

**LAKE
BERRYESSA
AREA
PLAN**



YUBA COUNTY, CALIFORNIA
June 1971



NAPA
711-3

LAKE BERRYESSA AREA PLAN
AN ELEMENT OF THE
NAPA COUNTY GENERAL PLAN

JUNE, 1971

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FOREWORD

The Lake Berryessa Area is one of Northern California's unique recreational assets due to its location, climate, wildlife and topography.

It is located approximately 45 air miles northeast of San Francisco and approximately 35 air miles west of Sacramento. It is the largest fresh-water lake in the nine county San Francisco Bay Area. These nine counties, Sonoma, Solano, Marin, San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa and Napa have a combined 1970 population of 4,846,300. This figure could increase 54% by 1990, to produce a population of 7,477,100, according to forecasts prepared by the California State Department of Finance, Bay Area Transportation Study Commission and the Association of Bay Area Governments.

The five county Sacramento Area population is forecast to increase from an estimated current population of 886,000 to a 1990 population of 1,525,000, according to the Sacramento Regional Area Planning Commission.

Combining the Sacramento Area with the Bay Area places Lake Berryessa less than 45 minutes from a potential population of 9.0 million people by 1990, making it one of the most important recreation facilities in Northern California.

Climate at the Lake is excellent for recreation, with air temperature during the summer varying from warm to hot during the day and warm to cool in the evening. Summer water temperature exceeds 80 degrees fahrenheit near shore and the water is clearer than most warm-water lakes.

Wildlife is diverse in the Area. Warm-water fish include black bass, perch and crappie, and cold-water fish in the lake include trout. Deer, ducks and geese are seen with increasing frequency. The northern and eastern shoreline, because of their shallow water and marshy vegetative growth, have a potential of becoming major waterfowl areas.

The Lake is surrounded by gently rolling hills except at the southern end and along the banks of narrow arms where steep canyon sides and water gaps rise abruptly from the lakeshore. Stream and vegetative patterns add interesting variety to the valleys and ridge lines that lie generally in the northwest-southeasterly direction.

Planning for the future of Lake Berryessa and the surrounding area is the shared responsibility of two commissions established by the Napa County Board of Supervisors. The Napa County Conservation, Development and Planning Commission is the agency responsible for the planning of the area around Lake Berryessa and the balance of Napa County. The Lake Berryessa Park Commission is the agency responsible for the planning for the Lake and the strip of Federally-owned shoreline that encircles the Lake.

In order to provide a complete picture of future plans for the entire Lake Berryessa Area, the Park Commission prepared, as part of this Report, a section dealing with the organization and work of the Park Commission and their future planning goals and recommendations. The Park Commission's statement is included as Part I of the Report.

The main body of the Plan that follows deals with the future growth and development of the larger area of Lake Berryessa. The total land area covered by the Plan represents about one-third of the land area of Napa County.

Special acknowledgement is made of the assistance and cooperation of the Lake Berryessa Park Commission, Gilbert Yates, Director, Lake Berryessa Park Department, and the members of the Lake Berryessa "701" Study Technical Advisory Committee.

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1. LAKE BERRYESSA AND THE LAKE BERRYESSA PARK COMMISSION

Prepared by the Lake Berryessa Park Commission

The possibility of building a dam in Napa County at Devil's Gate, the site of the present dam, had been studied as early as the turn of the century by farmers in the Yolo by-pass area. The combination of a narrow gorge and a wide valley made it almost a natural reservoir site.

Monticello Dam was constructed on Putah Creek, about 17 miles northeast of the City of Napa, at the joining of Napa, Solano and Yolo Counties. The waters impounded by the dam inundated Berryessa Valley and created Lake Berryessa. The Lake is approximately 22.5 miles long and 3.0 miles wide, lying wholly in Napa County. The reservoir has a total shoreline of 170 miles.

Some of the high lights of the history and character of the Lake and it's development are as follows:

- 1) 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 seasonal changes in the level of the Lake, it was not felt that the Lake would become a major recreational facility. Therefore, during the construction phase of the reservoir, no provision was made for access to the Federally-owned shoreline areas suitable for recreation uses.

However, even while the Lake was forming, the public started coming in increasing numbers. During this period, the only access to the Lake was from a limited number of existing roads. There were no sanitary or refuse disposal facilities. The Napa County Board of Supervisors were advised by both the State and County Boards of Health that the Lake would have to be closed to public use unless these facilities were provided.

- 2) Both the National Park Service and the State Division of Beaches and Parks studied the recreation potential of Lake Berryessa. 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 recreational use and recommended that the Lake be administered by a State or Regional agency.

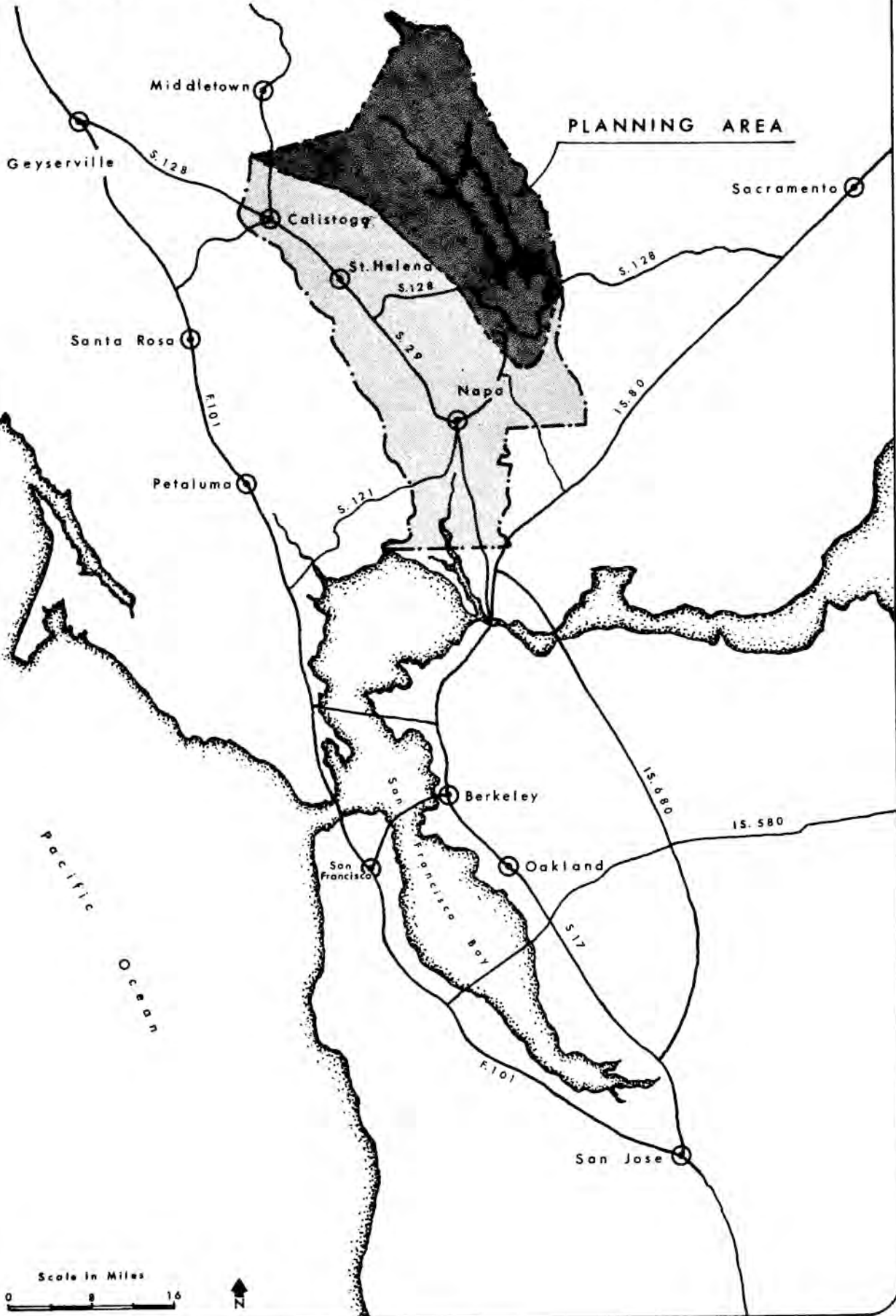
The Division of Beaches and Parks of the State of California, in January, 1957, released a report entitled, "State Park Potentialities of Monticello Reservoir and Putah Diversion Pool, Napa, Solano and Yolo Counties, California". In summary, the State report recognized the high potential of the area for public use, but did not recommend it's development as a State Park. A re-evaluation of the Lake was made by the State Park Commission in November, 1957. The Commission's 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 (Lake Berryessa) for recreation purposes. The report recommended development of portions of the project land area and acquisition of additional adjacent lands. However, the State concluded that they would not have funds to proceed with this project for at least ten (10) years.

- 3) On July 31, 1958, Napa County entered into a Land Management Agreement with the Federal Bureau of Reclamation, naming Napa County to administer the public lands within the Reclamation Zone adjacent to Lake Berryessa for recreational purposes. The area of Federal ownership was established as a minimum distance of approximately 300 feet, measured horizontally from the maximum high water line. Lake Berryessa is the first lake in the history of the Bureau of Reclamation to be managed by a local government agency.

The original management agreement was amended in 1962 to permit the County to enter into lease agreement with private concessionaires for the development of various shoreline areas. The terms of the new agreement stipulated that the leased areas would be developed for recreational purposes and that the individual leases would run for a period of thirty (30) years, plus two ten (10) year renewal options. All leases could be terminated upon ninety (90) days notice of either party. The ninety (90) day provision is now being reconsidered as it limits the financing available to individual concessionaires.

- 4) From the beginning the Board of Supervisors has not felt that the cost of improving or maintaining Lake Berryessa as a regional recreation facility should be a burden on the taxpayers of Napa County. As recently as April 27, 1971,

LAKE BERRYESSA PLAN AREA



the Board has reaffirmed its commitment to the following policies:

- "A. That the County does not intend to directly develop, operate and/or provide short term or day use recreational facilities at Lake Berryessa.
- B. That the private enterprise approach most efficiently, effectively and economically can provide facilities to all categories of recreational users."

The Lake Berryessa Park Commission

In August of 1958, the Board of Supervisors created the Lake Berryessa Park Commission to serve as an advisory board for the planning and management of Lake Berryessa. This commission consists of five members, representing businessmen, ranchers, sportsmen and boaters.

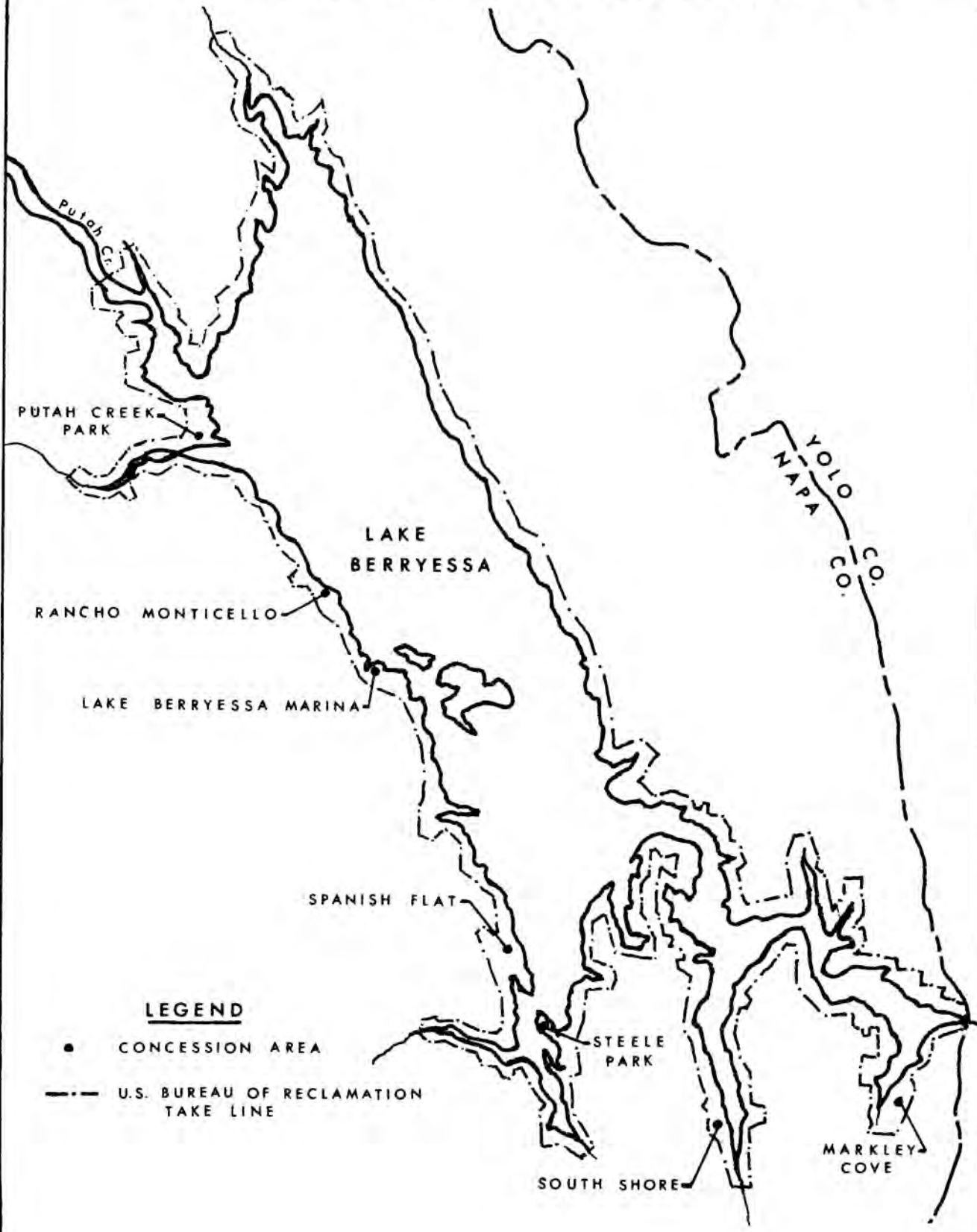
Funds were not provided by the Federal Government for any operation cost or improvements, including such minimum basic public use facilities as roads or parking areas or sanitary facilities of any kind. In order to provide funds needed for these purposes, the Park Commission recommended that private concessionaires, using their own funds be invited to develop the shoreline of the Lake to provide public facilities at no cost to the taxpayers.

In accord with this concept, and with the approval of the Bureau of Land Management, seven resort areas were established in conformance with the National Park Service Public Use Plan (See Map 11). Concessionaires' investments were to be repaid from fees and charges for services, goods and accommodations in addition to launching and gate fees. All rates and charges are subject to review and regulation by the County.

Initially, the cost to the concessionaires for the construction of all weather roads, water and sewer facilities, etc., was substantial, while the revenues returned from camping facilities were relatively small. In recognition of the growing demand for mobilehome sites, concessionaires were allowed to provide temporary sites. Revenues primarily from the trailer site rentals brought the revenues from the resort area more closely into balance with what was needed to sustain the concessionaires' long term improvement investments. The Park Commission developed standards for each resort area and each concessionaire is responsible for the operation, maintenance and policing of all facilities in his area.

The Lake Berryessa Park Commission employs a full-time park

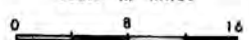
LAKE BERRYESSA AND CONCESSION AREAS



LEGEND

- CONCESSION AREA
- - - U.S. BUREAU OF RECLAMATION TAKE LINE

Scale in Miles



director, sanitarian and a staff of rangers, who not only police the area, but direct rescue operations, maintain the facilities and collect the debris left by water skiers, picnickers and fishermen.

The duties of the Lake Berryessa Park Commission include the following:

- 1) To advise the Board of Supervisors with regard to management and planning of the concession and takeline areas under the existing agreement between the U. S. Bureau of Reclamation and the County of Napa.
- 2) To recommend to the Board of Supervisors on leases, concessions, rates and charges for Lake Berryessa.
- 3) To review the specific plans and specifications of all improvements and structures approved by the Park Director, prior to actual construction.
- 4) To maintain the general management and administration of the Lake Berryessa Area through the Park Director.
- 5) To prepare and maintain a master plan of Lake Berryessa subject to the approval of the Board of Supervisors.
- 6) To make complete such other assignments or duties as may be requested of the Commission by the Board of Supervisors.

Current Commission Programs and Activities

Since the start of development at Lake Berryessa in 1958, the following facilities and services have been completed through the concessionaires' lease development program:

8 Access Roads	2 Picnic Shelters
38 Miles Interior Roads	193 Toilets
6,400 Car Parking Spaces	231 Drinking Water Outlets
10 Campgrounds	6 Swimming Beaches
1,144 Tent Spaces (Number in Campground)	7 Boat Launching Ramps
915 Trailer Spaces (Number in Campground)	564 Boat Docks (Capacity)
8 Picnic Areas	215 Lodging Capacity (7 Concessions)
1,282 Picnic Tables	191 Rental Boats
	8 Cafes

These facilities and services have all been developed at no cost to the taxpayers of Napa County or the State of California. To date more than 7.6 million dollars in private funds have been expended

for improvements at Lake Berryessa.

Population Use Statistics - 1969 and 1970 Calendar Years

Based on records maintained by the Park Director, the following statistics indicate the volume of use of Lake Berryessa during 1969 and 1970.

<u>ACTIVITY</u>	<u>VISITOR DAYS</u>		
	<u>1969</u>	<u>1970</u>	
Sight-seeing	444,869	448,692	
Picnicking	270,143	276,366	
Camping	160,157	156,667	
Swimming	210,320	177,635	
Water-skiing	275,653	277,378	
Boating	268,808	292,631	
Fishing	217,289	216,201	
TOTAL DAYS	1,847,239	1,845,570	
1) Other Use Statistics	<u>1969</u>	<u>1970</u>	
Peak Day (Number of Visitors)	37,443	35,382	
Cars in Area (Total Number)	443,374	433,058	
2) Distribution of Park Users			
Napa County	5%	5%	
Other Areas	95%	95%	
TOTALS	100%	100%	
3) Water Craft Use			
<u>1969</u>	<u>POWERBOATS</u>	<u>ROWBOATS & SAILBOATS</u>	<u>TOTAL</u>
Boat Days	166,623	3,084	169,707
Peak Day Use (Number of Boats)	4,615	117	4,732
<u>1970</u>			
Boat Days	132,651	4,174	136,825
Peak Day Use (Number of Boats)	1,906	259	2,165

Future Planning Goals and Policies

The Park Commission, while it does not have a separate plan (different from the 1959 National Park Service Plan), has established the following general planning objectives and policies for the future development of the Lake shoreline.

Long Range Goal #1

PROVIDE A BALANCED RECREATION PROGRAM INCLUDING THE LAKE AND THE SHORELINE.

Immediate Objectives:

- 1) Concessionaires to provide more picnic and campsites.
- 2) Encourage the development of a golf course and tennis courts.

Long Range Goal #2

DEVELOP A LANDSCAPING PROGRAM TO PROVIDE A MORE PARK LIKE SETTING FOR THE LAND AND SHORELINE AREAS.

Immediate Objectives:

To encourage the planting of trees and other plant materials, relying primarily on vegetation that is heat resistant, fast growing and has a minimum susceptibility to damage from deer and other animals.

Long Range Goal #3

PROVIDE IMPROVED ACCESS TO THE LAKE.

Immediate Objectives:

Improvement of the roads in and around the Lake shoreline.

The Park Commission works closely with each of the seven concessionaires in the preparation of plans for the balanced development of each area. In addition to providing the basic planning guidelines for the seven concessionaire areas, the 1959 Park Service Plan currently serves as the General Plan for the Lake shoreline use. However, a new Plan is currently in the preparation stages.

II. THE LAKE BERRYESSA AREA PLAN

The purpose of the balance of this Report is to provide the component parts for a General Plan, including long-range goals, development and conservation policies, program priorities and an implementation program for the Lake Berryessa Area.

The Lake Berryessa Area Plan is one element of the Napa County General Plan, but because of unique conditions, the Berryessa Area Plan has been published as a separate element of the General Plan.

The Plan contained in this Report is designed to accomplish two objectives:

- 1) To ensure the planned development of land uses. Particular attention has been given to providing a balanced approach between intensive and low density uses, recreation and residential, open space and development.
- 2) To provide for the conservation of the Area and to prevent the deterioration of its environment as a result of soil erosion, waste disposal, poorly planned highways or land use developments.

The Plan represents the first step toward solution to problems related to the Lake and the Lake Area. The people concerned with the future of Lake Berryessa must now work together through their private organizations in cooperation with various governmental agencies to further refine the Plan and guide future development in such a way that the development and conservation of the Lake Area proceed in a balanced relationship.

III. THE PHYSICAL SETTING

One of the major factors to be considered in preparing a general plan is the physical condition of the area, including hills, valleys and water courses. These factors determine to a large extent the future pattern of development. In addition, man made changes in the natural setting have an effect on future land use development.

Physical Conditions

The Lake Basin is shaped like a triangular bowl with Rocky Ridge forming the eastern edge, Angwin or Howell Mountain Ridge forming the western edge, and mountains in Lake County forming the northern edge of the bowl. Lake Berryessa in the southeast corner of the Basin is the flat bottom part of the bowl.

The natural setting of the Berryessa Basin consists of small grassy valleys with only scattered trees and brush. Prime agricultural soils located in Capell, Chiles, Pope and Snell Valleys and the northeastern shoreline and the western shoreline south of the Pope Creek arm of the Lake have grades ranging from 0 - 15%.

Other lands in the 0 - 15% category are table-lands which are relatively inaccessible; they are mainly level areas of elevated land located on ridgetops, such as Cedar Roughs and Adams Ridge, west and north of Lake Berryessa respectively (See Map III).

Steep grades limit the development potential of the area as 57% of the land area exceeds 25% in grade. The valley constitutes only 6% of the basin area (See Map III).

Vegetation in the Berryessa region falls into three general categories:

- 1) Tree covered, mainly Scrub Oak, Digger Pine and McNab Cypress, representing about 50% of the area, mainly on the south and east sides and small portions on the north and west sides of the Lake. These areas are predominately Class VI soils.
- 2) Brush covered, representing 40 to 45% of the area extending from Cedar Roughs northerly across Pope Creek, north from the Lake through Hunting Creek - Adams Ridge area and Rocky Ridge along the Yolo County Line, generally on Class VII and VIII serpentine soils.
- 3) The remaining land is either barren or grass covered with a mixture of grass and scattered trees.

Climate

The climate of the Basin is not greatly influenced by the Pacific Ocean because of the series of intervening ridges and valleys. Annual mean average air temperature is 60.1° F, with average maximum temperatures in the 90° F range in July and August and average minimum temperatures of about 38° F in December, January and February.

SLOPES



Rainfall varies from moderate to heavy. Rain gauges located in the Lake site area recorded a mean seasonal rainfall of 21.92 inches for the period from 1913 to 1947, with a maximum annual rainfall of 41.67 inches in 1940 - 1941 and a minimum annual rainfall of 10.76 inches in 1919 - 1920.

Man-Made Environment

Lake Berryessa is one of the two fresh-water lakes in the San Francisco Bay Area large enough for a full range of recreational facilities, the other is Del Valle Reservoir near Livermore. The extent of additional man-made development is small, with less than 1% of the 338 square miles devoted to urban use. Man-made developments around the Lake are located on the level land adjoining existing roads or the Lakeshore and consist primarily of scattered subdivisions and resorts.

Public land within the planning area administered by the Bureau of Land Management amounts to 38,688 acres or 60 square miles. The greater portion of this land is classified for retention and multiple use management. The land is located primarily along Blue and Rocky Ridges on the Yolo and Solano County Lines, Cedar Roughs in the Knoxville - Adams Ridge Area near the Lake County Line, and several scattered parcels (See Map IV).

IV. GROWTH FACTORS

Population growth is closely related to economic growth. These two factors are instrumental in shaping the form and activities of the area.

The Existing Economy

The 1960 U. S. Census, the most recent one available at the time this Plan was prepared, shows 44% of the area's labor force employed in agriculture, 13% employed in retail trade, 7% employed in each of public administration, mining, manufacturing, construction and other industry groups employed the remaining 15% of the area's labor force. This data for the Lake Berryessa Census Division in April, 1960, does not include employment figures for the peak summer months of the recreational season, but is typical of the off season industries and occupations.

The total labor force employed increased from 113 persons

BLM PUBLIC DOMAIN



SOURCE: U.S. BUREAU OF LAND MANAGEMENT (B.L.M.)



in 1960 to 254 persons in 1969. The 1960 occupational list shows 37% farm workers or managers, 12% service workers, 12% operatives and kindred (including process and material handlers) and 39% in other occupations.

Class of worker is 44% self-employed, 42% private wage and salary and 14% government employees. Means of transportation is 46% work at home, 42% private auto or car pool and 12% walked to work. Place of work is reported as Napa County (94%), Lake County (3%) and Alameda County, excluding Oakland (3%).

Economic Forecast

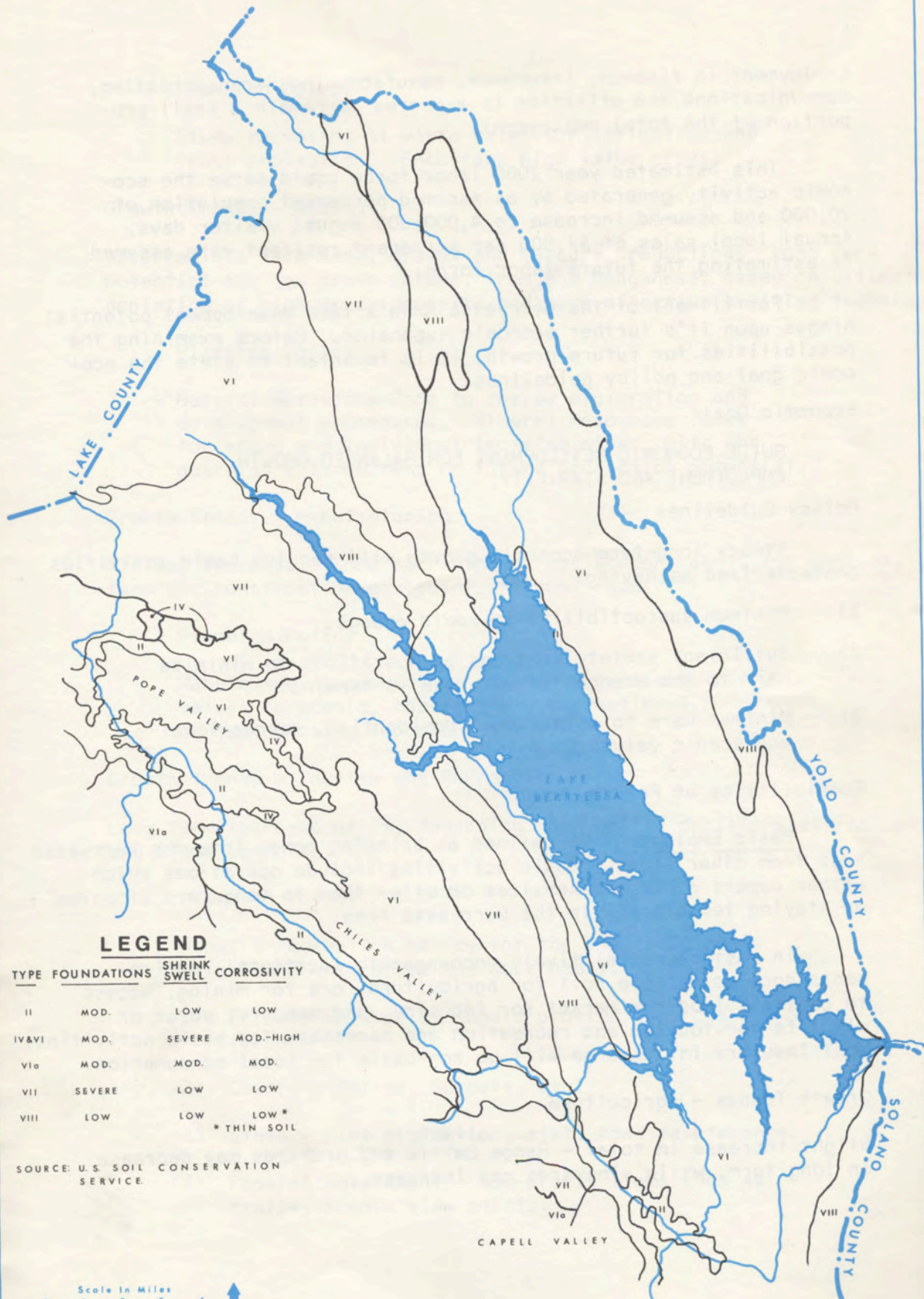
The total labor force is expected to expand to about 5,300 persons by the year 2000 (See Table A). The retail trade, recreation services and governmental services sectors are expected to increase in proportion to other employment as people move into the area. Mining, agriculture, construction and real estate employment will increase in total numbers in the long term, but will show year to year changes based on national economic conditions.

TABLE A

ESTIMATED LABOR FORCE AT PEAK SEASON - YEAR 2000

<u>EMPLOYMENT SECTOR</u>	<u>LABOR FORCE</u>	<u>% OF TOTAL</u>
Motels, Trailer Parks, Hotels	1,590	30
Wholesale and Retail Trade	1,325	25
Eating and Drinking	800	15
Government	425	8
Mining	264	5
Agriculture	212	4
Construction	212	4
Finance, Insurance and Real Estate	212	4
Manufacturing	160	3
Transportation, Communications and Utilities	<u>100</u>	<u>2</u>
TOTALS	5,300	100%

GENERAL SOIL TYPES



LEGEND

TYPE	FOUNDATIONS	SHRINK SWELL	CORROSIVITY
II	MOD.	LOW	LOW
IV&VI	MOD.	SEVERE	MOD.-HIGH
VIa	MOD.	MOD.	MOD.
VII	SEVERE	LOW	LOW
VIII	LOW	LOW	LOW*

* THIN SOIL

SOURCE: U.S. SOIL CONSERVATION SERVICE.



Employment in finance, insurance, manufacturing, transportation, communications and utilities is expected to remain a small proportion of the total employment.

This estimated year 2000 labor force could serve the economic activity generated by an assumed permanent population of 20,000 and assumed increase to 4,000,000 annual visitor days. Annual local sales of \$1,000 per permanent resident were assumed in estimating the future labor force.

Fulfillment of the Berryessa Area's land development potential hinges upon it's further economic expansion. Before examining the possibilities for future growth, it is important to state the economic goal and policy guidelines.

Economic Goal

GUIDE ECONOMIC DEVELOPMENT FOR BALANCED GROWTH,
EMPLOYMENT AND STABILITY.

Policy Guidelines

Steady long-term economic growth will require basic activities characterized as having:

- 1) Minimum susceptibility to rapid change.
- 2) Sufficient variety in types of operations to minimize harm to the economy if one type is terminated.
- 3) Minimum harm to established residential, recreational and scenic values.

Possibilities of Future Growth

Basic Employment is defined as bringing money into the Berryessa Area from other areas. Basic activities include operations which either export goods and services or offer them to consumers stopping or staying temporarily in the Berryessa Area.

In most cases relatively unchangeable locational requirements such as useable soil for agriculture, ore for mining, access to capital, labor or market for industry, and scenery, water or wildlife for tourism and recreation are necessary for basic activities. Most industry in the area will be non-basic for local consumption.

Growth Trends - Agriculture

Slight increase in total - Range Cattle and orchards may decrease in long term, while vineyards may increase.

Planning Policy

Study recycling of waste water for irrigation and frost protection. Encourage high value crops.

Growth Trends - Mining

Intermediate term sand, gravel and mercury production. Long term potential for low grade chrome, iron and manganese, based on ultimate depletion of high grade deposits and more effective smelting techniques.

Planning Policy

Natural Resources Code to review exploration and development procedures. Mineral Resources Zones for areas and individual isolated mines, pits and quarries with current or future production potential.

Growth Trends - Manufacturing

Minimal increase - Some machining of replacement parts for engines, farm and construction equipment and boat repair.

Planning Policy

Manufacturing should not destroy established values in scenic, residential, recreational or ecologically important areas.

Growth Trends - Tourism and Recreation

Long term increase of 7%, depending upon policy decisions of Federal and State agencies.

Planning Policy

Adopt a recreation policy for the following roles of private enterprise and government:

- 1) Private enterprise should provide services for profit.
- 2) County - Police, Schools, etc.
- 3) State - Fire protection, state road maintenance.
- 4) Federal Government - Non-profit items such as trails, scenic view points.

Non-Basic Employment is that which provides goods for the local needs and stimulates the circulation of money within the Berryessa Area. Non-basic activities include the local market activities of wholesale and retail trade, services, local government, construction, transportation, communications, utilities, finance, insurance and real estate. Some non-basic employment bringing money into the area is also provided by categories such as real estate and construction, bringing new investments into the area from outside. These amounts cannot be identified because of the limitations of existing data.

Growth Trends - Wholesale and Retail Trade

Wholesale activities will continue at minimum because of the proximity to San Francisco - Oakland complex. Retail trade employment is expected to increase in proportion to other employment.

Planning Policy

- 1) The recommended sites should be developed in intervals, at such time as the need for additional commercial development is indicated by increased population or purchasing power.
- 2) Discourage strip commercial development along major arterials and provide protection for housing and recreational areas.
- 3) Approved sites should have an average ground slope of 10% or less, so they would require no heavy grading.

Growth Trends - Services

Employment in restaurants, motels and trailer parks is expected to increase. Little employment is forecast in defense-space research development firms or other specialized small service firms because of lack of industry.

Planning Policy

Opportunities for expansion of recreational industry services in the public and private sectors should be emphasized.

Growth Trends - Local Government

Governmental services are mostly provided by Napa County and will

Increase with need for more services.

Planning Policy

A County Service District should be provided for the wide range of services such as water, sewerage, street lighting, etc.

Growth Trends - Construction

Seasonal - Private and public employment will vary on a year to year basis, but increase in the long term.

Planning Policy

Require pollution prevention plans from extractors of construction materials.

Growth Trends - Transportation, Communications and Utilities

Truck and auto use will increase. Some employment in communications and utilities will develop as urbanization increases.

Planning Policy

The ecological and visual effect of all facilities should be carefully considered and public hearings should be held before location decisions are made.

Growth Trends - Finance, Insurance and Real Estate

Limited industrial growth potential and competition from nearby metropolitan areas will limit this sector, except for real estate.

Planning Policy

Opportunities for expansion of finance, real estate and insurance should be provided.

Population Forecast

Existing Population - Based on the results of a special census of Napa County, conducted by the State in April, 1969, the 637 persons living in the Berryessa Area represents a gain of 339 persons since 1960. The Census also indicated a change in the make up of the population from a predominately young age group (20 - 44 years), to a predominately middle age group (45 - 64 years). The size of families average 2.72 persons per household. The unemployment rate

for the area is relatively low, 1.87%, compared to the national average of 3 to 6%. However, the rate is subject to seasonal changes.

Future Population - Population estimates for the Lake Berryessa Area are affected by the following factors:

- 1) Lack of a definite method for determining the exact percentage of the area's total population that will be permanent (year around residents) and the percentage that will be seasonal.
- 2) The undetermined status of Federal plans for the future use of the immediate shoreline area. Work is currently underway by Federal agencies to completely revise the original shoreline development plan. Major changes in the plan could substantially alter the potential future population and the ratio of permanent and seasonal residents.
- 3) Lack of definite plans and time schedules for the installation of basic utilities and services.
- 4) Lack of data collected as part of the 1970 Census.

However, a population estimate was developed, based on a review of facilities currently offered at each resort, such as mobilehome spaces, campgrounds, picnic areas, etc., and interviews with resort operators. Since Census figures do not describe completely the magnitude of the population now being served or the potential population to be served, the forecast included in Table B reflects the Area's average population during the recreation season.

It is forecast that 10% of the ultimate population predicted for the year 2000 will have been reached by 1980, if no public sewage or water facilities are available, and as high as 25%, if sewage and water systems are provided. It is further forecast that 30 to 50% of the ultimate development will occur by 1990.

West Shore - Lake Berryessa

The estimated population of the four resorts located along the west shore area are as follows:

TABLE B

<u>RESORT</u>	<u>ESTIMATED POPULATION</u>	
	<u>1970</u>	<u>1980</u>
Putah Creek Park	1200	1788 *
Rancho Monticello	2400	3400 **
Berryessa Marina	800	1600 ***
Spanish Flat Resort	2400	3567 *

* Expected annual increase of 7%

** Ultimate development expected before 1980.

*** Expansion of Berryessa Marina to the south of Smittle Creek on lands under lease to Berryessa Marina.

The following population forecasts are based on a growth rate of approximately 10% per year for the 1970 to 1980 period and 12% per year for the next 20 year period to 2000:

TABLE C

	<u>PROJECTED POPULATIONS</u>		
	<u>1980</u>	<u>1990</u>	<u>2000</u>
Resident	4,463	8,916	17,842
Non-Resident	18,282	36,139	71,853
TOTALS	22,745	45,055	89,695

V. PLANNING GOALS AND ASSUMPTIONS

One of the most important parts of every plan is the value structure or decisions contained in the plan. These decisions consist of two component parts - The goals sought to be realized through the plan and the planning process and the basic assumptions made in the preparation of the plan. If an individual does not agree with the stated goals and assumptions, it is not likely that he will agree with the more definitive portions of the plan.

The following goals and assumptions form the basic policy framework for the Lake Berryessa Area Plan and are directed toward the protection, preservation and enhancement of the natural qualities and beauty of the Area, and the development of a balanced area composed of open space, agriculture, recreation, residential, cultural and civic land uses.

Planning Goals

GOAL 1

PROVIDE FOR SAFE, ATTRACTIVE RESIDENTIAL AREAS PROPERLY LOCATED IN RELATION TO ESSENTIAL COMMUNITY SERVICES, NEARBY LAND USES AND UNDERLYING SOIL, GEOLOGY, LAND SLOPE AND EXISTING VEGETATION.

GOAL 2

ENCOURAGE THE PROVISION AND CONVENIENT LOCATION OF ADEQUATE COMMUNITY FACILITIES AT MINIMUM COST TO THE RESIDENTS.

GOAL 3

PROVIDE A TRANSPORTATION SYSTEM COORDINATED WITH PLANNED LAND USE AND PUBLIC FACILITIES WHICH WILL CAUSE A MINIMUM DISTURBANCE TO ESTABLISHED VALUES IN SCENIC, RECREATIONAL AND RESIDENTIAL AREAS.

GOAL 4

IMPROVE THE MANAGEMENT AND PROTECTION OF THE AREA'S AIR, WATER AND SOIL ECOLOGICAL SYSTEMS.

GOAL 5

IDENTIFY NEEDS AND INDUSTRIAL RESOURCES OF THE AREA AND PROVIDE FOR WISE USE AND MANAGEMENT OF THESE RESOURCES.

GOAL 6

PROVIDE A FULL RANGE OF RECREATIONAL AREAS AND FACILITIES FOR THE RESIDENTS OF THE COUNTY.

GOAL 7

PRESERVE THE NATURAL BEAUTY OF THE AREA, INCLUDING ITS UNIQUE AND HISTORICAL FEATURES.

GOAL 8

PROTECT THE VEGETATION AND ANIMAL HABITATS OF THE WATERWAYS AND FLOOD PLAINS FROM ENCROACHMENT OF DEVELOPMENT.

GOAL 9

PROTECT AREAS OF URBAN DEVELOPMENT FROM FLOODING.

GOAL 10

MAINTAIN AND ENHANCE THE AGRICULTURAL ENVIRONMENT OF THE BERRYESSA REGION.

GOAL 11

GUIDE ECONOMIC DEVELOPMENT FOR BALANCED GROWTH, EMPLOYMENT AND STABILITY.

Planning Assumptions

In development of the Berryessa Area General Plan the following planning assumptions were made:

- 1) That the population of the area will increase and that the population of the areas near the Lake will grow at a faster

rate than other parts of the area.

- 2) That the local and tourist traffic will increase.
- 3) That the Lake Berryessa Area will continue to provide water oriented recreational facilities to meet the needs of a portion of the multi-metropolitan area's population.
- 4) That increasing demands for all types of recreational facilities, with the greatest needs being for day use areas, camping and trails, will continue.
- 5) That the Agricultural Preserve Zoning adopted by the Board of Supervisors, is intended as a permanent means of protecting the prime soils of Napa County for the continued production and expansion of the County's agriculture.
- 6) That industry will not be a major factor in the area's economy; and that most industrial oriented activity will be limited and primarily to meet local needs. The mines in the area will be in operation only when mineral prices make them profitable.

VI. GENERAL PLAN RECOMMENDATION OF PLANNING PRINCIPLES

The following principles are essential to understanding the policy guidelines within the Plan. The principles were developed after investigation and analysis of the existing land use, population, physical features and previously prepared plans:

- 1) Existing land uses, in harmony with the goals, objectives and policy guidelines of the Plan, should be continued and in some cases expanded to meet future needs. Existing land uses are described in the report "Land Use and Population of the Lake Berryessa Area" released by the Commission, July, 1970.
- 2) Lands having existing or potentially severe erosional characteristics should be limited to low density development. Erosion can contribute to landslides, floods, water pollution and landscape scars. Less land area is disturbed and subjected to the forces of erosion by low density development.

Another erosion control measure is the retention of trees, brush and grass. The planting of vegetative cover on bare, highly erosive areas should be undertaken as a conservation measure wherever possible.

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Another erosion control measure is the retention of trees, brush and grass. The planting of vegetative cover on bare, highly erosive areas should be undertaken as a conservation measure wherever possible.

- 3) Land use patterns should include visual considerations to prevent the destruction of visual quality. The landscape can easily become a hodgepodge of roof tops, shining mobile-homes, power lines and poles. Therefore, the appropriate density and cluster subdivision design form should be carefully planned.
- 4) Development should be prohibited on lands having severe construction limitations. Although remoteness, soil conditions, slope over 15%, circulation, and utility problems are not insurmountable obstacles to development, they often require costly and continuous maintenance practices after development. Alternative uses such as controlled recreation, wildlife management or agriculture should be encouraged on land having extensive or unusual construction limitations. If range grazing dwindles, recreational and conservation uses of areas with natural streams, pond or woodlands should be encouraged. Installation of small dams in suitable areas can be a recreational asset as well as a conservation asset by serving as sediment and flood water retardation facilities.
- 5) Development and implementation of flood plain management and flood control programs that protect homes and property as well as stream side vegetation and control obstruction of natural floodways are needed.

Permanent installations may be excluded from flood plain land. Seasonal flooding of streams, deposit of rocks and sediment and bank undercutting make some areas difficult to develop. Occasional high water level in the Lake floods low lying areas for a short duration.

- 6) Overall density should be the major quantitative control in regards to areas developed for housing. The use of this principle permits the design form called "clustering". With this technique, development can be confined to land best suited for a given use and marginal land can be kept as open space. Clustering also encourages intermingling of living area and open space and variation of lot size and house type for greater design creativity. Cluster designs can usually be serviced more efficiently with utilities.
- 7) Highest development density should be situated on land having only slight to moderate limitations to construction with the exception of Class II valley soils having agricultural use potential. (See Map V).

Only 6% of the land in the planning area is valley land which

has less than 15% slope and Class II soil. These qualities of levelness and valley soil are so unique that these lands should be restricted to agricultural use with a permitted density of one dwelling unit per 20 acres.

- 8) Standards relating to design and location of mobilehome parks should conform to the density standards included in the Plan and in the Mobilehome Ordinance. The percentage of mobilehomes in the housing supply should be limited to ensure balanced development of the local housing supply, tax base and visual character of the area.

VII. DESCRIPTION OF THE GENERAL PLAN

The basic elements of the General Plan are summarized on the following pages. Each element is more thoroughly described in the sections that follow:

Residential use is proposed in portions of Capell Valley, South Shore, Spanish Flat and Soda - Elder Valley. Average density of one dwelling unit per 3 acres is recommended. Because of the adverse soil and slope conditions cluster development should be encouraged to leave streams, woodlands and steep slopes in their natural state.

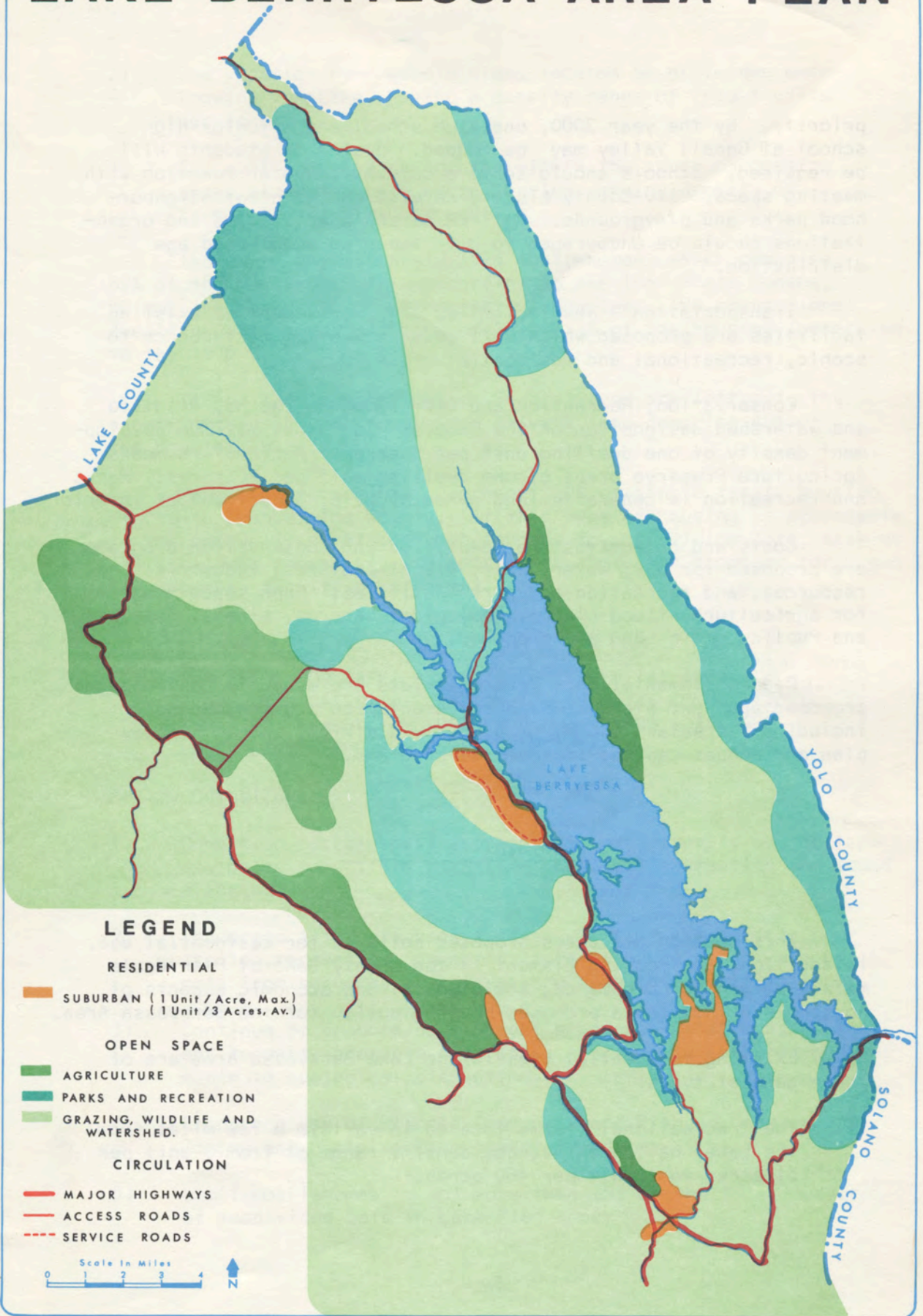
Neighborhood shopping centers are intended to include a grocery store, general store, coffee shop and personal service shops. They would be located at the intersection of major highways or a major and a collector highway. The Plan proposes one at Soda - Elder Valley, in addition to that existing at Spanish Flat.

A community shopping center is proposed in Capell Valley at State Highway 121 and 128 intersection, when the population of the area reaches 15,000 persons. A community shopping center would require a 10 to 20 acre site and could include a facility as large as a junior department store.

Minimum industrial development is anticipated due to the relative lack of access, labor force and market. Mining would occur when mineral prices increase enough to make it profitable.

Public and Semi - Public - Improving and centralizing water treatment and waste treatment facilities and an annual capital improvement program, with project referrals should receive highest

LAKE BERRYESSA AREA PLAN



priority. By the year 2000, one high school and a junior high school at Capell Valley may be needed. Busing of students will be required. Schools should serve a community center function with meeting space, City-County Library service and adjacent neighborhood parks and playgrounds. Retired person's activities and organizations should be encouraged to give the area a balanced age distribution.

Transportation - New facilities and improvement of existing facilities are proposed which will cause a minimum disturbance to scenic, recreational and residential areas.

Conservation, Recreation and Open Space - Grazing, wildlife and watershed designation on the General Plan means maximum development density of one dwelling unit per 5 acres. Agriculture means Agriculture Preserve areas of one dwelling unit per 20 acres. Parks and recreation is generally land owned by U. S. Department of Interior.

Goals and objectives are identified and conservation programs are proposed for air, water, soil, visual features, industrial resources, and recreation and park facilities. Open space programs for agriculture, flood plains, geological hazards, mineral resources and Public Domain Land are proposed.

Plan Implementation - Zone districts are evaluated and changes proposed and Next Steps in Plan implementation are recommended, including the establishment of a County district, scenic highway plan and annual capital improvement programs.

VIII. RESIDENTIAL LAND USE

This section discusses proposed policies for residential use. In addition, the Housing Element in the County General Plan deals mainly with housing demands, sociological and economic aspects of housing and includes a proposed housing policy for the Berryessa Area.

Existing residential uses in the Lake Berryessa Area are of three general types:

- 1) The "recreational" farms located in valleys a few miles from the Lake, having an average density range of from 1 unit per 31 acres to 1 unit per 460 acres.

- 2) The vacation home subdivision, located on hillsides overlooking the Lake, having a density range of 2 to 4 units per acre.
- 3) The mobilehome parks located within the seven concession areas along the Lake shore, having varying density of from 6 to 10 units per acre.

There are approximately 1525 mobilehomes, which comprise 89% of the housing stock. According to the 1969 State Census, 96 mobilehomes or 6% are permanently occupied. 196 conventional dwelling units comprised the remaining 11% of the housing, according to the 1970 U. S. Census.

If the 1340 mobilehomes on Federal land are left out, the approximately 185 mobilehomes on private land comprise 48% of the housing units.

Mobilehomes currently represent 20% of single family housing starts throughout the County. If this type of housing is acceptable to the community a ratio of mobilehomes to subdivision lots, such as 15% should be chosen and implemented in the areas proposed for urban and suburban density development.

Planning Goal

PROVISION FOR SAFE, ATTRACTIVE RESIDENTIAL AREAS PROPERLY LOCATED IN RELATION TO ESSENTIAL COMMUNITY SERVICES, NEARBY LAND USES AND UNDERLYING SOIL, GEOLOGY, LAND SLOPE AND EXISTING VEGETATION.

Policy Guidelines:

- 1) Condition parcel split and subdivision approvals on the land use being compatible with land features, aesthetics and sound planning.
- 2) Encourage alternate uses such as wildlife management, controlled recreation, or agriculture on parcels that are remote from services or have severe development limitations.
- 3) Continue to promote development standards which enhance the environment, preserve open space and amenity features and minimize ecological disruption.
- 4) Encourage use of Planned Community and Planned Development Zoning and Hillside Development Standards.
- 5) Limit mobilehomes to not more than 15% of the total number of subdivided lots in Lake Plan Area.

IX. PUBLIC AND SEMI - PUBLIC

This element describes goals and policy guidelines for public facilities. Emphasis has been placed on a program for improving and centralizing water treatment and distribution facilities and waste disposal facilities as part of a County Service District. Other functions of this proposed district are also discussed, including preparation of an annual capital improvement program, centralized administration of leisure services, street lighting, fire and police protection.

Planning Goals

ENCOURAGE THE PROVISION AND CONVENIENT LOCATION OF ADEQUATE COMMUNITY FACILITIES AT MINIMUM COST TO THE RESIDENTS.

Policy Guidelines:

- 1) Location - Locate facilities central to the area to be served, based on the land use densities and location established in the Berryessa Plan. Precise locations of schools, fire stations, parks, etc., should be based on individual community development plans.
- 2) Service Areas - Plan facilities to serve the largest possible service area. Establish boundaries and facilities for economies of construction, maintenance and operation based on projected population size and distribution. Use the most technically advanced waste water treatment systems available.
- 3) Administrative Agency - Provide leadership for establishing a County Service Area with authority to rehabilitate inadequate facilities and construct and maintain new facilities on both Federally-owned shoreline and nearby private lands.

This district should provide water supply, solid and liquid waste disposal, street lighting, police and fire services and shoreline erosion protection in three major service areas:

- a) An approximate 5 square mile area including the existing Napa Berryessa Resort Improvement District, Berryessa Highlands Subdivision, Steele Park and South Shore Resort.
- b) An approximate 8 square mile area including Capell, Soda and Elder Valleys with use of treated waste water for agricultural purposes.

- c) An approximate 16 square mile area, including resorts and potentially developable land on the west shore between Spanish Flat and Putah Creek.
- 4) Program Coordination - Encourage the annual preparation of capital improvement program and referral procedure for review of all public and semi-public projects for phasing, priority, financing and conformity to the General Plan.
- 5) Solid Waste Disposal Sites - Encourage the maximum protection of all environmental values, by the adoption of standards of planning, design, construction, operation and maintenance of the disposal site, which should include:
 - a) Location away from residential areas.
 - b) Screening from view by landscaping.
 - c) Good road access, not through residential areas.
 - d) No inhabited areas downwind from the site because dust and odor problems can occur in even the most carefully conducted operations.
 - e) Location to prevent flooding and pollution and contamination of surface and ground water.
 - f) Maximum haul distance standard of 15 miles.
- 6) Schools - Cooperate with appropriate local and State departments and agencies to upgrade schools and library services to meet the needs of permanent and non-permanent residents. Where agencies have similar objectives and programs (notably school districts and recreation departments) a single agency should be responsible for leisure services, so that an administrative structure is established to provide continuity of services. There could be a need for one high school and a junior high school at Capell Valley by the year 2000.
- 7) Recreation - Library - Provide and encourage public and private recreational facilities to meet the needs of all age groups. Berryessa Census Division statistics of the 1969 Special Census show the predominate age group is 45 to 65 years old and more persons in the over 65 age group than in the typical age distribution.

In 1970, a California Department of Recreation and Parks State-wide survey of 3,000 persons, showed that the desire for new outdoor activities does not decline noticeably among

adults, even for those over 65 years old. The report indicates a need for facilities for non-sport outdoor activities for middle aged and senior citizens.

- 8) Aquatic Research Center - Encourage establishment of a student oriented aquatic research center. Some research is already being done by students from Pacific Union College in Angwin and the University of California at Davis, but additional data is needed to determine baseline standards and long term recording procedures for lake, ground and surface water quality monitoring, rainfall and temperature records. Ground water levels and other studies are needed.

X. TRANSPORTATION

Highway transportation facilities in the Lake Berryessa Area are not utilized as much for home to work trips, as for shopping, driving to recreational areas, etc.; 43% of the residents work at place of residence and 12% walk to work, in the Berryessa Census Division, according to the 1960 U. S. Census. This indicates a possible need for walkways connecting activity centers. These goals, policy guidelines and implementation action steps will provide the framework for transportation improvement.

Planning Goal

PROVIDE A TRANSPORTATION SYSTEM COORDINATED WITH PLANNED LAND USE AND PUBLIC FACILITIES WHICH WILL CAUSE A MINIMUM DISTURBANCE TO ESTABLISHED VALUES IN SCENIC, RECREATIONAL AND RESIDENTIAL AREAS.

Policy Guidelines

- 1) Encourage improvement of existing highways, whenever feasible, with passing lanes, turnouts, etc., to improve traffic flow. Establish a program to improve Wooden Valley Road to parkway standards, as defined in the General Plan, from Interstate Route 80 to Capell Valley. Because of topographical limitations of the area, existing roads utilize most of the economically feasible highway locations and much of the future highway construction will consist of improvement of existing routes.
- 2) Regarding new routes, initiate corridor studies to reduce

environmental impact on historical and scenic sites, and ecological systems.

- 3) Establish an official plan line policy for providing street extensions for joint access along the western perimeter of the Lake. Such plan line could provide for a collector street paralleling the Berryessa-Knoxville Road, with feeder streets to it. Typical subdivision developments in such recreation areas are small (with less than 100 lots) separated units with private entrances. They ultimately result in a mass of tightly fitted, unrelated subdivisions which are inefficient and expensive for public service and lack two means of ingress and egress in case of emergency.
- 4) Recommend the establishment of a scenic drive category, as defined in the General Plan, for non-arterial roads which follow the natural landscape, with the least destruction to the natural landscape and serve as access to adjoining properties and as a low-speed scenic by-pass connecting the State and County Scenic Highway Systems with areas of outstanding scenic, recreational or cultural value. Scenic drives with turn outs and picnic areas should be constructed in Pope Valley on Dollarhide Road along Maxwell Creek, on Barnett Road extended along Pope Creek and Ink Grade Road.
- 5) Endorse the concept of bicycle paths along all highways and between activity centers in recognition of the trend of increasing use of bicycles and recent State legislation favoring bicycle paths.

Action Steps

The following action steps are proposed for immediate implementation. As such they represent the Conservation, Development and Planning Commission's transportation program for the Lake Berryessa Area.

- 1) Cooperate with the State Division of Highways in their preparation of freeway corridor studies through Wooden, Capell and Pope Valleys, and Butts Canyon as alternate route to Napa Valley Freeway and prepare supplemental plans for land use and circulation within the corridor and especially at proposed interchanges. Recommend parkway standards as defined in the General Plan for this route.
- 2) Establish a plan for scenic highways with vista points, selective landscaping, sign control and facilities for recreational travel by bicycle, horseback and foot.

- 3) Encourage a roadside cut and fill bank stabilization program, as needed by the County and State, on a continuing basis for good road maintenance and landscape aesthetics.
- 4) Investigate the availability of Federal and State funds for recreational travel facilities for bicycle, horseback riding and hiking to connect nearby activity centers and provide access to Bureau of Land Management and private recreational areas.
- 5) Authorize a location study of a Class II General Aviation site. Preliminary data indicates that the eastern shoreline and Pope Valley meet most site requirements. Design and layout criteria to be met are; no water courses through the site, suitable site and surrounding topography, suitable underlying soil, available construction material, noise levels and flight patterns in regard to nearby schools, residential and commercial areas and convenience to users of resorts, subdivisions and other activity centers.

XI. CONSERVATION, RECREATION AND OPEN SPACE

Conservation includes a wide variety of topics. However, conservation can be divided into four distinct categories; ecological conservation (air, water and soil), industrial resources conservation, recreational conservation and aesthetic conservation.

Ecological Conservation is concerned with the preservation of clean air, pure water and productive soil. Since neither air nor water pollution respects political boundary lines, these problems are area wide or regional in nature. However, the rapid deterioration of the quality of our air, water and soil is focusing the attention of all levels of government on ecological conservation.

Industrial Resources Conservation is concerned with the preservation and use of natural resources needed by industry and a continuing review of technological changes in resource demand and supply. Its main concerns are construction material and mineral extraction industries.

Recreation Conservation is concerned with the use of national public domain lands, state parks, city and county recreation areas, hunting, fishing, swimming, boating, sight-seeing, wildlife refuges and other recreation areas. Currently there is a rising demand for

recreational use space because of a general increase in affluence, leisure time, discretionary income and automobile ownership.

Aesthetic Conservation is concerned with preservation of attractive and appealing features in the natural and man-made landscape. In the Berryessa Area these features might include the preservation of historical and architectural landmarks such as bridges and buildings made of local volcanic rock. These buildings give the County a distinctive architectural identity. It also is concerned with the potential adverse visual impact of solid waste disposal sites, auto wrecking, surface mines, signs, utility lines, etc.

These four categories cover a wide range of man's needs including air, water and crops for survival, of the availability of material and supplies, or places for relaxation and recreation including areas of scenic and man-made beauty and the preservation of the area's historic heritage. The following two sections deal with goals and objectives.

The concluding sections contain recommendations and proposed implementation action steps.

Goals and Objectives

The following goals and objectives are directed toward the development of a sound and continuing conservation program in the Berryessa Area. While the goals are very general in nature, they identify a general direction for a continuing program on a long term basis. Objectives by comparison are more obtainable and are intended to identify specific items or areas of accomplishment.

Ecological Conservation

Conservation and Planning Goal

TO IMPROVE THE MANAGEMENT AND PROTECTION OF THE AREA'S AIR, WATER AND SOIL ECOLOGICAL SYSTEMS.

Objectives:

- 1) To identify the local dimensions of each of these elements so that specific programs can be developed and implemented.
- 2) Develop and implement flood plain management and flood control programs that protect homes and property as well as stream side vegetation and control obstruction of natural floodways.

- 3) Develop integrated hillside development and conservation standards.
- 4) Prevent potential air and water pollution problems and abate existing air and water pollution problems.
- 5) Identify wildlife and biological inter-relationships.

Industrial Resource Conservation

Conservation and Planning Goal

IDENTIFY NEEDS AND INDUSTRIAL RESOURCES OF THE AREA AND PROVIDE FOR WISE USE AND MANAGEMENT OF THESE RESOURCES.

Objectives:

- 1) Identify the location and extent of the area's mineral resources.
- 2) Develop resource extraction standards.
- 3) Protect resource areas from incompatible uses.
- 4) Protect vegetation from excessive timber and firewood cutting.

Recreation Conservation

Conservation and Planning Goal

PROVIDE A FULL RANGE OF RECREATIONAL AREAS AND FACILITIES FOR THE RESIDENTS OF THE COUNTY.

Objectives:

- 1) Identify the recreation and open space needs and potentials of the area, including the relationship of County needs and potential to area-wide, regional and State facilities.
- 2) Prepare and program, including priorities, for the implementation of the Berryessa Plan for this element.

Aesthetic Conservation

Conservation and Planning Goal

PRESERVE THE NATURAL BEAUTY OF THE AREA INCLUDING ITS UNIQUE AND HISTORICAL FEATURES.

Objectives:

- 1) Identify and preserve the area's architectural and historical landmarks.
- 2) Develop programs for undergrounding utility lines.
- 3) Develop a program for highway beautification.
- 4) Develop comprehensive sign standards and regulations to fit the unique character and needs of the area.

Implementation Action Steps

The following action steps are proposed for immediate implementation. As such, they represent the Conservation, Development and Planning Commission's immediate conservation program for the area.

Ecological Conservation

A large number of local and area-wide agencies are currently implementing their own programs for one or more elements of a total conservation program. Each of these agencies should be identified as to their organization, area of responsibility and program coverage, program capabilities and authority and the relationship of their program to the area.

Key program and agencies should be singled out for special attention in terms of program coordination, cooperation and participation.

Industrial Resources Conservation

- 1) Reduce air, water and visual pollution from resource development through the establishment of comprehensive area-wide and County-wide standards and controls.
- 2) Provide resource areas with protection from incompatible uses.
- 3) Work closely with State Division of Forestry to protect the area's remaining woodlands from exploitation.
- 4) Develop a mineral resources development and conservation policy concerning deposits in Napa County and the area.

- 5) Establish an information center for both published and unpublished data.
- 6) Serve as a clearing house for technically trained persons, in the U. S. Geological Survey and other Federal Agencies, the State Division of Mines, universities and industry, to integrate their mineral development and conservation programs into the fabric of the County's Berryessa Plan.

Recreation Conservation

- 1) Conduct feasibility study of potential recreation uses of various waterways and reservoirs.
- 2) Augment site selection for roadside rest areas and scenic outlooks.
- 3) Prepare plans for future parks and playground sites in developing unincorporated urban areas.
- 4) Study impact of recreational use on both public and private land by hunting, riding or hiking clubs, and off-road vehicles.
- 5) Study the need for and formation of a County-Wide Park District program.

Aesthetic Conservation

- 1) Prepare development and operational standards and procedures designed to reduce blight or solid wastes, litter, auto wrecking, surface mining and signs.
- 2) Conduct an area-wide survey to identify important historical and architectural landmarks and develop a program to conserve these features.
- 3) Develop standards and procedures designed to reduce grading scars from construction of hillside road and building sites.
- 4) Consider standards for architectural review in selected areas such as small towns and recreational areas.
- 5) Conduct an inventory to identify both good and bad visual elements of the Area.

Implementation Studies

In the preparation of the Conservation Policy Element of the

Berryessa General Plan, the need for more detailed studies in the area of conservation was readily apparent. It is anticipated that these studies will be conducted within the policy framework established as part of this Plan. Individual studies will explore, in detail, the ecological, open space, flood plain and recreation elements. These studies will also deal with fiscal capabilities, alternate implementation programs and their consequences. The product of these studies will be a series of detailed reports that will serve as supplements to this Plan.

Open Space

Open space and conservation of open space are among the most vital elements in the primary goal of providing a desirable living environment for the residents of the area. The following two sections identify various types of open space and outline conservation programs.

Open space is generally defined as being all those lands, both private and public, that are undeveloped, or if developed retain a visual sense of openness. Open space has come to mean many things to many people. To some, open space implies thousands of acres of undeveloped land, while to others, a public park or a pathway between houses constitutes open space.

This Plan proposes an open space concept that includes multiple uses of land that retain an open visual character. Generally, the lands placed in the permanent open space category are not susceptible to intensive development.

Flood Plains

Planning Goals

- 1) PROTECT THE VEGETATION AND ANIMAL HABITATS OF THE WATERWAYS AND FLOOD PLAINS FROM ENCROACHMENT OF DEVELOPMENT.
- 2) PROTECT AREAS OF URBAN DEVELOPMENT FROM FLOODING.

Policy Guidelines

- 1) Investigate the feasibility of obtaining data to establish a floodway and a restrictive zone outside the floodway for all unincorporated areas subject to flooding, based on a 100 year storm. Identification of flood prone areas is the responsibility of the Napa County Flood Control and Water Conservation District.

- 2) Adopt flood plain zoning in all applicable areas, and investigate the compatibility of zoning areas adjacent to flood plains for recreational uses. Flood plains along streams which feed Lake Berryessa are, for the most part, zoned for agricultural uses.
- 3) Encourage provision for flood insurance. The Napa County Flood Control and Water Conservation District, by order of the Napa County Board of Supervisors, has applied to the Federal Government for eligibility of Napa County for flood insurance and agreed, in return, to enact local land use and control measures for areas having special flooding problems. The controls are to be adopted by December 31, 1971, and are to be consistent with Federal criteria.

Agriculture and Grazing

The potential agricultural use of the secondary valleys is currently limited by lack of available water, frost protection and large areas of prime soil. The first two problems could possibly be overcome by utilizing the 33,000 acre feet allotted Napa and Lake Counties by State Water Rights Board Decision 869. Reclaimed waste water for frost protection and irrigation may also become available in the future. Steps can be taken for agricultural land use to conserve the limited prime soils.

Planning Goal

MAINTAIN AND ENHANCE THE AGRICULTURAL ENVIRONMENT
OF THE BERRYESSA REGION.

Policy Guidelines

- 1) Guide growth to minimize the urban development of prime soils and to reduce potential conflicts with the agricultural economy.
- 2) Encourage inexpensive water supply and frost protection to enhance agriculture.
- 3) Preserve, wherever possible, agricultural and grazing lands for continued open space land use.
- 4) Initiate land and water reclamation projects to increase, enhance and protect agricultural lands and their production capabilities and protect the Lake from pollution caused by irrigation return flows and animal wastes.

GENERALIZED GEOLOGY



- 5) Encourage the continued use of farm lands for agricultural production through use of the Williamson Land Conservation Act and exclusive permanent agricultural zoning and planting of high value crops such as vineyards.
- 6) Encourage alternate uses, such as wildlife and recreation when grazing is phased out.
- 7) Encourage pesticide monitoring programs on all phases of the environment and extension of programs in air and wildlife.
- 8) Minimize pesticide use and encourage use and research on biological and cultural methods of pest control.

Other Open Space Uses

This section describes other types of land covered by definition of open space used in the Plan. In addition to agriculture and flood plains there are public domain lands, mineral and natural resources, geological hazard areas and hillside areas. Additional goals, objectives and implementation action steps for open space are found in the Conservation Section of this report.

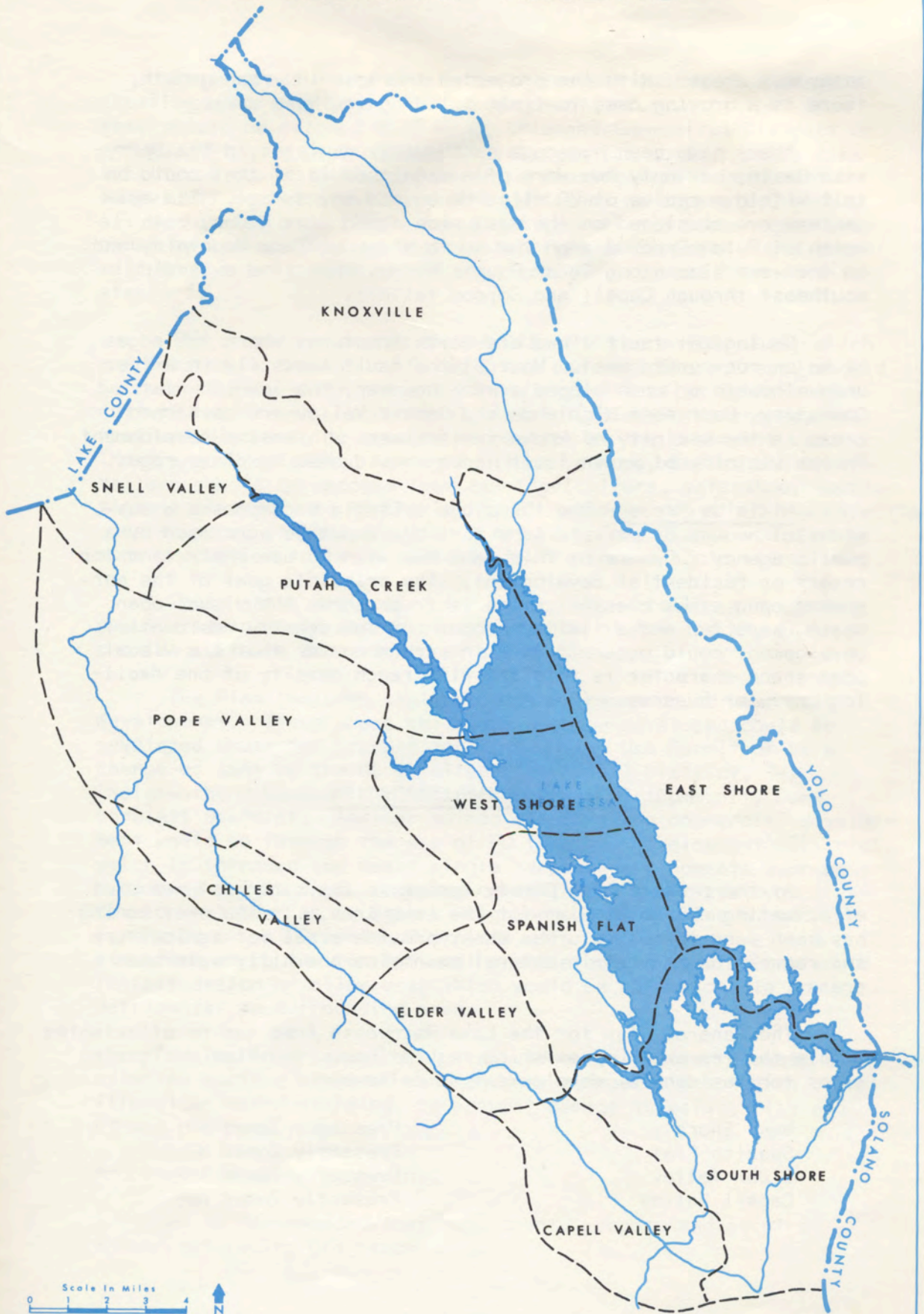
Public Owned Lands - Approximately 40,000 acres are owned by the United States Bureau of Land Management (See Map IV). Efforts should be made to retain this land in public ownership, to provide access easements to public domain lands surrounded by private property, to maintain it's open visual character, to protect it's mineral resources from incompatible nearby uses, to regulate off-road vehicle use and to improve it's biological and wildlife systems.

Mineral and Natural Resources - Mineral and natural resources include: Mercury, asbestos, chromite, manganese, sand and gravel, and timber (See Map VII).

Geological Hazard Areas - Landslide prone areas are usually located in Class VII soils and consist of an inter-mixture of unstable serpentine and jura-cretaceous rocks of the Franciscan group. These areas in the Berryessa Basin are concentrated west of the Lake along the Cedar Roughs Ridge and to the north between Pope and Snell Valleys. There are a few areas scattered in the Knoxville area also (See Map VII).

Since 1960, urban growth has increased and the development of Spanish Flat and Berryessa Estates have encroached into these

PLANNING AREAS



GENERAL PLAN SUMMARY OF PLANNING POLICIES AND RECOMMENDATIONS

PLANNING AREA	ECOLOGICAL POLICY	ECONOMIC POLICY	RECREATION POLICY	AMENITY POLICY
1. EAST SHORE	Retain agricultural uses & protect watersheds through zoning regulations & Ag.Preserve contracts. Reduce erosion.	Encourage grazing and agriculture by locating prime soils.	Encourage access to Lake for bank fishing during high water periods.	Protect visual relationship of Lake to ridge by controlling height of structures between road and Lake.
2. KNOXVILLE	Protect watersheds through zoning regulations & Ag. Preserve contracts. Investigate silting condition in Eticura Creek.	Encourage grazing & agriculture by locating prime soils. Permit limited mining.	Encourage trails. Investigate off-road vehicle environmental impact.	Protect scenic canyon views through zoning and open space policies.
3. WEST SHORE	Investigate need for additional fire control. Protect watersheds through zoning regulations and sewerage systems.	Encourage limited residential development to support takelime concessions.	Investigate public access from Lake to Cedar Roughs BLM Land.	Maximize natural appearance by prohibiting overhead powerlines to recreation areas and islands.
4. SNELL VALLEY	Retain agriculture uses & protect watersheds through zoning.	Encourage grazing & planning for future ranches.	Encourage dude ranches and horse trails.	Protect vista corridor to Snell Peak through zoning and open space policies.
5. PUTAH CREEK	Protect watersheds, agriculture uses & wildlife area through zoning and boat speed limits.	Protect existing residential development through zoning. Adopt houseboat regulations.	Encourage public access to creek for fishing & public access to BLM Land.	Protect watershed setting by zoning regulations and open space policies.
6. SPANISH FLAT	Protect watersheds through zoning. Retain natural slide areas through open space policies.	Provide for limited residential development to support neighborhood shopping and office uses.	Encourage neighborhood parks in conjunction with residential development.	Protect watershed setting through zoning regulations and open space policies.

GENERAL PLAN SUMMARY OF PLANNING POLICIES AND RECOMMENDATIONS - Continued

PLANNING AREA	ECOLOGICAL POLICY	ECONOMIC POLICY	RECREATION POLICY	AMENITY POLICY
7. SODA & ELDER VALLEYS	Control grading through zoning & engineering regulations.	Encourage planning for limited residential development or dude ranches.	Investigate public access to BLM Lands.	Protect watershed setting by zoning regulations and open space policies.
8. POPE VALLEY	Encourage air pollution control and soil erosion control.	Encourage grazing and agriculture on prime soils. Protect existing uses through zoning regulations.	Protect existing golf course, resorts, hunting clubs through zoning. Encourage bridle and hiking trails.	Protect natural setting by design control of proposed P. G. & E. transmission lines.
9. CAPELL VALLEY	Retain agriculture uses, protect watersheds through zoning regulations and open space policies.	Encourage agriculture uses by recycling waste water. Encourage limited residential development and community shopping center.	Encourage neighborhood park in conjunction with residential development. Encourage hiking and bike riding.	Protect natural settings by limiting or prohibiting strip commercial through zoning regulations.
10. SOUTH SHORE	Protect watersheds by grading, zoning and engineering regulations.	Encourage limited residential development with sewerage systems.	Investigate public access to Lake for fishing.	Protect natural settings through zoning regulations.

EXPLANATION OF PLANNING AREA POLICIES

- 1) ECOLOGICAL POLICY - How can clean water and air, healthy vegetation and needed wildlife be provided?
- 2) ECONOMIC POLICY - How can good soils for agriculture, minerals for extraction and sources of employment be provided?
- 3) RECREATION POLICY - Where and how can given resources meet the growing need for a variety of recreation needs?
- 4) AMENITY POLICY - How can landscape be developed and designed to enhance the liveability of the area?