL RE-EVALUATION AT TIME OF NEXT PERIODIC PLAN UPDATING.



- PRIORITY 1**
AREA 'A'
- PRIORITY 2**
AREA 'B'
AREA 'C'
- PRIORITY 3**
AREA 'D'

FUTURE
AREAS 'E', 'F', & 'G'

development concept
area 7

RANCHO MONTICELLO

LEGEND

0 100 200 300 400 500 600 700 800
SCALE IN FEET

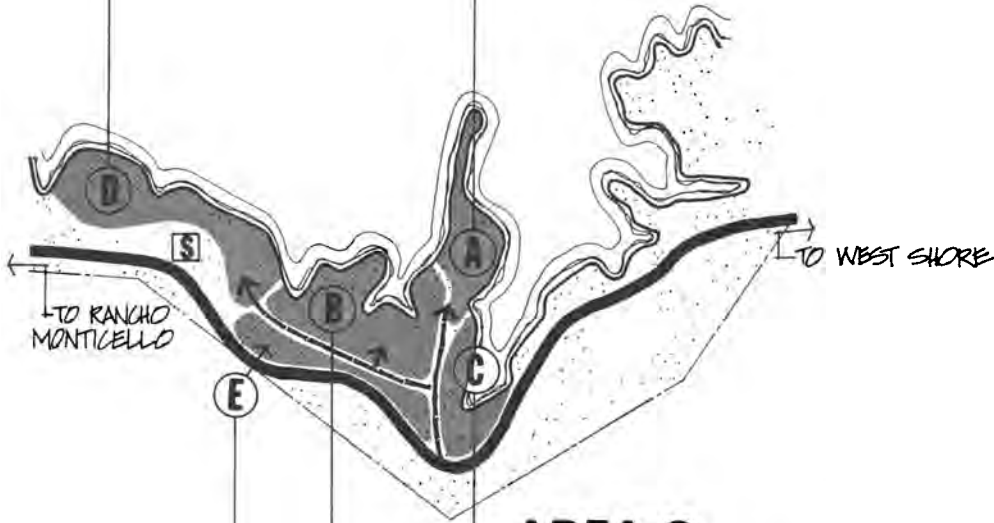
P. 3/20/02 B/C

AREA A

- ▣ RETAIN EXISTING FOUR LAUNCH RAMPs, MARINA, BOAT RENTAL, BERTHING, STORE, AND REFRESHMENTS.
- ▣ REMOVE MOBILE HOMES.
- ▣ PARKING - 100 CARS AND BOAT TRAILERS. - 40 CARS.
- ▣ ROAD ACCESS.
- ▣ FISH CLEANING FACILITY.

AREA D

- ▣ RE-EVALUATE EXISTING USES AT TIME OF NEXT PERIODIC PLAN UPDATING.



AREA C

- ▣ REMOVE MOBILE HOMES.
- ▣ REHABILITATE LANDSCAPE.

AREA B

- ▣ REMOVE MOBILE HOMES.
- ▣ TRAILER PARK - 60 SITES.
- ▣ ROAD ACCESS.
- ▣ BANK FISHING ACCESS - 25 CAR PARKING.
- ▣ SANITARY FACILITIES.

AREA E

- ▣ RE-EVALUATE EXISTING USES AT TIME OF NEXT PERIODIC PLAN UPDATING.

PRIORITY 1

AREA "A"

PRIORITY 2

AREA "B"

FUTURE

AREAS "C", "D", & "E"

LEGEND -

S EXISTING SEWAGE TREATMENT. → ROAD ACCESS. — HIGHWAY

0 200 400 600

SCALE IN FEET

development concept: **area 8**

BERRYESSA MARINA



AREA B

- RETAIN EXISTING STORE AND PARKING.

BOUYS

- AREA INSIDE BOUYS RESERVED AS NON-POWERED BOAT BASIN.

AREA F

- RETAIN EXISTING DECK.
- RE-EVALUATE AT TIME OF NEXT PERIODIC PLAN UP-DATING.
- INITIATE ENVIRONMENTAL IMPROVEMENT PROGRAM.

OVERLOOK

- PARKING - 15 CARS
- INTERPRETIVE DEVICE

AREA A

- RETAIN EXISTING CAMPERGROUND.
- LANDSCAPE REHABILITATION.

AREA E

- REMOVE DRY STORAGE.
- OVERLAY LAK AND BOAT-TRAILER PARKING IF NECESSARY.

AREA C

- MARINA & BERTHING, BREAKWATER.
- RETAIN EXISTING SEVEN LAUNCH RAMP.
- REMOVE CAMPING & PLANKING.
- RENTAL BOATS - 15 MAX.
- PARKING - 125 CARS & BOAT TRAILERS.
- FISH CLEANING FACILITY.
- SANITARY FACILITIES.

AREA D

- STABLE LEVEL SWIMMING - 300.
- PLANKING - 20 SITES.
- AMPHITHEATRE.
- NON-POWER RENTAL BOATS.
- PARKING - 150 CARS.
- FISHING FLATS - EXPANDABLE TO 250 MAX.
- OPEN PLAY SUNBATHING.
- WRESTLEMENTS, BATHHOUSE AND SANITARY FACILITIES.

PRIORITY 1

- AREA "A"
- AREA "B"
- AREA "C"

PRIORITY 2

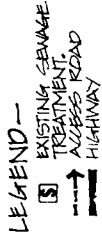
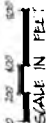
- AREA "D"
- AREA "E"

PRIORITY 3

- OVERLOOK

FUTURE

- AREA "F"



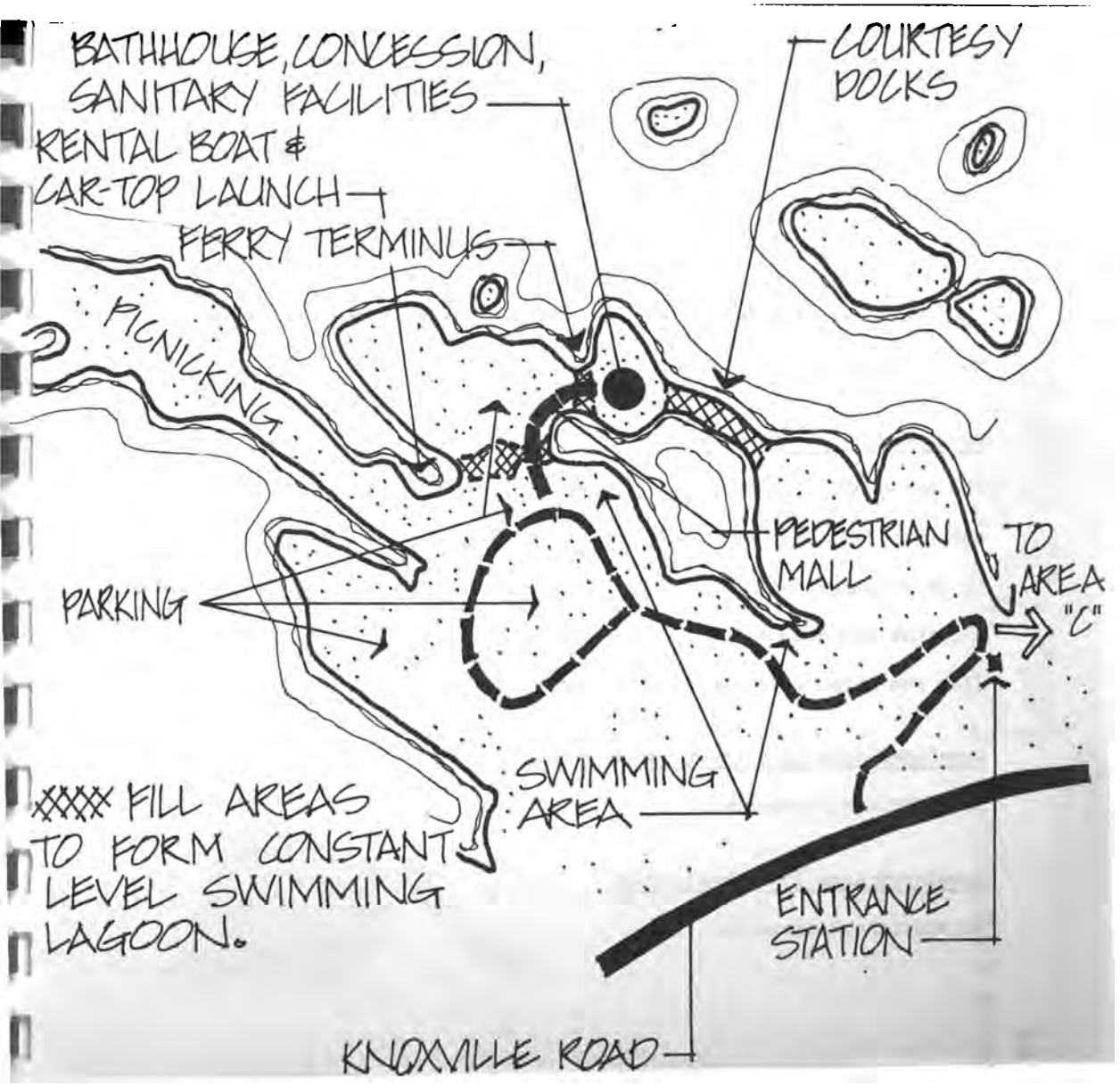
.SPANISH FLAT.

development concept
area 12

Developed Area 10 - West Shore

The drawing below further clarifies the details of the Development

Concept Plan regarding Area "B."



AREA "B" - DEVELOPED AREA 10.

Developed Area 11 - Park Headquarters

This area is reserved for park operational uses including maintenance, essential park housing, and administration headquarters. The existing visitor center structure is to be used as both headquarters and the primary visitor contact point, until such time as a larger facility is found necessary.

Public use of the area is not excluded if it does not interfere with the primary operational functions of the area.

Developed Area 12 - Spanish Flat

No additional comments.

Developed Area 13 - Capell Wayside

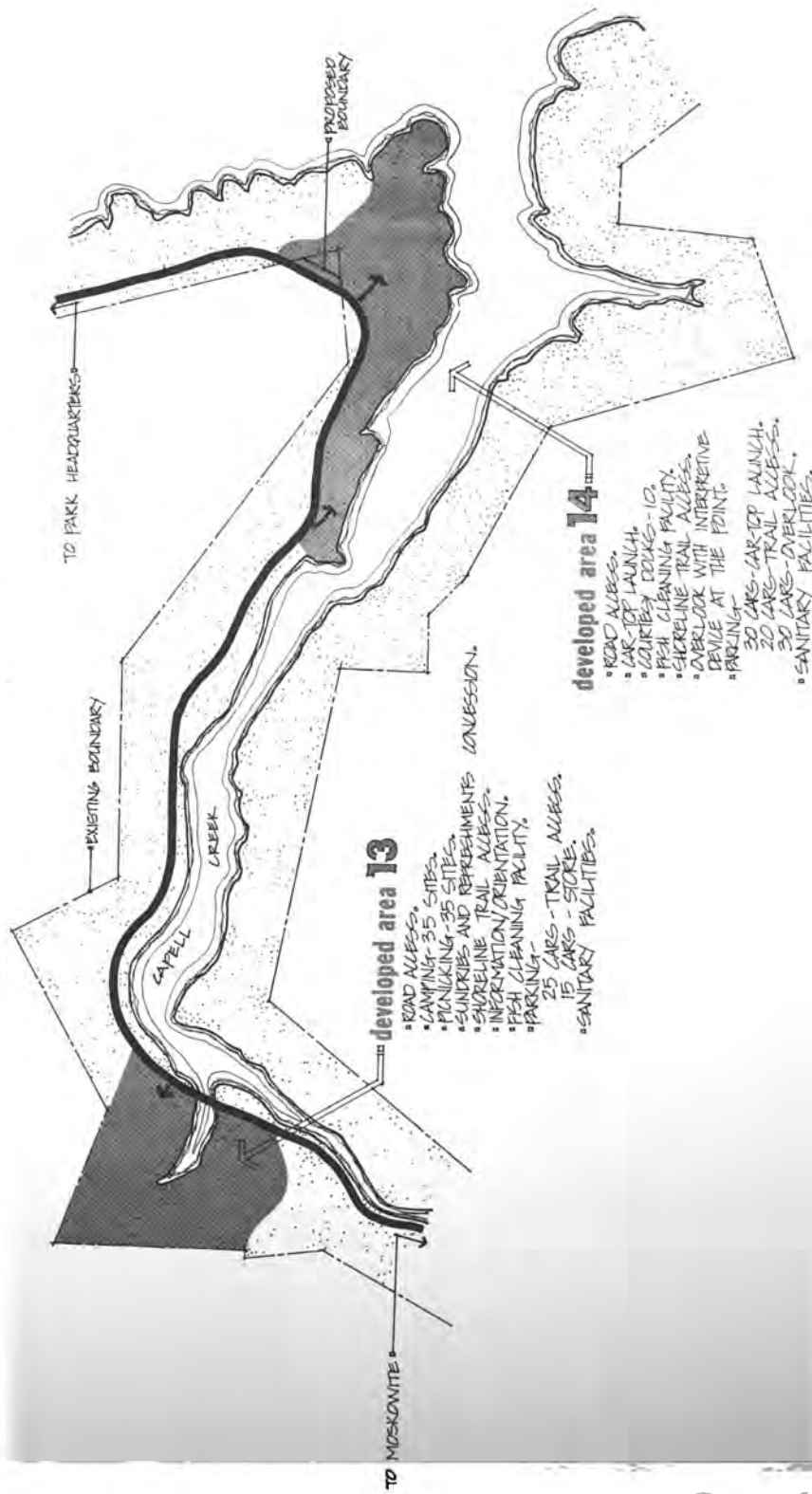
The use concept suggested for the camping facilities in this area is somewhat different from that for other camping areas at Lake Berryessa. It is recommended that the length of stay be limited to one night, and that the area be utilized primarily to accommodate visitor overflow and those arriving late in the evening.

Developed Area 14 - Lower Capell Creek

No additional comments.

Developed Area 15 - Steele Park

No additional comments.



developed area 13

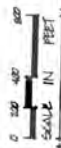
- ROAD ACCESS.
- CAMPING - 35 SITES.
- PICNICKING - 35 SITES.
- SUNDBIES AND REFRIGERATORS CONCESSION.
- SHORELINE TRAIL ACCESS.
- INFORMATION/ORIENTATION.
- FISH CLEANING FACILITY.
- PARKING -
- 25 CARS - TRAIL ACCESS.
- 15 CARS - SICKLE.
- SANITARY FACILITIES.

developed area 14

- ROAD ACCESS.
- CAR-TOP LAUNCH.
- COURTESY DOCKS - 10.
- FISH CLEANING FACILITY.
- SHORELINE TRAIL ACCESS.
- OVERLOOK WITH INTERPRETIVE DEVICE AT THE POINT.
- PARKING -
- 30 CARS - CAR-TOP LAUNCH.
- 30 CARS - TRAIL ACCESS.
- 30 CARS - OVERLOOK.
- SANITARY FACILITIES.

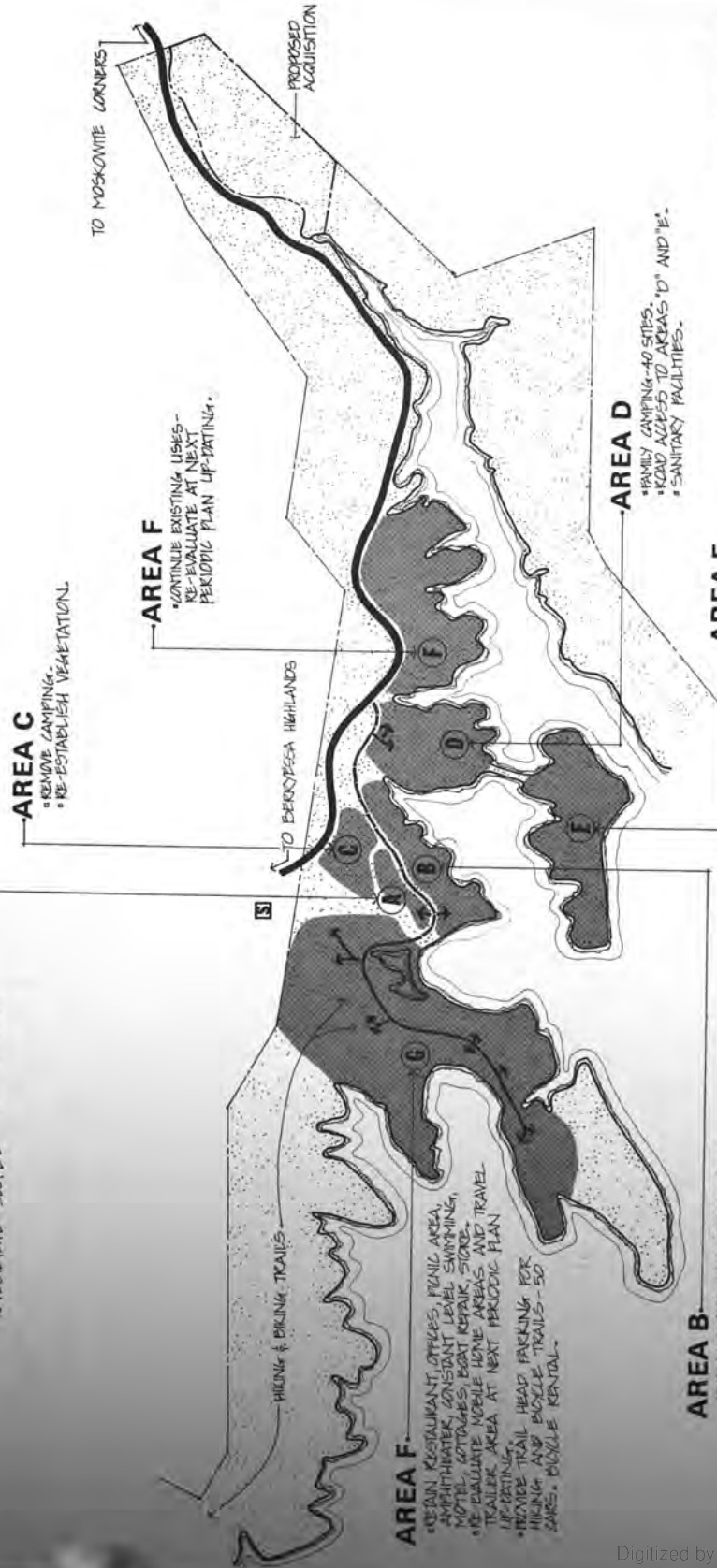
development concepts
areas 13-14

**CAPELL CREEK WAYSIDE
 LOWER CAPELL**



AREA A

- REMOVE EXISTING BOAT STORAGE SHEDS.
- BOAT TRAILER PARKING - 100 TRAILERS.
- REMOVE EXISTING BOAT TRAILER PARKING; REVEGETATE SLOPE.



AREA F

- CLEAN RESTAURANT, OFFICES, PUNIC AREA, AMPHITHEATER, CONSTANT LEVEL SWIMMING, MOTEL, COTTAGES, BOAT REPAIR, STORE.
- RE-EVALUATE MOBILE HOME AREAS AND TRAVEL TRAILER AREA AT NEXT PERIODIC PLAN UP-DATING.
- REMOVE TRAIL HEAD PARKING FOR HIKING AND BICYCLE TRAILS - 50 BARS. BICYCLE RENTAL.

AREA B

- RETAIN EXISTING LAUNCH RAMP, B.
- PARKING - 200 CARS AND BOAT TRAILERS.
- PARKING - 40 CARS.
- RETAIN EXISTING BERTHING MAKING, BOAT RENTAL AND SANITARY FACILITIES.
- EXISTING OVERNIGHT CAMPING AT SOUTH END OF AREA.
- FISH CLEANING FACILITY.

AREA C

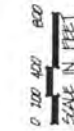
- REMOVE CAMPING.
- RE-ESTABLISH VEGETATION.

AREA D

- FAMILY CAMPING - 40 SITES.
- ROAD ACCESS TO AREAS 'D' AND 'E'.
- SANITARY FACILITIES.

AREA E

- PUNIC AREA - 25 SITES.
- CAMPING - 30 SITES.
- PARKING - 15 CARS.
- COURTESY TRUCKS - 20.
- SANITARY FACILITIES.



LEGEND -
 ——— DEVELOPED AREA ACCESS
 - - - - - EXISTING HIGHWAY

development concepts

Area 15

STELLE PARK.

PRIORITY 1

- AREA 'A'
- AREA 'D'

PRIORITY 2

- AREA 'C'
- AREA 'E'
- AREA 'F'

FUTURE

- AREAS 'B' & 'G'

AREA A

- REMOVE MOBILE HOMES.
- RELOCATE ROAD.
- RETAIN EXISTING FIVE LAUNCH RAMPS.
- PARKING FACILITIES BOAT RENTAL.
- RESTROOM FACILITIES.
- RESTROOM, STORAGE & REFRIGERANTS.
- PARKING - 100 CARS & BOAT TRAILERS.
- BOATLE RENTAL.
- HIGH CLEANING FACILITY.
- SANITARY FACILITIES.

AREA B

- PARKING - 25 SITES.
- TRAIL HEAD - HIKING & BIKE.
- PARKING - 50 CARS.
- SANITARY FACILITIES.

AREA F

- TRAVEL TRAILER PARK - 150 SITES.
- SANITARY FACILITIES.
- PLANTING & SCREEN FROM ROAD.

AREA K

- REAR EXISTING. USE RE-EVALUATE AT TIME OF NEXT PERIODIC PLAN UPDATING.

AREA C

- PARKING - 15 SITES.
- OVERLOOK.
- PARKING - 25 CARS.
- LANDSCAPE REHABILITATION.
- SANITARY FACILITIES.

AREA G

- TRAILER PARK - 15 SITES.
- SANITARY FACILITIES.

AREAS H, I, J

- RE-EVALUATE MOBILE HOME AND TRAILER PARK AREAS AT TIME OF NEXT PERIODIC PLAN UPDATING.
- PROVIDE ENNE & HIKING TRAIL ROUTES TO WILD/CAMPS THROUGH AREAS H & I.
- ULTIMATE USE FOR AREA H IS HIKING & HIKING TRAILS.

AREA D

- CAMPING - 45 SITES.
- ROAD ACCESS.
- SANITARY FACILITIES.
- SHADE TREE PLANTING.

AREA E

- CAMPING - 30 SITES.
- ROAD ACCESS.
- SANITARY FACILITIES.

PRIORITY 1

- AREA 'A'
- AREA 'B'

PRIORITY 2

- AREA '2'
- AREA 'D'
- AREA 'E'

PRIORITY 3

- AREA 'K'

FUTURE

- AREA 'H'
- AREA 'I'
- AREA 'J'
- AREA 'K'



LEGEND -
 ROAD ACCESS
 EXISTING SEWAGE TREATMENT

development concepts

area 18

.SOUTH SHORE.

BOUND OF EXISTING DEVELOPMENT

TO ROUTE 128

PROPOSED ACQUISITION

WIRAGA CANYON

CAMP B

H

I

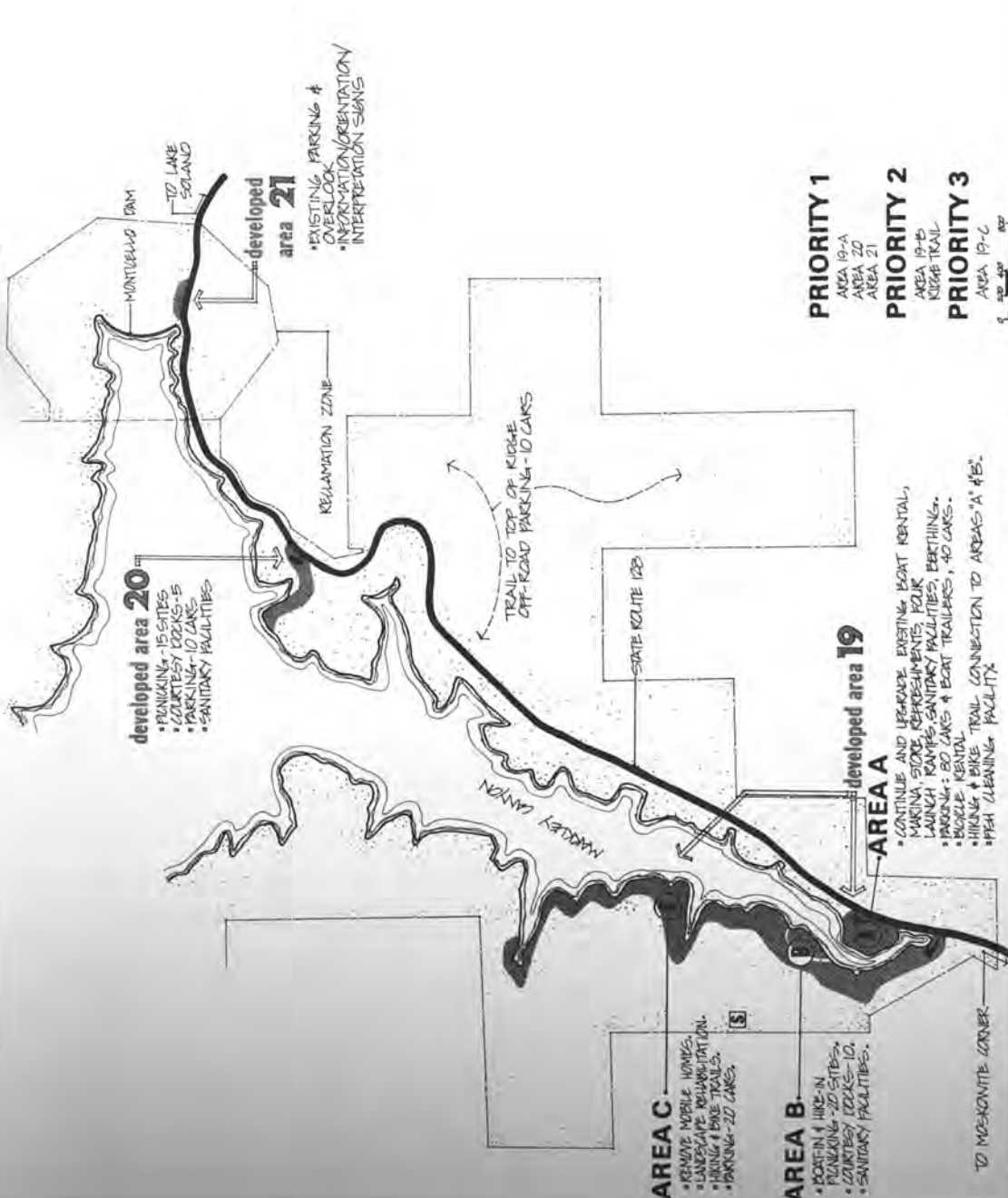
J

S

S

S

S



- developed area 20**
- PUNIKING - 15 SITES
 - CORTESY COAKS - 5
 - PARKING - 10 CARS
 - SANITARY FACILITIES

- developed area 21**
- EXISTING PARKING #
 - OVERLOOK
 - INFORMATION/ORIENTATION
 - INTERPRETATION SIGNS

- AREA A**
- REMOVE MOBILE HOMES
 - LANDSCAPE REHABILITATION
 - HIKING & BIKE TRAILS
 - PARKING - 22 CARS

- AREA B**
- BOATING & HIRE-IN
 - PUNIKING - 20 SITES
 - CORTESY COAKS - 10
 - SANITARY FACILITIES

- developed area 19**
- CONTINUE AND UPGRADE EXISTING BOAT RENTAL
 - MARINA, STORE, REFRIGERATORS, FOUR LAUNCH RAMPS, SANITARY FACILITIES, BERTHING
 - PARKING - 80 CARS & BOAT TRAILERS, 40 CARS
 - BICYCLE RENTAL
 - HIKING & BIKE TRAIL CONNECTION TO AREAS A & B
 - WASH CLEANING FACILITY

- PRIORITY 1**
- AREA 19-A
 - AREA 20
 - AREA 21
- PRIORITY 2**
- AREA 19-B
 - KIDGE TRAIL
- PRIORITY 3**
- AREA 19-C

MARKLEY CANYON & DAM AREA

development concepts areas 19-20-21

LEGEND

- ↑ AREA ACCESS
- Ⓢ EXISTING SEWAGE TREATMENT

Developed Areas 16 and 17 - "Wild" Camps

These two areas should be developed as "primitive" or "wild" camping areas accessible by boat or trail only. Such development will provide another recreational option at Lake Berryessa. Development should proceed slowly to determine the demand for this type of experience.

Implementation of these developments should not be undertaken until the second phase of development occurs.

Facilities to be provided would be campsites, courtesy docks, trail access, sanitary facilities, and trail head parking. Camps for both groups and families should be provided.

Developed Area 18 - South Shore

No additional comments.

Developed Area 19 - Markley Canyon

The parking area and trail head proposed in Area "A" should be kept as near the highway as possible. Design of this facility should utilize, as completely as possible, areas that have already been scarred.

Bicycle and hiking trails in the remainder of Area "A" should also utilize only scarred lands. Stabilization and landscape beautification of these scars should be undertaken as soon as possible.

Developed Area 20 - Markley Overlook

No additional comments.

Developed Area 21 - Monticello Dam

No additional comments.

Developed Area 22 - Gosling Canyon

This future development is proposed solely as a boat and trail access facility and the entire development should reflect this character.

Activities should include fishing, camping, picnicking, swimming, sunbathing, open play, and hiking. The necessary supporting facilities include a fish cleaning facility, a marina, docks, sanitary facilities, bathhouse, refreshments and sundries concession, campsites, and picnic sites.

Developed Areas 23 and 24 - East Side and East Side Access

For the purposes of this plan, it is proposed that a portion of the east side of the lake, defined on the Recreation Development Plan as Developed Area 23, be retained as a non-intensive use area and pastoral off-scape.

However, public fishing access by boat should be allowed, and an access point should be developed on the north end of the east side at Developed Area 24. This access point should contain a parking area, sanitary facilities, a fish cleaning facility, and some picnic sites. The use of the eastern shore as an environmental study area should be considered.

Existing grazing practices should be studied with respect to undue interference with public use and the possible contamination of the lake due to excessive cattle concentrations along the shoreline.

No development need be undertaken during Phase 1; however, public access under regulated conditions should be allowed.

Developed Area 25 - Moskowite Area

The need for a centralized information/orientation center in this area is foreseeable. However, exact functions and location cannot be determined until such time as improved access questions are resolved, as discussed earlier in this report.

PHASING

The following actions and sequences of actions will need to take place to realize the objectives of this plan.

1. Adoption of the plan by the Bureau of Reclamation.
2. Determination of status: whether National recreation area, State recreation area, or other, and appropriate legislative action.
3. During #2, the Bureau should seek interim legislation and/or appropriation to (1) begin development outside existing concession areas, with highest priority given to the Islands/West Shore area; (2) assist the concessions in building consolidated docks; (3) assist concessions in reorientation and upgrading of mobile home areas to meet applicable codes; (4) begin redevelopment of core areas in the existing concession operations; (5) obtain detailed surveys of all existing development, to include the 2-foot contour interval, the location of all trees over 4 inches in diameter at breast height, and all structures, utilities, roads, etc. Such surveys will be essential for detailed planning and design work.
4. After the determination of status, acquisition of existing concession facilities should begin immediately, with the following priorities:

- A. Markley Cove
- B. South Shore
- C. Spanish Flat
- D. Rancho Monticello
- E. Putah Creek Park
- F. Berryessa Marina
- G. Steele Park

Following acquisition, phasing out of mobile home operations, as delineated on the Development Concept section, should begin.

The proposed recreation facilities set forth in this plan are to be developed in two phases. The first phase proposes only those recreation facilities necessary to accommodate approximately 2,800,000 annual visitor-days, which is the optimum capacity of the existing highway system providing access to Lake Berryessa.

The second phase of development would provide for recreation facilities necessary to accommodate additional visitor-days in the future, following the next periodic plan updating.

Land acquisition priorities should be: (Numbers refer to numbers on Land Acquisition Plan.)







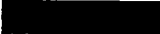
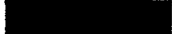






- A. Parcel 8
- B. Parcel 6
- C. Parcel 10
- D. Parcel 4
- E. Parcel 5
- F. Parcel 2

- G. Parcel 7
- H. Parcel 1
- I. Parcel 3
- J. Parcel 9
- K. Parcel 11

The phasing charts that follow are based upon Federal or State take-over of the management functions at Lake Berryessa, including adequate appropriations to carry out the programs delineated in the Development Concept Plans section. They are based also upon a combination of minimum disruption to the concessioners, serving the public good, and rectifying past environmentally irresponsible actions. They are, of course, subject to modification to meet changing management needs, but do present a frame of reference for action by the responsible manager.

phasing chart.

YEAR AREA	1	2	3	4	5	FUTURE
AREA 1	ETICUERA CREEK					
AREA 2	NORTH SHORE					
AREA 3	GIBSON FLAT					
AREA 4	BOY SCOUT CAMP					
AREA 5	PUTAH CREEK					
A						
B						
C						
D						
E						
F						
OVERLOOK						
AREA 6	POPE CREEK					
A						
B						
C						
D						
AREA 7	RANCHO MONTICELLO					
A						
B						
C						
D						
E						

YEAR AREA	1	2	3	4	5	FUTURE
F G						
AREA 8 A B C D E	BERRYESSA MARINA					
AREA 9 A B C D E	ISLANDS					
						
AREA 10 A B C D E F	WEST SHORE					
						
						
AREA 11 A						

YEAR AREA	1	2	3	4	5	FUTURE
AREA 12	SPANISH FLAT					
A	██████████					
B	NOT APPLICABLE					
C	██████████					
D		████████████████████				
E					██████████	
F					██████████	██████████
OVERLOOK					██████████	
AREA 13	██████████	CAPELL WAYSIDE				
AREA 14	██████████	LOWER CAPELL				
AREA 15	STEELE PARK					
A		██████████				
B		██████████				
C				██████████		
D			████████████████			
E				██████████		
F & G						██████████
AREA 16	WILD CAMP					██████████
AREA 17	WILD CAMP					██████████
AREA 18	SOUTH SHORE					
A		████████████████████				
B			██████████			
C				██████████		

COST ESTIMATES

The following estimates are for land acquisition, initial development, and the operation and maintenance of proposed facilities.

These costs reflect 1972 prices and will have to be updated to the year this plan is implemented; however, they give the administrating agencies an indication of the funds required to accommodate 2,800,000 annual visitor-days at Lake Berryessa.

The land acquisition costs are based upon reconnaissance estimates and not upon actual appraisals of each parcel involved. The current estimated cost for approximately 3,530 acres, as of January 1972, totals \$2,550,000.

Cost estimates for two items are not included in this report: The costs of basin-wide sewer and water systems and the costs of acquiring the existing concession developments.

The basin-wide sewer and water systems costs would require detailed engineering studies and surveys. However, costs are included for upgrading all existing sewer and water facilities and for providing interim water and sewer systems for the new developed areas.

Acquisition costs for existing concession developments would require detailed appraisal reports on existing facilities. However, the Berryessa Park management estimated that approximately \$7,000,000 has been expended in capital improvements by the seven existing concessioners.

Staffing requirements to operate and maintain recreation facilities at Lake Berryessa are a continuing expense. Based on proposed initial developments to be constructed over a period of five years, these costs are estimated from \$933,000 for the first year to \$1,403,000 for the fifth year.

Members of the advisory commission should serve without compensation. However, the managing agency should be authorized to pay the expenses reasonably incurred by the commission in carrying out its responsibilities.

Cost Summary

Land Acquisition Cost		2,550,000
Development Costs		
Area 5 - Putah Creek	1,393,000	
Area 6 - Pope Creek	2,914,000	
Area 7 - Rancho Monticello	2,977,000	
Area 8 - Berryessa Marina	1,209,000	
Area 9 - Islands	1,551,000	
Area 10 & 11 - West Shore and Park Headquarters	4,925,000	
Area 12 - Spanish Flat	2,351,000	
Area 13 - Capell Creek Wayside	564,000	
Area 14 - Lower Capell Creek	454,000	
Area 15 - Steele Park	1,511,000	
Area 18 - South Shore	2,590,000	
Area 19, 20, and 21 - Markley Canyon and Dam Area	<u>646,000</u>	
Total Development Costs		23,085,000
Operation and Maintenance Cost		
First Year		933,000
Fifth Year		1,403,000

Area 5 - Putah Creek

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	1,500	Lin.Ft.	20	30,000	
2.	Parking with curbs and striping	350	Each	1,500	525,000	
3.	Parking - boat trailers	200	Each	1,000	200,000	
4.	Swimming beach - imported sand graded to 1' depth - 200' wide, includes drainage structures	300	Lin.Ft.	120	36,000	
5.	Bathhouse with comfort stations, wall dressing areas and refreshment concession area	1	Lump Sum	40,000	40,000	
6.	Sanitary facilities	2	Each	15,000	30,000	
7.	Fish cleaning facility	1	Each	2,000	2,000	
8.	Information/orientation sign		Lump Sum	2,000	2,000	
9.	Upgrade existing sewer and water systems		Lump Sum		30,000	
10.	Underground power and telephone	1,500	Lin.Ft.	6	9,000	
11.	General landscape development		Lump Sum		50,000	954,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				<u>46%</u>		438,840
				Total		1,392,840
				Rounded Total		1,393,000

Area 6 - Pope Creek

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	2,600	Lin.Ft.	20	52,000	
2.	Parking with curbs and striping	650	Each	1,500	975,000	
3.	Trail head with interpretive exhibit	2	Each	2,000	4,000	
4.	Access walk to swimming area	1,000	Lin.Ft.	5	5,000	
5.	Foot and service bridge to swimming area - 8' deck on piling	400	Lin.Ft.	100	40,000	
6.	Swimming beach - imported sand graded to 1' depth, 200' wide, including drainage structures	1,000	Lin.Ft.	120	120,000	
7.	Bathhouse - restrooms and wall dressing areas for 800 with food concession	1	Lump Sum	80,000	80,000	
8.	Picnic sites - includes tables, fireplaces, refuse containers and site preparation	40	Each	400	16,000	
9.	Campsites - includes roads, utilities, comfort stations, site preparation	60	Each	2,500	150,000	
10.	Irrigated turf areas for open play, sunbathing and picnicking	5	Acre	15,000	75,000	
11.	Courtesy docks	200	Sq.Yds.	45	9,000	
12.	Fishing float	125	Sq.Yds.	40	5,000	
13.	Fish cleaning facility	1	Each	2,000	2,000	
14.	Standard comfort station	3	Each	15,000	45,000	
15.	Car top boat launch	350	Lin.Ft.	70	24,500	

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
16.	Rental boat dock	200	Sq.Yds.	45	9,000	
17.	Screening from subdivision with irrigation	1,200	Lin.Ft.	6	7,200	
18.	Building for refreshments and sundries (concession)	1	Each	30,000	30,000	
19.	Water intake system		Lump Sum		5,000	
20.	Water treatment plant		Lump Sum		30,000	
21.	6" CI waterline	4,000	Lin.Ft.	10	40,000	
22.	Steel water reservoir 150,000 gallons	1	Lump Sum	40,000	40,000	
23.	6" CI sewerline with manholes	4,000	Lin.Ft.	12	48,000	
24.	Sewage lift station	2	Each	15,000	30,000	
25.	Interim sewage lagoons		Lump Sum	40,000	40,000	
26.	Underground power and telephone	4,000	Lin.Ft.	6	24,000	
27.	General landscaping		Lump Sum		90,000	
						1,995,700
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		918,022
				Total		2,913,722
				Rounded Total		2,914,000

Area 7 - Rancho Monticello

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	6,500	Lin.Ft.	20	130,000	
2.	Parking with curbs and striping	720	Each	1,500	1,080,000	
3.	Parking - boat trailers	250	Each	1,000	250,000	
4.	Swimming beach - imported sand graded to 1' depth - 200' wide, includes drainage structures	700	Lin.Ft.	120	84,000	
5.	Bathhouse with comfort stations and wall dressing area	1	Lump Sum	50,000	50,000	
6.	Irrigated turf area for sunbathing and open play	4	Acre	15,000	60,000	
7.	Sanitary facilities	6	Each	15,000	90,000	
8.	Picnic sites - includes tables, fireplaces, refuse containers, and site preparation	60	Each	400	24,000	
9.	Fish cleaning facility	1	Each	2,000	2,000	
10.	Fishing float	125	Sq.Yds.	40	5,000	
11.	Landscape rehabilitation		Lump Sum	15,000	15,000	
12.	Remove mobile homes		Lump Sum	50,000	50,000	
13.	Upgrade existing sewer and water systems		Lump Sum		60,000	
14.	Underground power and telephone	6,500	Lin.Ft.	6	39,000	

Rancho Monticello

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
15.	General landscape develop- ment		Lump Sum		100,000	2,039,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		937,940
			Total			2,976,940
			Rounded Total			2,977,000

Area 8 - Berryessa Marina

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2'shoulders	2,200	Lin.Ft.	20	44,000	
2.	Parking - includes curbing and striping	165	Each	1,500	247,500	
3.	Parking - boat trailers	100	Each	1,000	100,000	
4.	Travel trailer park - includes roads, utilities hookups, comfort stations, site preparation	60	Each	4,000	240,000	
5.	Access trail for bank fishing	500	Lin.Ft.	5	2,500	
6.	Sanitary facilities	2	Each	15,000	30,000	
7.	Fish cleaning facility	1	Each	2,000	2,000	
8.	Remove mobile homes		Lump Sum	50,000	50,000	
9.	Upgrade existing sewer and water systems		Lump Sum	50,000	50,000	
10.	Underground power and telephone	2,000	Lin.Ft.	6	12,000	
11.	Landscape rehabilitation		Lump Sum	15,000	15,000	
12.	General landscape development		Lump Sum		35,000	828,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		380,880
				Total		1,208,880
				Rounded Total		1,209,000

Area 9 - Islands

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Ferry terminus (floating platform) and building with refreshments, sundries and bicycle rental	1	Lump Sum	50,000	50,000	
2.	Courtesy docks	400	Sq.Yds.	50	20,000	
3.	Walk-in campsites - includes site preparation, tables, fireplace, tent site	120	Each	500	60,000	
4.	Walk-in group campsite - includes site preparation, tables, fireplace, etc. for 50 visitors	1	Each	5,000	5,000	
5.	Walk-in/boat-in picnic sites	165	Each	400	66,000	
6.	Standard comfort station	8	Each	17,000	136,000	
7.	Monomatic comfort station	4	Each	900	3,600	
8.	Bathhouse with restrooms and wall dressing areas - 600 swimmers	1	Lump Sum	60,000	60,000	
9.	Swimming beach - imported sand graded to 1' depth, 200' wide, includes drainage structures	700	Lin.Ft.	150	105,000	
10.	Irrigated turf - open play area and sunbathing	3	Acre	17,000	51,000	
11.	Hiking trails	5	Miles	10,000	50,000	
12.	Bicycle trails - paved	3	Miles	20,000	60,000	
13.	6" CI waterline	9,000	Lin.Ft.	12	108,000	
14.	6" CI sewerline with manholes	10,000	Lin.Ft.	14	140,000	
15.	Sewage lift station	1	Each	18,000	18,000	

Islands

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
16.	2" GS waterline	1,200	Lin.Ft.	8	9,600	
17.	Underground power and telephone	10,000	Lin.Ft.	7	70,000	
18.	General landscape development		Lump Sum		50,000	1,062,200
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		488,612
				Total		1,550,912
				Rounded Total		1,551,000

Areas 10 and 11 - West Shore and Park Headquarters

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	4,500	Lin.Ft.	20	90,000	
2.	Parking - with curbing and striping	1,185	Each	1,500	1,777,500	
3.	Picnic sites - excludes parking and sanitation	155	Each	300	46,500	
4.	Trail heads with exhibits	2	Each	2,000	4,000	
5.	Hiking trail	3.5	Miles	10,000	35,000	
6.	Bicycle trails	2.5	Miles	20,000	50,000	
7.	Standard comfort stations	8	Each	15,000	120,000	
8.	Swimming beach - imported sand graded to 1' depth - 200' wide, includes drainage structures	700	Lin.Ft.	120	84,000	
9.	Irrigated turf - sunbathing and open play area	2	Acre	15,000	30,000	
10.	Dike construction - compacted imported borrow material	13,000	Cu.Yds.	4	52,000	
11.	Circulating pump and intake structure, piping and spillway	1	Lump Sum	40,000	40,000	
12.	Bathhouse with comfort stations and wall dressing area	1	Sum	50,000	50,000	
13.	Courtesy dock	100	Sq.Yds.	45	4,500	
14.	Boat rental dock	200	Sq.Yds.	45	9,000	
15.	Ferry terminus with concessions, refreshments, sundries, bike rental	1	Lump Sum	60,000	60,000	
16.	Elevated covered boardwalk	4,000	Sq.Ft.	12	48,000	

West Shore and Park Headquarters

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
17.	Car top launch	350	Lin.Ft.	70	24,500	
18.	Fish cleaning facility	1	Each	2,000	2,000	
19.	Visitor center	1	Lump Sum	150,000	150,000	
20.	Enlarge maintenance facilities	1	Lump Sum	200,000	200,000	
21.	6" CI sewerline with manholes	5,000	Lin.Ft.	12	60,000	
22.	Sewage lift stations	5	Each	15,000	75,000	
23.	Interim sewage lagoon		Lump Sum	60,000	60,000	
24.	Water intake system		Lump Sum	6,000	6,000	
25.	Water treatment plant		Lump	40,000	40,000	
26.	6" CI waterline	3,000	Lin.Ft.	10	30,000	
27.	2" GS waterline	2,000	Lin.Ft.	5	10,000	
28.	Underground power and telephone	5,000	Lin.Ft.	6	30,000	
29.	Employee residence	1	Each	30,000	30,000	
30.	General landscape development		Lump Sum	155,000	155,000	3,373,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		1,551,580
				Total		4,924,580
				Rounded Total		4,925,000

Area 12 - Spanish Flat

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2'shoulders	2,000	Lin.Ft.	20	40,000	
2.	Parking with curbs and striping	490	Each	1,500	870,000	
3.	Parking - boat trailer	175	Each	1,000	175,000	
4.	Picnic sites, includes tables, fireplace, refuse containers, and site preparation	20	Each	400	8,000	
5.	Stabilized swimming area - imported sand graded to 1' depth, 200' wide, includes drainage structures	400	Lin.Ft.	120	48,000	
6.	Earth work for swimming area		Lump Sum	50,000	50,000	
7.	Circulating pump, intake structure, piping and spillway		Lump Sum	25,000	25,000	
8.	Bathhouse with restrooms, wall dressing areas and small refreshment concession		Lump Sum	40,000	40,000	
9.	Irrigated turf areas for sunbathing and open play areas	2	Acre	15,000	30,000	
10.	Amphitheater, seats, screen, stage and rear screen protection		Lump Sum	30,000	30,000	
11.	Interpretive exhibits		Lump Sum	2,000	2,000	
12.	Fishing float	250	Sq.Yds.	40	10,000	
13.	Fish cleaning facility	1	Each	2,000	2,000	

Spanish Flat

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
14.	Dock and concession building for boat rental		Lump Sum	10,000	10,000	
15.	Standard comfort station	3	Each	15,000	45,000	
16.	Upgrade existing water and sewer systems		Lump Sum	40,000	40,000	
17.	Landscape rehabilitation		Lump Sum	25,000	25,000	
18.	Relocate and develop new marina facilities		Lump Sum	50,000	50,000	
19.	Remove dry boat storage		Lump Sum	15,000	15,000	
20.	General landscape development		Lump Sum		85,000	1,610,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			<u>19%</u>		
				46%		740,600
				Total		2,350,600
				Rounded Total		2,351,000

Area 13 - Capell Creek Wayside

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	2,000	Lin.Ft.	20	40,000	
2.	Fish cleaning facility	1	Each	2,000	2,000	
3.	Building for sundries and refreshments					
4.	Family camps with comfort stations, parking, roads, site preparation, fireplace, tables, etc.	34	Each	2,500	87,500	
5.	Picnic sites with comfort stations, parking, tables, fireplace, water, site preparation, etc.	35	Each	2,400	84,000	
6.	Building - orientation and information	1	Lump Sum	30,000	30,000	
7.	Parking - includes curbs and striping	40	Each	1,500	60,000	
8.	Shoreline trail access	800	Lin.Ft.	4	3,200	
9.	Underground power and telephone	1,600	Lin.Ft.	6	9,600	
10.	Interim vault privy	2	Each	2,500	5,000	
11.	Interim well and pressure water system		Lump Sum	15,000	15,000	
12.	General landscape development		Lump Sum		20,000	386,300
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			<u>19%</u>		
				46%		177,698
				Total		563,989
				Rounded Total		564,000

Area 14 - Lower Capell Creek

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	3,000	Lin.Ft.	20	60,000	
2.	Fish cleaning facility	1	Each	2,000	2,000	
3.	Courtesy dock	100	Sq.Yds.	45	4,500	
4.	Car top launch ramp - 12' wide	350	Lin.Ft.	70	24,500	
5.	Standard comfort stations	2	Each	15,000	30,000	
6.	Shoreline trail access	2,400	Lin.Ft.	4	9,600	
7.	Parking - includes curbs and striping	80	Each	1,500	120,000	
8.	Overlook with interpretive devices	1	Lump Sum	10,000	10,000	
9.	Interim well and pressure water system		Lump Sum	20,000	20,000	
10.	Interim vault privy	5	Each	2,500	12,500	
11.	Underground power and telephone	500	Lin.Ft.	6	3,000	
12.	General landscape development		Lump Sum		15,000	311,100
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		143,106
				Total		454,206
				Rounded Total		454,000

Area 15 - Steele Park

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	2,000	Lin.Ft.	20	40,000	
2.	Parking with curbs and striping	355	Each	1,500	382,500	
3.	Parking - boat trailer	300	Each	1,000	300,000	
4.	Picnic sites - includes tables, fireplace, refuse containers and site preparation	25	Each	400	10,000	
5.	Campsites - includes roads, utilities, comfort stations, and site preparation	70	Each	2,500	175,000	
6.	Standard comfort station	3	Each	15,000	45,000	
7.	Remove existing boat trailer, storage sheds and boat trailer parking		Lump Sum	15,000	15,000	
8.	Remove camping		Lump Sum	5,000	5,000	
9.	Reestablish vegetation	3	Acre	2,000	6,000	
10.	Courtesy dock	100	Sq.Yds.	45	4,500	
11.	Fish cleaning facility	1	Each	2,000	2,000	
12.	General landscape development		Lump Sum		50,000	1,035,000
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		476,100
				Total		1,511,100
				Rounded Total		1,511,000

Area 18 - South Shore

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	4,000	Lin.Ft.	20	80,000	
2.	Parking with curbs and striping	240	Each	1,500	360,000	
3.	Boat trailer parking	125	Each	1,000	125,000	
4.	Trail head with interpretive exhibit	1	Each	2,000	2,000	
5.	Dual bicycle and hiking trail	2	Miles	20,000	40,000	
6.	Overlook	1	Lump Sum	5,000	5,000	
7.	Picnic sites - includes tables, fireplaces, refuse containers, and site preparation	40	Each	400	16,000	
8.	Campsites - includes roads, utilities, comfort stations, site preparation	65	Each	2,500	162,000	
9.	Travel trailer park - includes roads, utilities, hookups, comfort stations, site preparation	165	Each	4,000	660,000	
10.	Fish cleaning facility	1	Each	2,000	2,000	
11.	Standard comfort station	4	Each	15,000	60,000	
12.	Screen planting - travel trailer park with irrigation	1,600	Lin.Ft.	6	9,600	
13.	Landscape rehabilitation		Lump Sum	10,000	10,000	
14.	Remove mobile homes		Lump Sum	50,000	50,000	

South Shore

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
15.	Bicycle rental shop		Lump Sum	6,000	6,000	
16.	Upgrade existing water and sewer systems		Lump Sum	40,000	40,000	
17.	Underground power and telephone	7,500	Lin.Ft.	6	45,000	
18.	General landscape development		Lump Sum	100,000	100,000	1,774,100
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				<u>46%</u>		816,086
				Total		2,590,186
				Rounded Total		2,590,000

Areas 19, 20, and 21 - Markley Canyon and Dam Area

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
1.	Access road - 22' roadway with 2' shoulders	1,600	Lin.Ft.	20	32,000	
2.	Parking with curbs and striping	40	Each	1,500	60,000	
3.	Pave existing parking	6,500	Sq.Yds.	5	32,500	
4.	Dual hiking and bicycle trail	2	Miles	20,000	40,000	
5.	Hiking trail	2	Miles	10,000	20,000	
6.	Picnic sites - includes tables, fireplace, refuse containers, and site preparation	35	Each	400	14,000	
7.	Courtesy docks	100	Sq.Yds.	45	4,500	
8.	Fish cleaning facility	1	Each	2,000	2,000	
9.	Standard comfort station	2	Each	15,000	30,000	
10.	Monomatic comfort stations	4	Each	700	2,800	
11.	Bicycle rental shop	1	Lump Sum	6,000	6,000	
12.	Interpretive exhibits	1	Lump Sum	2,000	2,000	
13.	Remove mobile homes		Lump Sum	50,000	50,000	
14.	Landscape rehabilitation		Lump Sum	20,000	20,000	
15.	Rehabilitate existing water and sewer systems		Lump Sum	100,000	100,000	

Markley Canyon and Dam Area

Item	Facility	Quantity	Unit	Unit Cost	Cost	Total
16.	Underground power and telephone	1,000	Lin.Ft.	6	6,000	
17.	General landscape development		Lump Sum		21,000	442,800
	Plans			15%		
	Supervision			12%		
	Contingencies & Facilitating Services			19%		
				46%		203,688
				Total		646,488
				Rounded Total		646,000

PLANNING TEAM

The study was conducted under the general direction of Mr. Edward F. Bullard, Staff Specialist (Landscape Architect), Division of Federal Assistance and Indian Affairs, Western Regional Office, National Park Service.

The members of the study team included:

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The team would also like to express its gratitude for the invaluable assistance of the following organizations and individuals:

Napa County Administrator and staff

Napa County Conservation, Development and Planning Department

Berryessa Park Commission

Lake Berryessa Resort Owners Association and individual members

Lake Berryessa Park Director and staff

Region II Office, Bureau of Reclamation

Department of Interior, Office of the Solicitor, San Francisco



