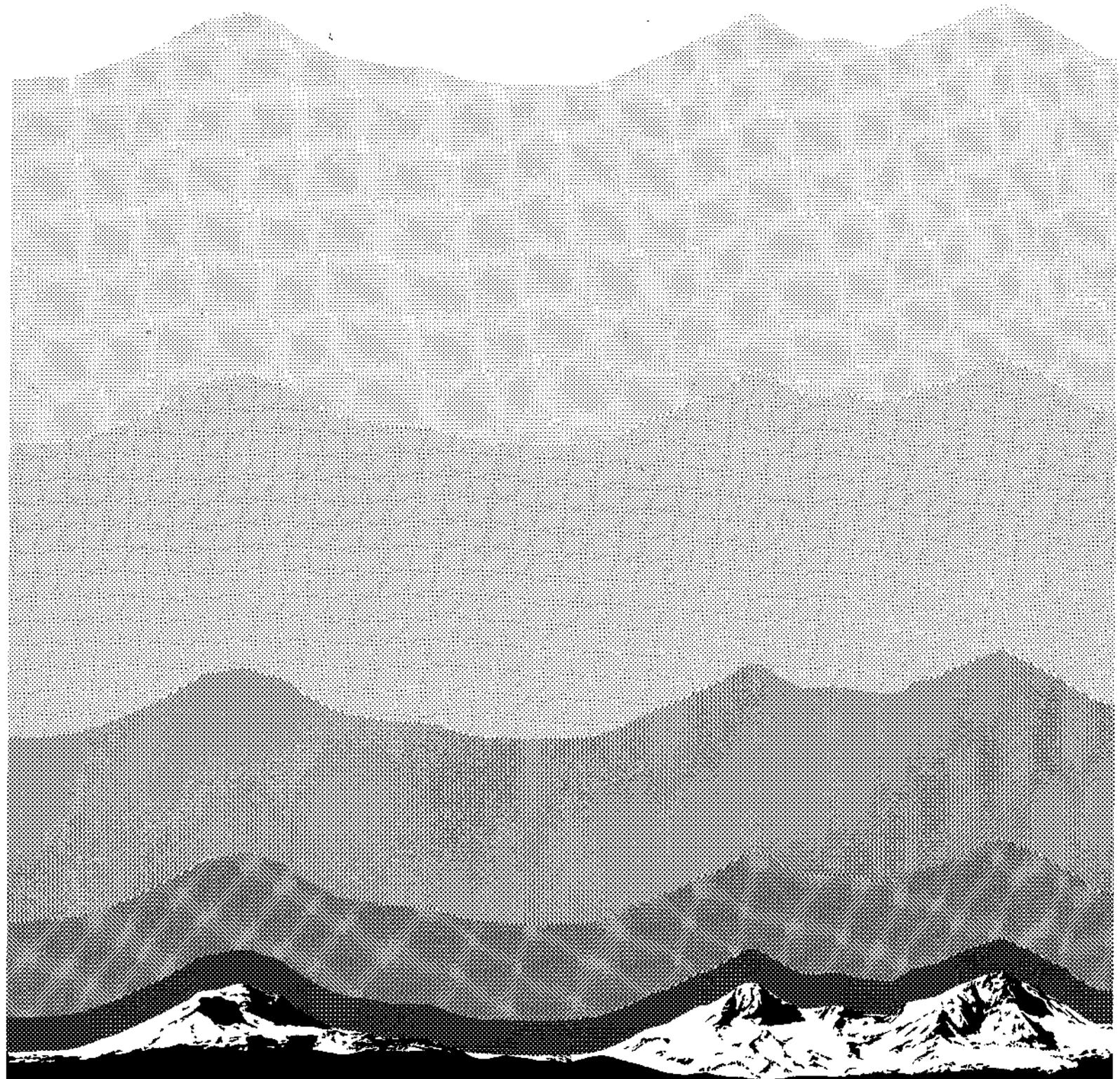


Kate's Copy

SUMMARY PLAN

JULY 1986



DESCHUTES COUNTY STATE PARKS

MASTER PLAN



Department of Transportation
PARKS AND RECREATION DIVISION

525 TRADE STREET SE, SALEM, OREGON 97310

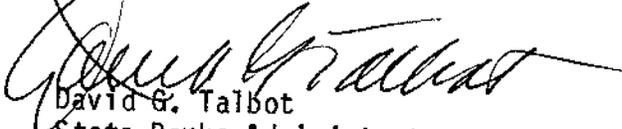
March 18, 1987

This document is a summary of the Master Plan prepared for LaPine State Recreation Area, and Tumalo, Pilot Butte and Cline Falls State Parks in Deschutes County.

The summary has been presented to the public, approved by the Parks Advisory Committee and adopted by the Transportation Commission as an administrative rule.

Additional copies of the plan and detailed information on the planning process, park management and specific development projects for each park are available from the Parks offices in Salem or Bend.

Very truly yours,


David G. Talbot
State Parks Administrator

DGT:NG:kc
3013D

SUMMARY PLAN

This document is a summary of the Master Plan proposals for the following state parks in Deschutes County:

LaPine State Recreation Area
Tumalo State Park
Pilot Butte State Park
Cline Falls State Park

CONTENTS

This document contains general descriptions of how the land use and development plans are developed, a summary of land use and development plans for each park, and a narrative of the important natural and cultural resources found in Central Oregon.

ADDITIONAL INFORMATION

Additional information about these parks can be found in the Master Plan notebooks. These notebooks contain detailed information on the land use and development plans as well as data on the natural and cultural resources of each park. These notebooks are available for public review at the State Parks Office in Salem or at the Region Office in Bend.

PUBLIC REVIEW AND PLAN ADOPTION

This plan has been presented to the public, reviewed by interested agencies and approved by State Parks managers and administrators.

The plan has been approved by the Parks Advisory Committee and adopted by administrative rule by the Transportation Commission on May 20, 1986.

JEFFERSON CO.
DESCHUTES CO.

20

97

Terrebonne

SISTERS

126

CLINE FALLS
STATE PARK

REDMOND

Southern Cr.

Deschutes River

X North Sister

X Middle Sister

X South Sister

TUMALO
STATE PARK

Tumalo Cr.

PILOT BUTTE
STATE PARK

BEND

DESCHUTES CO.
CROOK CO.

X Bachelor
Butte

Deschutes River

20

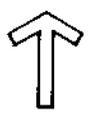
97

Sunriver

VICINITY MAP

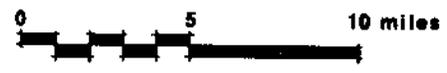
LAPINE STATE
RECREATION AREA

Fall R.



NORTH

scale



Little Deschutes River

La Pine

DESCHUTES CO.
KLAMATH CO.

LAND USE PLANS

The Land Use Plan forms the basis of park development and management. The plans identify both the quality and distribution of the parks natural resources and development potentials.

The plan is derived from natural and cultural resource information. Geologic features and hazards, soil types, land forms, water features, vegetation, wildlife habitat, scenic resources and relevant historic and cultural information are all mapped as transparent overlays. The various types of information are then assessed for their value within the park and a decision is made about the appropriate land use classification for the resource. A composite map is then made which shows all the areas to be protected and those areas where development can safely occur. From this the Land Use Plan is made.

There are four land use designations used in the land use plan:

Primary Protection Areas (PPA) are the most use-restrictive designation and are used to protect essential park attractions or to prohibit development in potentially dangerous areas.

Secondary Protection Areas (SPA) indicate common natural resource and recreational values. SPAs provide further protection and buffering for PPAs and also serve to reserve land for future use flexibility if unforeseen needs for development arise.

Limited Development Areas (LDA) indicate areas where natural systems can accommodate certain types of development but where intensive types of use would require special precautions or extra expense. Natural resource and recreational values are generally not exceptional in these areas.

Major Development Areas (MDA) define those sections of the park which are both suitable and needed for future intensive development.

The land use designations also define what types of activities and uses are allowed within each land use category:

PPAs limit activities only to those with minimal impact on resources.

SPAs allow for resource management activities and low impact recreational uses similar to those allowed in PPA's.

LDAs provide for limited recreational and development uses with low impacts and moderate construction needs.

MDA designations allow for intensive uses such as campgrounds, parking, paved access roads and other high impact recreational activities.

Through the Land Use Plan, park development and use are guided to protect each park's most valuable scenic and natural assets and provide recreational opportunities appropriate to each park's resources.

Areas of Concern (AOC) are areas which are outside of the park boundaries but which may have an impact on park development or protection. These areas are also shown on the Land Use Plan.

DEVELOPMENT PLANS

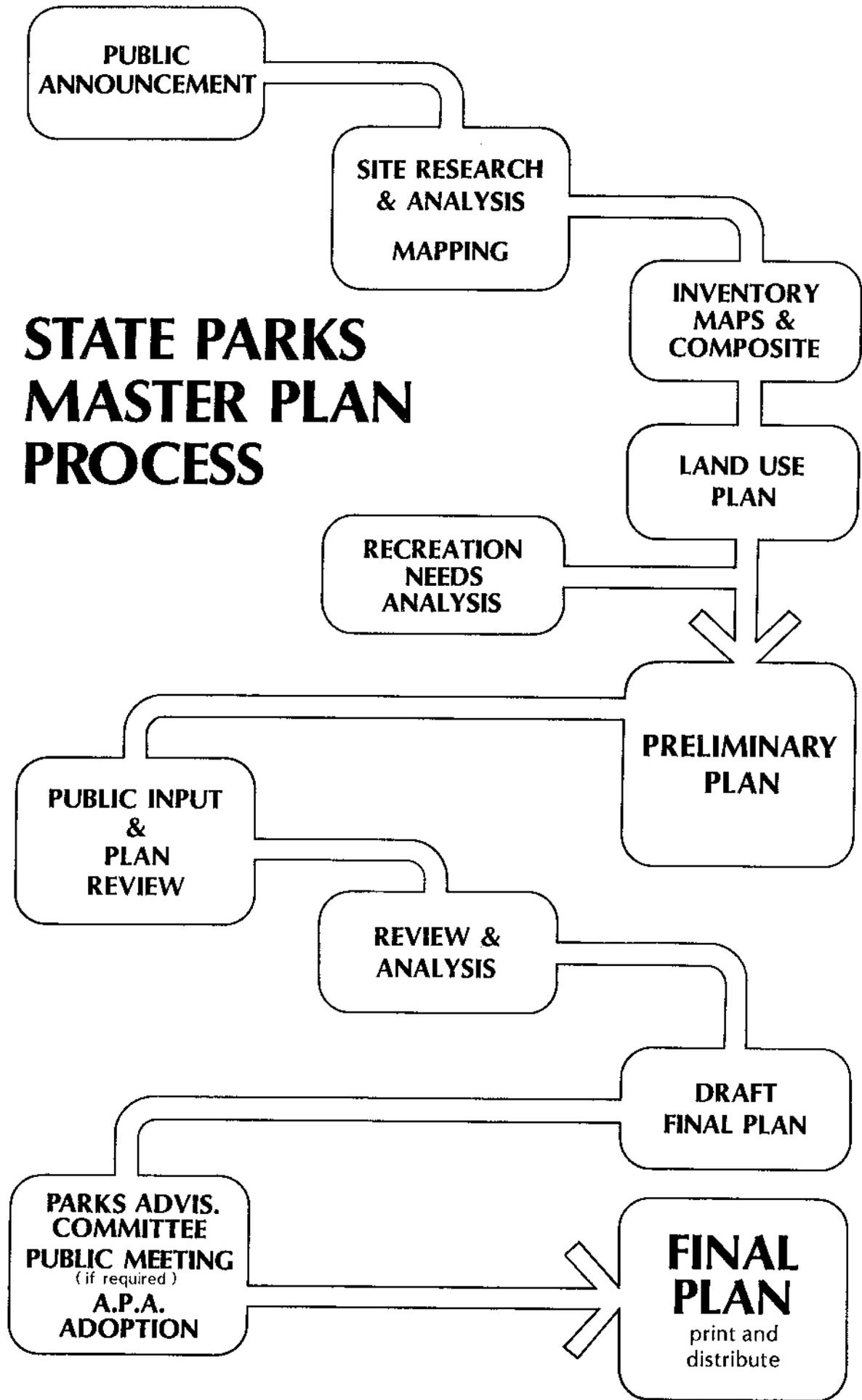
The Development Plan guides the future development of facilities and improvements in a state park. The size of the park, its role in state and local recreational needs and its resources form the basis of the Development Plan.

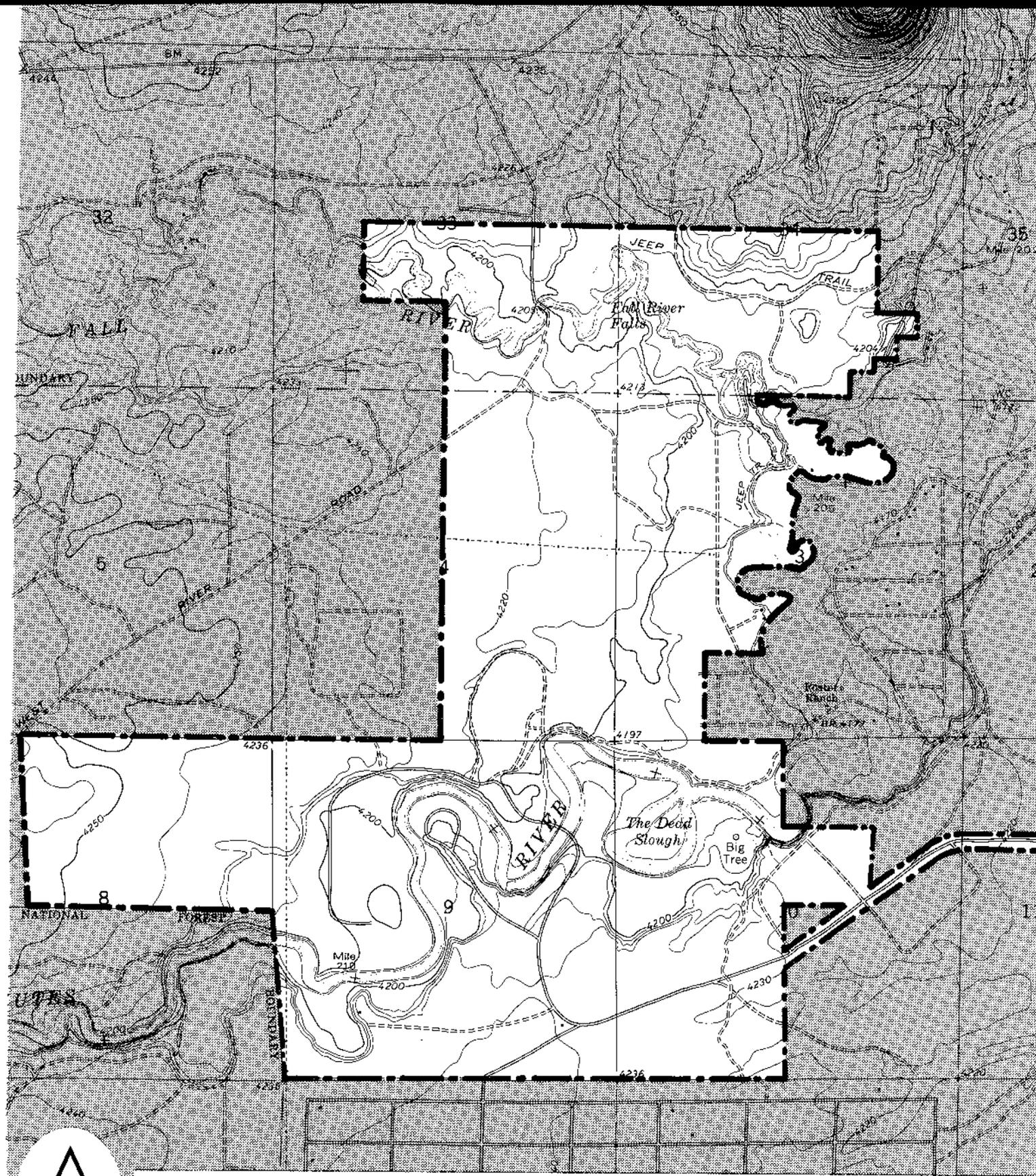
The Development Plan works with the Land Use Plan to provide specific information on resources, recreational opportunities and future land use to guide the management and the future development of each state park.

Research, statistical data on park use, interviews with parks personnel and local recreation specialists, and user surveys indicate what facilities might be most appropriate for each park.

Based on the recreation capability and needs of the park, recreation and management development goals and objectives are set and the Development Plan is formulated.

STATE PARKS MASTER PLAN PROCESS





LAPINE STATE RECREATION AREA

TOWNSHIP	20 S.	RANGE	10 E.	SECTION	33,34
	21 S.		10 E.		3,4,8,9,10,11,12
	21 S.		11 E.		7

LAPINE STATE RECREATION AREA (S. R. A.)

Location: LaPine SRA is 22 miles south of Bend and 4 miles west of U.S. 97 via a state park road, in Deschutes County.

Acreage: 2,333.12 acres.

Description: LaPine SRA is mostly on the left bank of the Deschutes River as it meanders through a flat area covered with lodgepole and ponderosa pines. The state's largest ponderosa pine is located here, as are excellent examples of riparian habitat. LaPine SRA is located in a well-known deer migration corridor between summer and winter ranges for the region's mule deer population.

Day-Use Facilities and Attendance: 34 picnic sites, fireplaces, toilet facilities, water, parking, swimming area.
15,900 day-visitors FY 83-84

Campground Facilities and Attendance: 95 trailer sites, 50 improved sites, dump station.
22,399 camper nights FY 83-84

LAND USE PLAN SUMMARY

LAPINE SRA

Total Park Acreage

2333.12 ac.

Primary Protection Areas (PPA)

472.79 ac. 20%

The two PPAs at LaPine preserve the unique vegetation and wildlife habitats along the Deschutes and Fall Rivers. Water quality and scenic resources are protected by restricting development in these areas. Hiking, rafting, nature study and fly fishing are allowed recreational uses. Some foot trails will be built.

Secondary Protection Areas (SPA)

1239.50 ac. 53%

These areas buffer and reinforce the PPAs and accommodate the deer migration corridor which traverses the park. Foot and horse trails will be built in these areas. Several bark beetle control test plots are maintained here by the Oregon Department of Forestry.

Limited Development Areas (LDA)

75.08 ac. 03%

These areas will accommodate small, low impact developments such as a hand boat launching area, unpaved parking facilities and a primitive boat-in camp.

Major Development Areas (MDA)

545.67 ac. 24%

The MDA encompasses the existing major recreation facilities and areas where resources can tolerate further development. Future improvements here include a group-camping facility and horse camp. This area is also the site of a major bark beetle control project and visual-quality improvements.

Areas of Concern (AOC)

Privately-owned lands near the SPA need to be monitored for impacts from conflicting development.

LAPINE STATE RECREATION AREA DEVELOPMENT PLAN
GOALS AND OBJECTIVES

GOAL 1: INCREASE USE OF EXISTING CAMPING AND DAY USE FACILITIES.

OBJECTIVES:

- A. Provide more explicit road signs on Highway 97 indicating the recreational opportunities of the SRA.
- B. Change designation from State Recreation Area to State Park.
- C. Provide needed improvements in the camping area; Deschutes River, Fall River and Big Tree Day-Use Areas.

GOAL 2: PROVIDE MORE DIVERSE RECREATIONAL FACILITIES AND OPPORTUNITIES

OBJECTIVES:

- A. Provide a safe, enjoyable camping area appropriate for use by large groups.
- B. Provide a primitive camp site which will be convenient for and encourage use by river floaters.
- C. Provide a safe float-boat launch and landing area for park users at a site with convenient access and minimal impact on natural resources.
- D. Provide facilities which will encourage use of the SRA by equestrians.
- E. Develop a hiking trail system which will provide hikers access to the interesting and diverse recreational resources of the SRA.
- F. To provide the opportunity for visitors to educate themselves about the unique environment of the Deschutes River, the lodgepole pine forests and other interesting features.

GOAL 3: IMPROVE CIRCULATION SYSTEMS IN THE PARK AND IN THE LOCAL AREA AFFECTED BY THE STATE RECREATION AREA.

OBJECTIVES :

- A. Provide an access road through the SRA to the subdivision development abutting the park and transfer maintenance responsibility to Deschutes County.
- B. Realign the emergency exit in the SRA to provide more direct exit and sign the emergency exit clearly with permanent signs compatible with park aesthetics.

GOAL 4: PROTECT, MAINTAIN AND ENHANCE CURRENT RECREATIONAL ATTRACTIONS OF THE STATE RECREATION AREA.

OBJECTIVES :

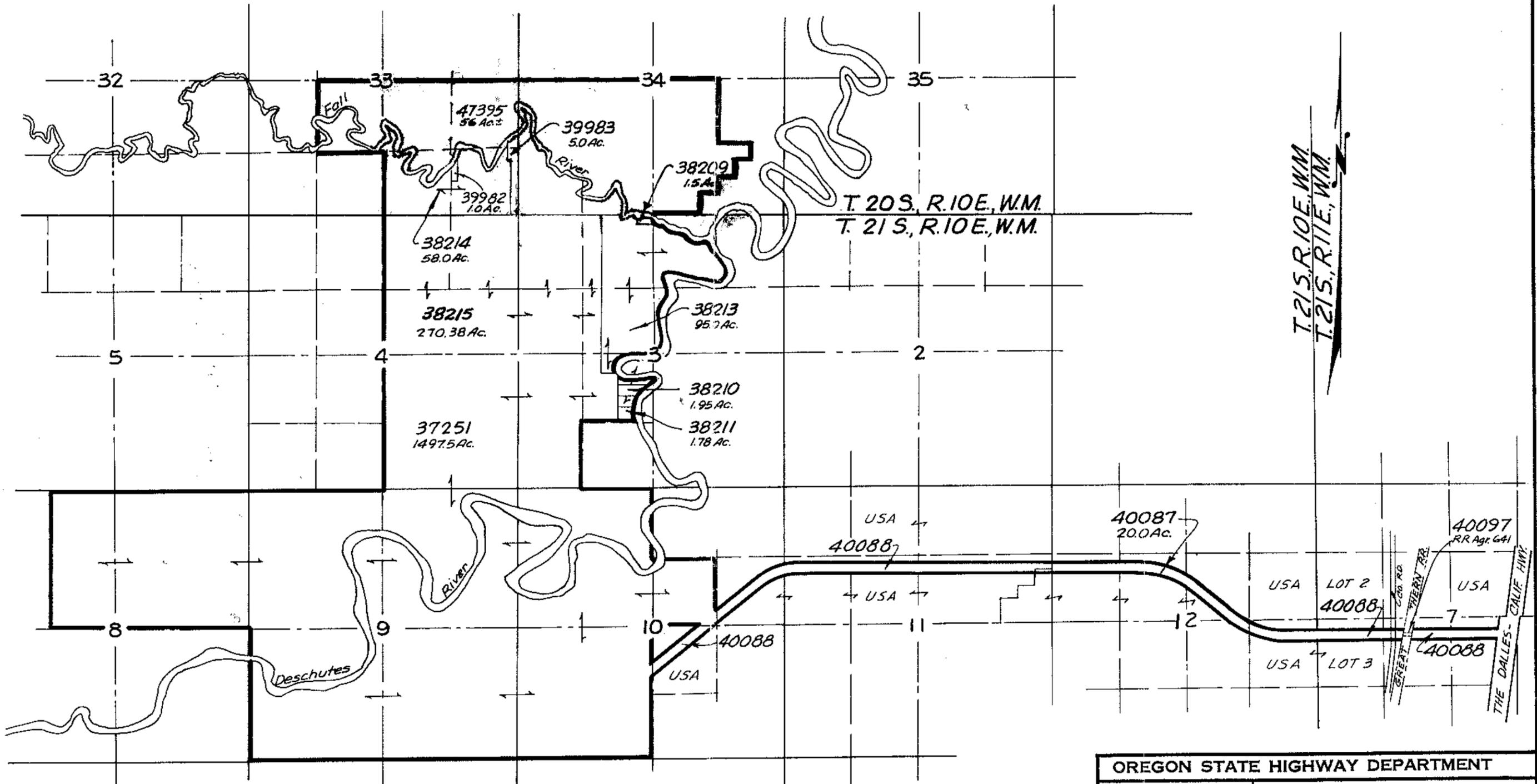
- A. Develop traditional and creative manpower resources which will provide the means to maintain the State Recreation Area.
 - 1. Research and develop proposals for acquiring additional employees to help maintain the State Recreation Area.
 - 2. Provide work-camp for seasonal, special program employes. The work camp will not be used to house juvenile or adult correctional employees or probationary or pre-sentence employes. Specific conditions for camp development and operation will be proposed when a definite facility is planned and a Deschutes County conditional use permit is applied for.
- B. Design developments within the SRA for the least impact on natural resource systems and scenic values.

- C. Prohibit development which will contribute significantly to noise or visual pollution.
- D. Develop a forest management plan to improve the condition of existing vegetative resources and to increase wildlife and scenic values.

GOAL 5: TO MAKE A MORE LOGICAL PARK BOUNDARY

OBJECTIVES:

- A. Acquire BLM property at Big Tree access road to improve the SRA boundary.
- B. Return property in Section 8, T21S, R10E to BLM.



OREGON STATE HIGHWAY DEPARTMENT	
BOUNDARY	
For	LAPINE STATE RECREATION AREA
Highway	THE DALLES-CALIFORNIA
County	DESCHUTES
Scale 1" = 2000'	Date 8-19-68 z.

DEVELOPMENT PLAN

FALL RIVER DAY USE AREA - Improved



BOAT-IN PRIMITIVE - Proposed



INTERPRETATION AREA - Proposed



DON MCGREGOR SCENIC VIEWPOINT - Existing



EQUESTRIAN DAY USE - Proposed



OVERNIGHT CAMP - Existing



GROUP OVERNIGHT CAMP - Proposed



RETURN TO BLM

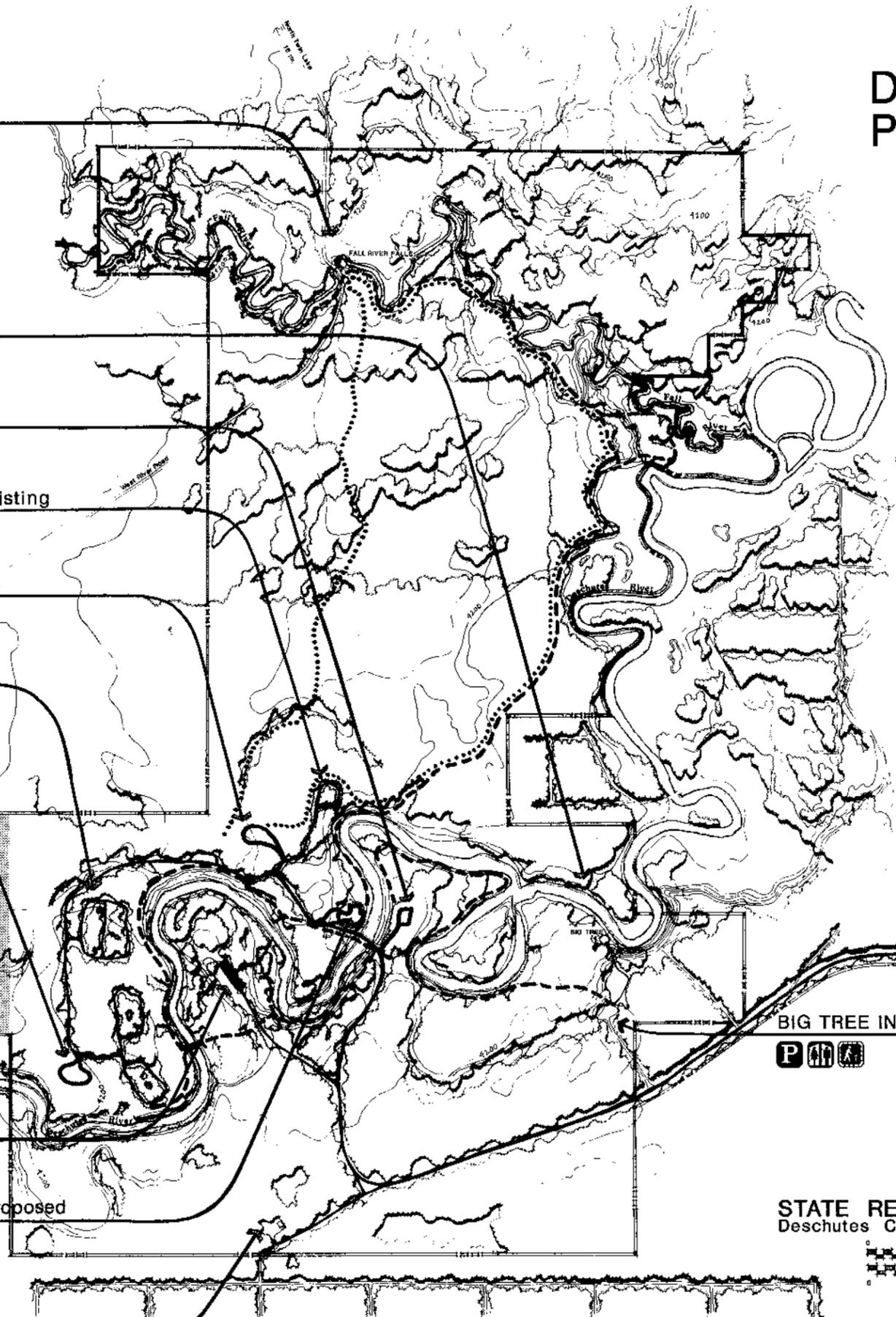
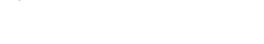
DAY USE PICNIC AREA - Existing



DESCHUTES BRIDGE DAY USE AREA - Proposed



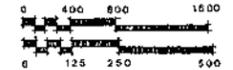
MAINTENANCE YARD - Existing

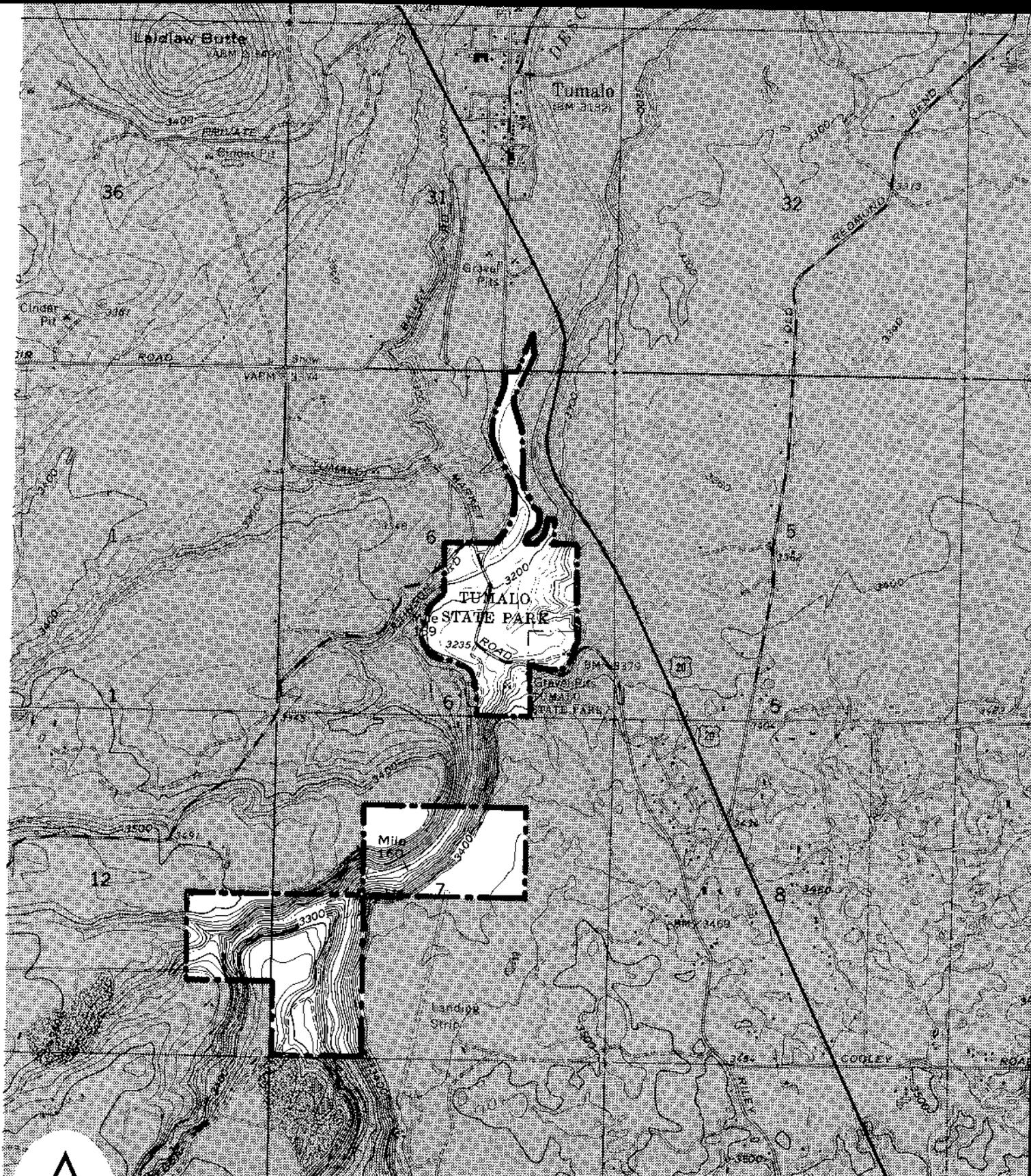


BIG TREE INTERPRETIVE AREA - Existing



LAPINE
STATE RECREATION AREA
Deschutes County 1984





TUMALO STATE PARK

TOWNSHIP 17 S. RANGE 12 E. SECTION 6

TUMALO STATE PARK

Location: Off U.S. Highway 20, on both sides of the Deschutes River, about five miles northwest of Bend and one mile south of Tumalo, in Deschutes County, Oregon.

Acreage: 320.14 acres in two separate parcels. The first acquisition for this park was a gift from Deschutes County of 115 acres in 1954.

Description: The park was dedicated to preserve the scenic beauty of the Deschutes River, and to provide camping and picnic facilities.

Day-Use Facilities and Attendance: 83 picnic sites, Toilet Building
Parking areas, Swimming area
102,608 day-users FY 83-84

Campground Facilities and Attendance: 20 trailer sites, 68 tent sites
Group camping for 50 people
25,828 camper nights FY 83-84
1,076 group campers FY 83-84

LAND USE PLAN SUMMARY

TUMALO STATE PARK

Total Park Acreage 320.14 ac.

Primary Protection Areas (PPA) 144.80 ac. 45%

Three areas in Tumalo State Park are designated as PPAs. They are the banks of the Deschutes River, the rimrocks above the developed areas of the park and a remote portion of the Deschutes River Canyon. Hiking, nature study, fishing and swimming are the principle recreation activities in these areas.

Secondary Protection Areas (SPA) 139.51 ac. 44%

These areas are buffers around the more pristine PPAs. Activities are similar and the only developments planned are trail construction interpretive sign installation.

Limited Development Areas (LDA) - ac. 0%

No LDA's are designated in the park.

Major Development Areas (MDA) 35.83 ac. 11%

MDA's include all existing facilities as well as future developments such as a hiker-biker camp and realignment of the existing day-use area parking.

Areas of Concern (AOC)

Development of areas outside the park which could adversely affect the park include developments at the edge of the rimrock and possible surface mining near park boundaries.

TUMALO STATE PARK DEVELOPMENT PLAN

GOALS AND OBJECTIVES

GOAL 1: MAINTAIN OR INCREASE CURRENT LEVELS OF PARK USE
IN AN ENJOYABLE AND SAFE ENVIRONMENT.

OBJECTIVES :

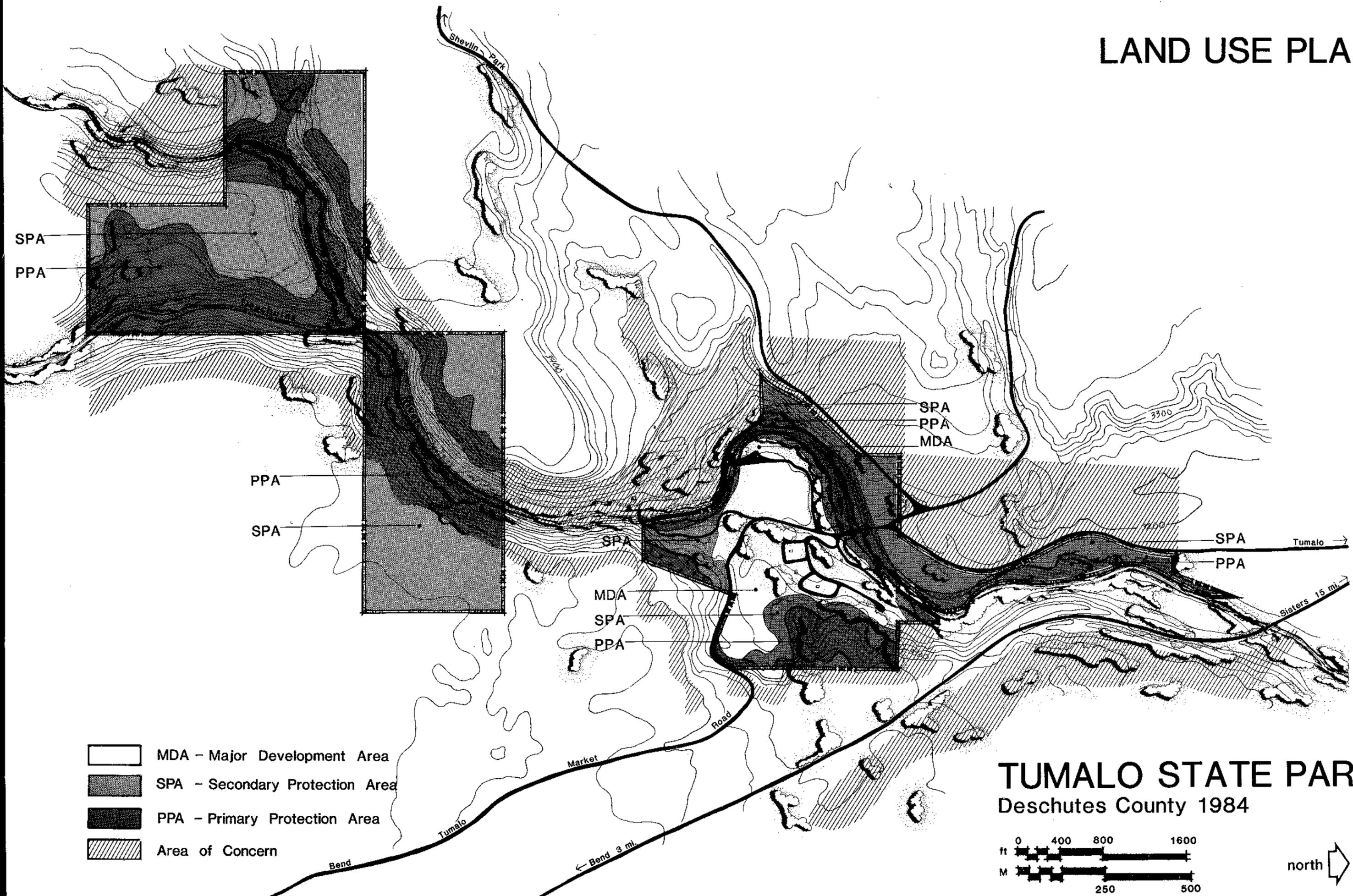
- A. Make improvements to existing facilities as needed to accommodate existing and projected use levels.
- B. Acquire property which would allow expansion of the existing day-use area if and when demand becomes apparent.
- C. Provide additional facilities as needs become apparent.
 - 1. Hiker Biker Camp
 - 2. Interpretive Trail
 - 3. Deschutes Tumalo Trail

GOAL 2: IMPROVE OR ENHANCE SCENIC CHARACTER OF THE
PARK.

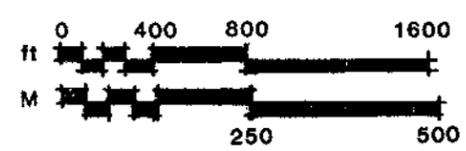
OBJECTIVES :

- A. Screen the park barrow pit from the rest of the park.
- B. Provide tree plantings in camp areas where shade is inadequate or screening might be needed.

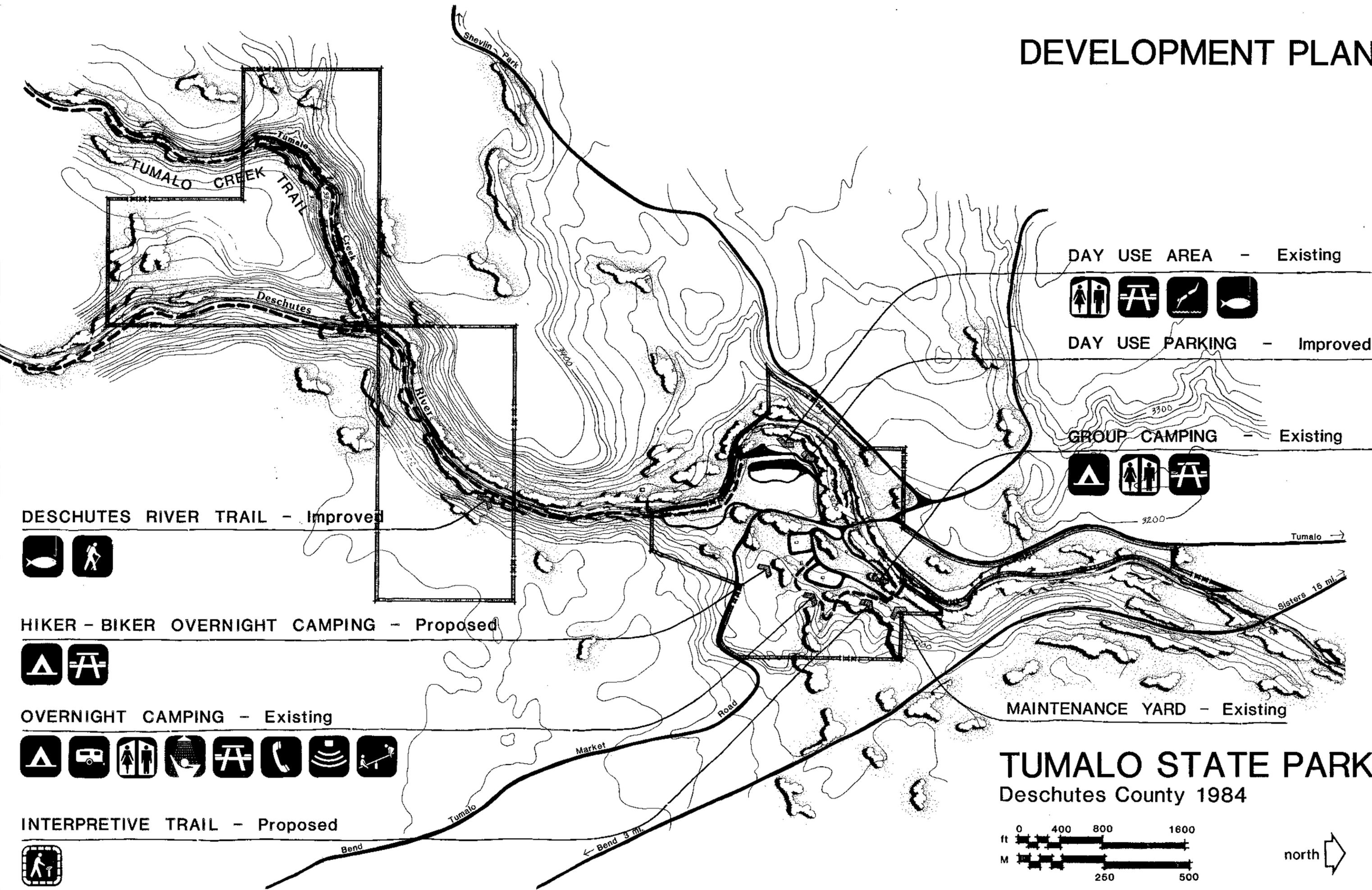
LAND USE PLAN



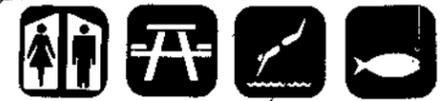
TUMALO STATE PARK Deschutes County 1984



DEVELOPMENT PLAN



DAY USE AREA - Existing



DAY USE PARKING - Improved

GROUP CAMPING - Existing



DESCHUTES RIVER TRAIL - Improved



HIKER - BIKER OVERNIGHT CAMPING - Proposed



OVERNIGHT CAMPING - Existing

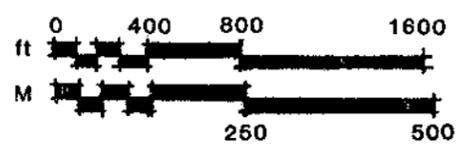


INTERPRETIVE TRAIL - Proposed



TUMALO STATE PARK

Deschutes County 1984



P I L O T B U T T E S T A T E P A R K

- Location:** Pilot Butte is on U.S. Highway 20 at the east city limit of Bend in Deschutes County, Oregon.
- Acreage:** 100.74 acres.
- Description:** This prominent cinder cone is a well-known landmark in central Oregon, rising about 400 feet above the surrounding desert to an elevation of 4,138 feet. Early Oregon explorers and travelers named Pilot Butte, and used the landmark to guide them from the plains of central Oregon to a safe ford of the Deschutes River.
- The summit of Pilot Butte offers a broad panorama of the surrounding desert plateau and cascade mountains.
- The first acquisition for this park was a gift of 100 acres in 1927.
- Day-Use Facilities and Attendance:** The only development at Pilot Butte is the access road which spirals its way to a parking area with a viewpoint and historic marker at the Butte's summit.
- 131,278 day-use visitors FY 83-84
- Campground Facilities and Attendance:** None

LAND USE PLAN SUMMARY

PILOT BUTTE STATE PARK

Total Park Acreage

100.74 ac.

Primary Protection Areas (PPA)

67.01 ac. 67%

Most of Pilot Butte is designated as PPA. This includes all of the butte except for the developed area at the top and the SPA buffers. Due to the fragile nature of the soils and vegetation at the butte, no development or access is allowed on the slopes of the butte.

Secondary Protection Areas (SPA)

32.60 ac. 32%

SPA's are provided as buffers at both the top and the base of the butte. Picnic facilities are the only planned developments.

Limited Development Areas (LDA)

- ac. 0%

There are no Limited Development Areas in the park.

Major Development Areas (MDA)

1.13 ac. 01%

The MDA is restricted to the existing development at the top of the butte. No expansion of these facilities is planned.

Areas of Concern (AOC)

Due to the location of Pilot Butte in the City of Bend there are many areas of concern. The adjacent school and residential development on the north and east pose problems of trespass on the fragile soils of the butte.

Another AOC is the highway right-of-way west of the park. Future highway widening, scheduled to occur in 10-20 years, will require substantial alterations to the grade.

PILOT BUTTE STATE PARK DEVELOPMENT PLAN
GOALS AND OBJECTIVES

GOAL 1: MAINTAIN THE PARK AS A LOCAL AND HISTORIC
LANDMARK

OBJECTIVES:

- A. Repair and improve the condition of the existing park development.
 - 1. Resurface access roadway and repair potholes.
 - 2. Improve road cut stability with retaining walls or vegetation.
 - 3. Repair road surface and rockwalls in the viewpoint/turnaround area.
 - 4. Install plantings and ground cover to improve aesthetic appeal of the viewpoint area and to help decrease maintenance needs.
- B. Repair and improve the condition of the Butte as a natural feature.
 - 1. Restrict access to the areas of the Butte most subject to erosion (particularly access from Pilot Butte Junior High School and Juniper Elementary School).
 - 2. Rehabilitate the cinder pit and ski jump scars on the sides of the Butte using vegetation or other reclamation methods.

GOAL 2: ENHANCE EXISTING SCENIC AND RECREATIONAL OPPORTUNITIES

OBJECTIVES:

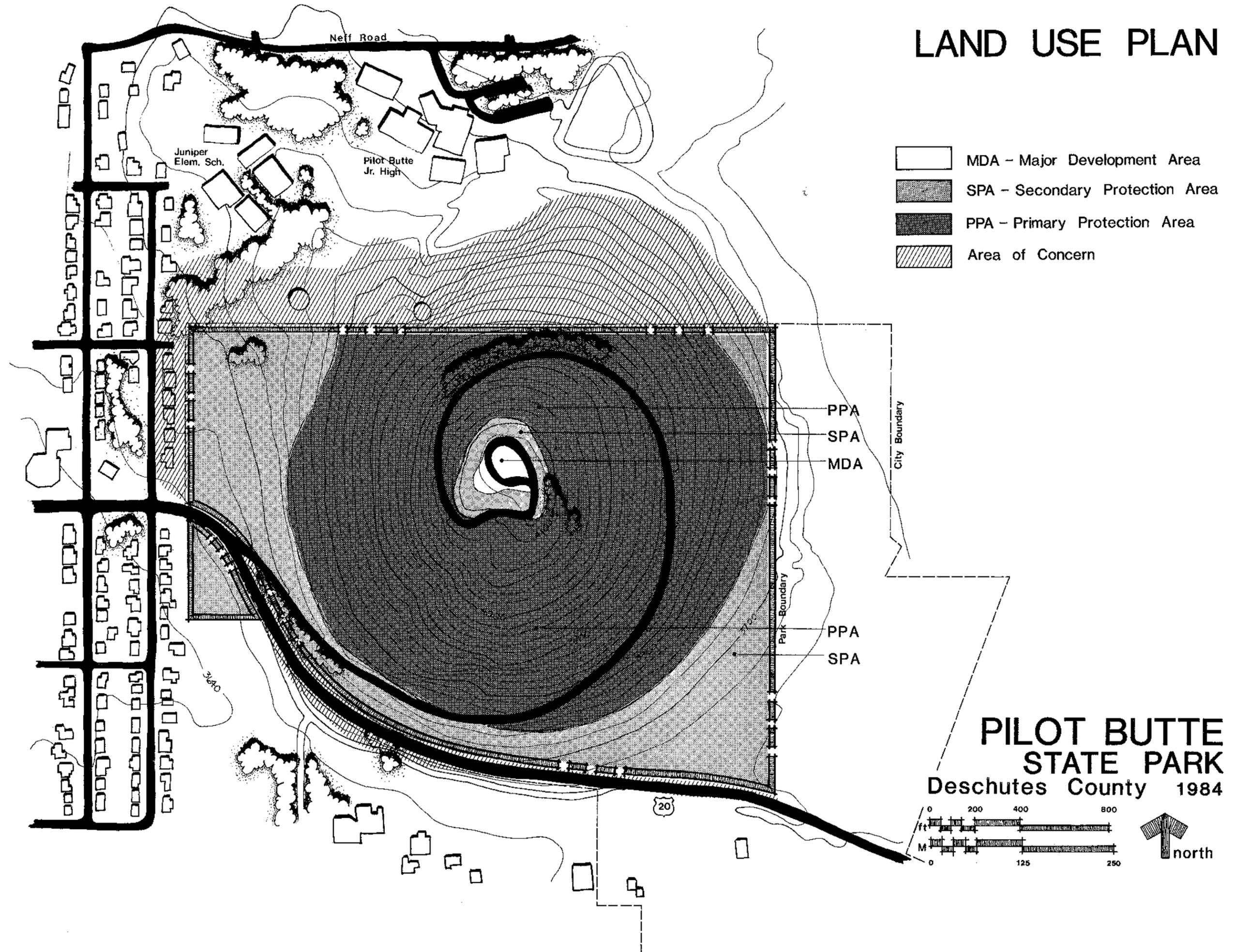
- A. Provide more interpretive information in permanent, vandal-resistant structures at the viewpoint area.
- B. Provide a picnic table for viewpoint users.

GOAL 3: TRANSFER PARK MANAGEMENT TO A MORE APPROPRIATE JURISDICTION

OBJECTIVES:

- A. Maintain the park at current levels until a mutually acceptable agreement can be negotiated for transfer of the park to an appropriate public agency.
- B. Cooperate and participate with the Bend Metro Parks and Recreation District in developing their park system as is appropriate.

LAND USE PLAN



DEVELOPMENT PLAN

VIEWPOINT DAY USE AREA - Existing

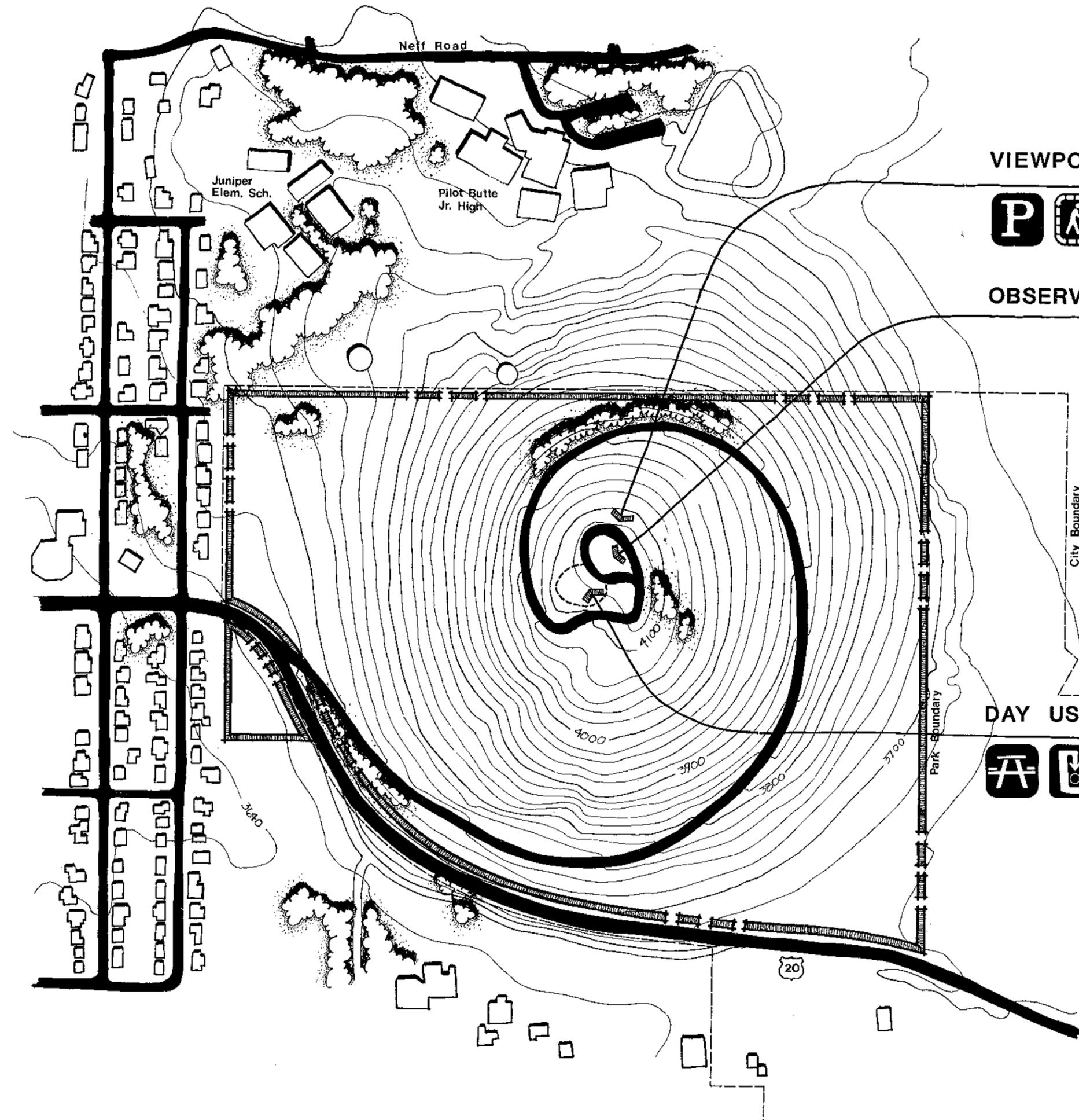
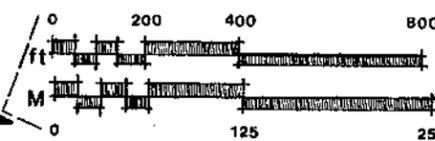


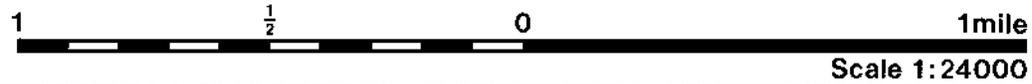
OBSERVATION STRUCTURE - Proposed

DAY USE PICNIC AREA - Proposed



PILOT BUTTE
STATE PARK
Deschutes County 1984





CLINE FALLS STATE PARK

TOWNSHIP 15 S. RANGE 12 E. SECTION 14

CLINE FALLS STATE PARK

Location: Four miles west of Redmond on U.S. 126, on the right bank of the Deschutes River, in Deschutes County, Oregon.

Acreage: 9.04 acres.

Description: The first park property was transferred from the Highway Department to the Parks Division in 1956. It is named after a nearby waterfall.

The main use at this park is for day-visitor picnicking and river wading.

Day-Use Facilities and Attendance: 38 picnic sites, Toilet facilities, Entry road and parking, and River access

40,290 day-use visits FY 83-84

Campground Facilities and Attendance: None

LAND USE PLAN SUMMARY

CLINE FALLS

Total Park Acreage

9.04 ac.

Primary Protection Areas (PPA)

2.98 ac. 33%

The banks of the Deschutes River constitute the Primary Protection Areas. This designation protects the wildlife habitat, the visual quality and a rare plant found along the banks of the river.

Secondary Protection Areas (SPA)

2.80 ac. 31%

The Secondary Protection Areas buffer the Primary Protection Areas. No development is planned here.

Limited Development Areas (LDA)

1.63 ac. 18%

The LDA includes the road corridor leading through the park. Steep topography and geology preclude any additional development.

Major Development Areas (MDA)

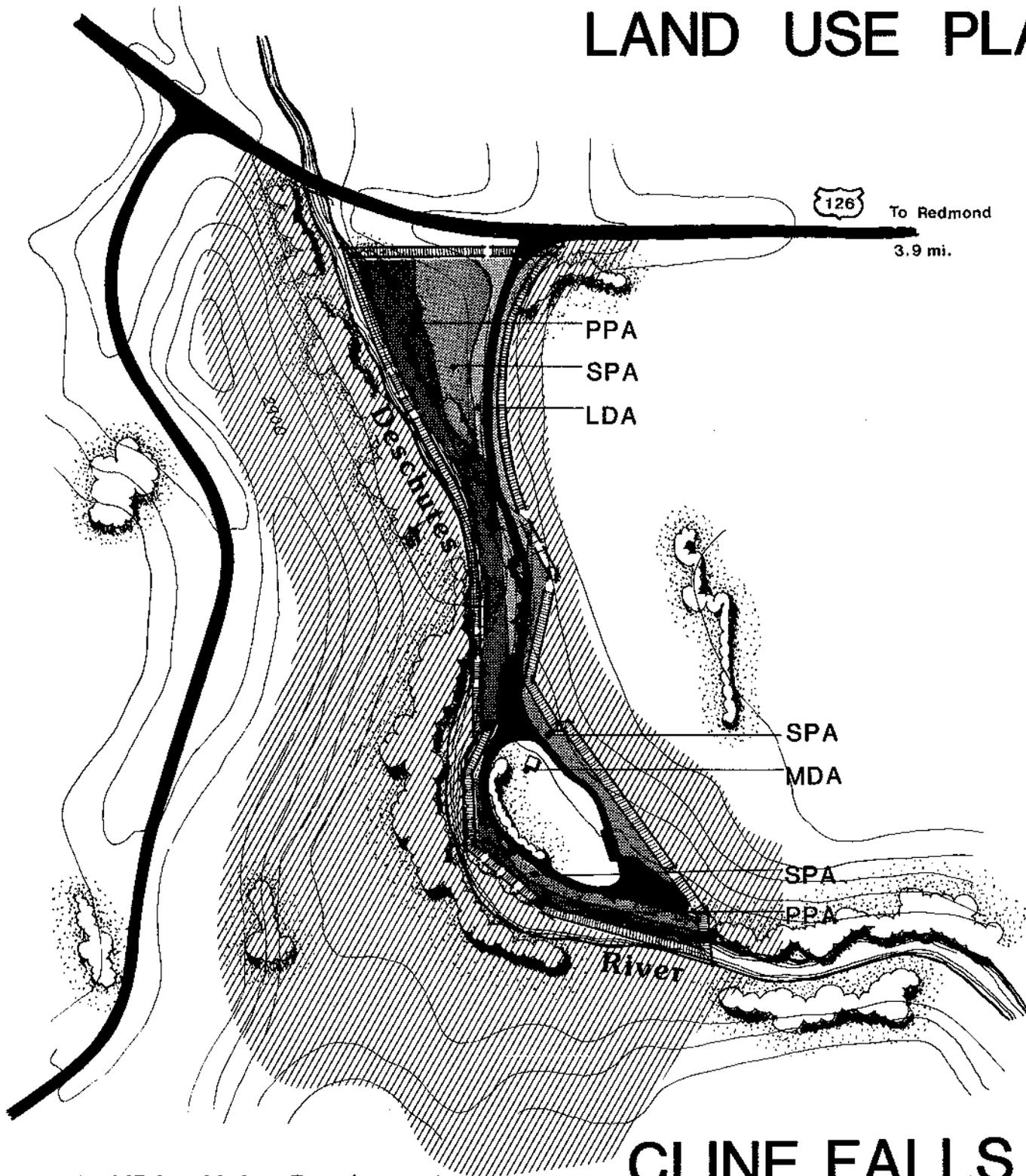
1.63 ac. 18%

Park development is limited to day-use facilities. Existing facilities include parking, restrooms, tables, stoves and drinking fountains. A picnic shelter will be constructed in the future.

Areas of Concern (AOC)

All the areas visible from the park are Areas of Concern. Any construction or development may have a adverse impact on the quality of recreational experiences in the park.

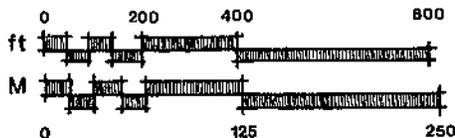
LAND USE PLAN



-  MDA - Major Development Area
-  LDA - Limited Development Area
-  SPA - Secondary Protection Area
-  PPA - Primary Protection Area
-  Area of Concern

CLINE FALLS STATE PARK

Deschutes County 1984



CLINE FALLS STATE PARK DEVELOPMENT PLAN
GOALS AND OBJECTIVES

GOAL 1: ENHANCE AND INCREASE THE QUALITY OF THE
EXISTING DAY USE AREA

OBJECTIVES:

- A. Construct a picnic shelter in the park large enough to accommodate group use.
- B. Stripe parking lot to organize parking and help control traffic within the park.

GOAL 2: PROTECT THE UNIQUE RESOURCES OF THE PARK

OBJECTIVES:

- A. Limit construction of additional facilities to areas already developed.
- B. Prohibit any activities which might impact the endangered plant, Estes' wormwood, which is found in the park along the river edge.
 - 1. Prohibit mowing along the river in areas where the plant grows.
 - 2. Familiarize park employees with the plant so it is not accidentally disturbed by maintenance activities.

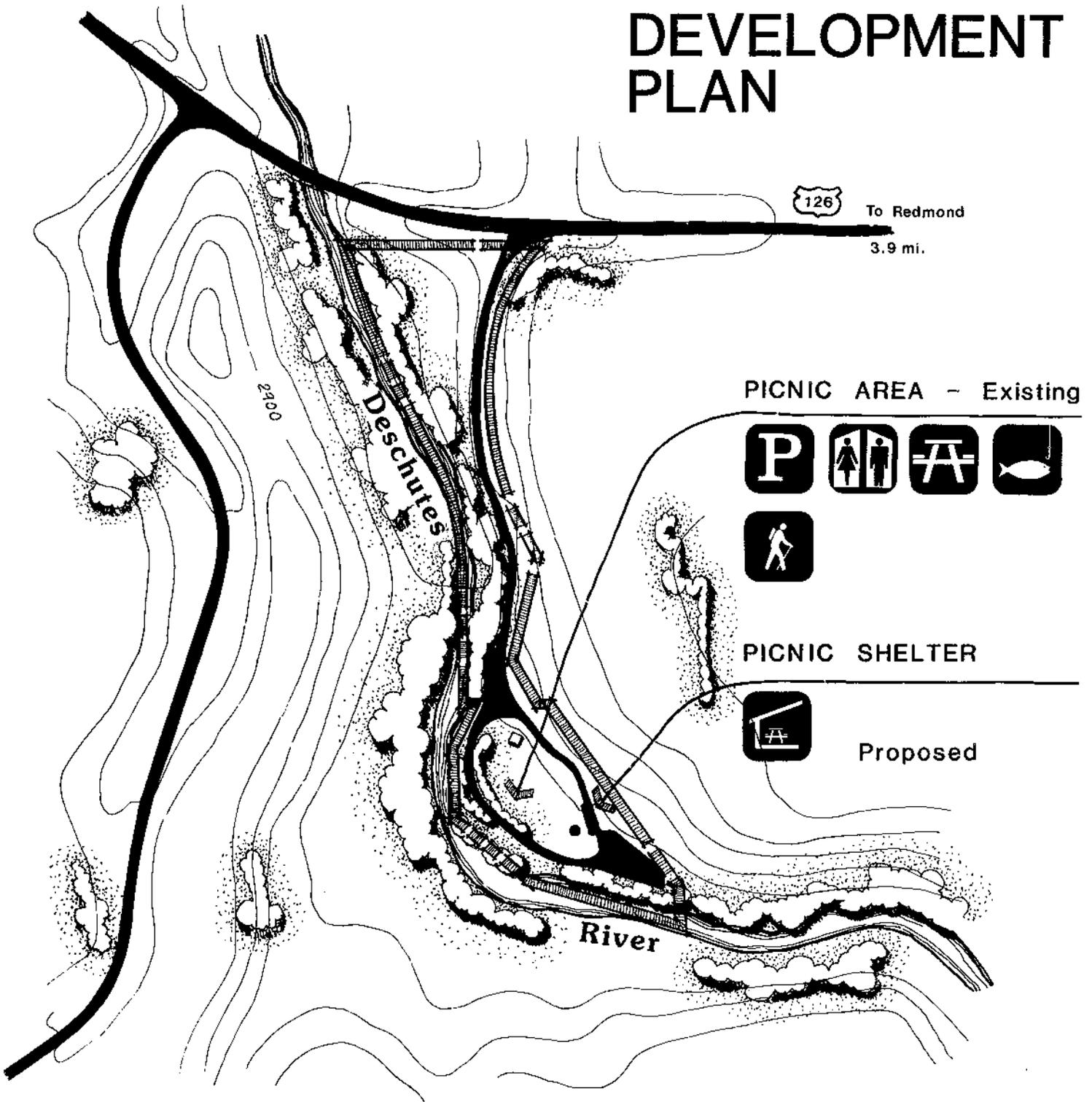
GOAL 3: TRANSFER MANAGEMENT OF THE PARK TO A MORE
APPROPRIATE JURISDICTION

OBJECTIVES:

- A. Maintain the park at current levels until the transfer of management is feasible.

- B. Cooperate with the development of the Redmond Regional Parks and Recreation District as needed.
- C. Transfer management of the park to the Redmond Regional Parks and Recreational District when maintenance funding is assured.

DEVELOPMENT PLAN



126 To Redmond
3.9 mi.

PICNIC AREA - Existing

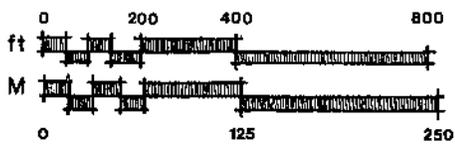


PICNIC SHELTER



CLINE FALLS STATE PARK

Deschutes County 1984



SUPPLEMENTAL INFORMATION

The following information is provided as background data on the natural and cultural resources of Deschutes County.

THE SETTING-DESCHUTES COUNTY

The setting of the Deschutes County State Parks is composed of both natural and cultural elements. A general discussion of major environmental and human patterns in this area of the state will provide a background for understanding the important components of the state parks in Deschutes County.

Climate

Climate and microclimate are major factors influencing the environment. The climate in Central Oregon is responsible for significant natural characteristics and human use patterns, and has contributed to the development of Central Oregon as one of the foremost year-round recreational areas in Oregon.

General climatic patterns consist of warm, sunny summers with very little summer rain, and cold, sunny winters with most precipitation occurring as snowfall. Local variations are provided by topography. There is an annual average of 130 clear days and 94 days of partly cloudy skies in Deschutes County. Temperature variations can be extreme in the summer months. High temperatures over 100 degrees are common, and in some areas, such as LaPine, frost can occur on any day of the year. Average annual maximum temperatures are between 60 and 65 degrees and average annual minimum temperatures are from 32 to 35 degrees.

The variations in both temperature and precipitation are generally the result of proximity to the Cascade Mountains and of elevation considerations. Precipitation varies throughout the area, ranging between 10 and 20 inches for most areas. Significant amounts of snowfall, between 15 and 50 inches annually, can accumulate depending on elevation and distance from the mountains. Winds in Central Oregon are generally very moderate, but are influenced locally by topography, especially by river canyons or mountains. Winds are generally from the south/southwest with a significant secondary wind direction from the north/northwest.

Geology

Central Oregon provides a showcase of geologic evidence of past volcanic activities. It is noted in ODGAMI* Bulletin 89 that:

Deschutes County could perhaps be called the land of a thousand volcanoes. It is likely that Deschutes County contains a greater abundance and variety of volcanic landforms than any other area of similar size in the United States. . .

The earliest rocks in Deschutes County, located along the north and eastern boundaries, date from Tertiary times. The volcanoes, cinder buttes and lava flows most apparent in the contemporary landscape are evidence of geologic events during the Pleistocene (500,000-11,000 years ago) and Holocene (11,000 years ago-present) Epochs when volcanic activity was most intense.

Geologic formations and features which are most obvious in Deschutes County state parks include the striking basalt rimrocks which cap much of the Deschutes River canyon north of Bend and are apparent at Tumalo State Park, the cinder cone formation of Pilot Butte, the deep, cindery soil and highly erodable banks of the Deschutes River as it flows through LaPine State Recreation Area, and the waterfalls and rapids created as Fall River tumbles over and along lava flows from Cascade volcanoes.

The volcanic activity in Central Oregon, while producing unusual landscapes, has also largely precluded the occurrence of metallic minerals. The known mineral resources of Deschutes County are of the industrial mineral type and include pumice, scoria, diatomite and clay-type deposits which are the results of volcanic activity and depositional processes.

There are also geothermal resources in Deschutes County, mostly in the Newberry Crater area.

*Oregon Department of Geology and Mineral Industries

Soils

Soils in the Deschutes County area strongly reflect the influence of volcanic activity. The soils are generally derived either from the breakdown of volcanic rock or from ash, pumice or other volcanic materials which have been enriched by organic matter.

Most soils in the state parks tend to be light-colored and coarse textured, moderately to slightly acid. Drainage varies from well- to excessively well-drained to poorly drained, depending on parent materials and underlying strata. Soils information and underlying geology are especially important considerations for determining development suitabilities and costs.

Water Features & Hydrology

Water is one of the most critical environmental factors in Central and Eastern Oregon. As an arid region that experiences only moderate rainfall, water resources are most important elements requiring special management consideration.

The Deschutes River is the major watercourse in Central Oregon. Fall River and Tumalo Creek are secondary watercourses. Other resources include numerous lakes of exceptional beauty and recreational value which are found in the foothills of the Cascades.

Ground water reserves in Central Oregon have assumed increasing importance in recent years. The water table is variable throughout the area, measuring in depth from within ten feet of the surface to hundreds of feet in more arid areas. Maintaining ground water quality has become an important issue for Central Oregon especially due to increases in population and subsequent development which might contribute to pollution of existing ground water resources.

Vegetation

Vegetation in Central Oregon is characterized by three main zones: the western juniper zone, the ponderosa pine zone, and the lodgepole pine zone. The most important factors in determining vegetation types are moisture and temperature.

Western juniper plant communities represent vegetation typical of the drier areas of Central Oregon. Rainfall averages between 5 to 10 inches annually with an average low temperature of about 32° and an average high temperature of 71° F.

The ponderosa pine zone intergrades with the western juniper zone and is found in areas of greater moisture and cooler temperatures. Much of the moisture of the ponderosa pine zone falls in the winter as snow. Daily summer temperatures generally fluctuate widely with hot days and cold nights. In many areas frost can occur any night of the year.

The distribution of the lodgepole pine zone is determined by temperature, elevation and soil type. The climate of the lodgepole pine zone is characterized by low summer rainfall, wide daily temperature fluctuations and a relatively short growing season with annual precipitation ranging from 15 to 25 inches. Elevations for the lodgepole pine zone lie between 4000 to 5000 feet. One of the most important factors determining the distribution of lodgepole pine instead of ponderosa pine appears to be the tolerance of lodgepole pine seedlings to frost and poorly drained soils.

Wildlife Habitat, Wildlife and Fish

Wildlife habitat and vegetation are closely linked. Plant associations within the previously described vegetative zones provide the framework for determining wildlife habitat types. There are also unique or specialized habitats created by unusual environmental circumstances within each general plant association.

Riparian and water-associated habitats promote the greatest diversity in wildlife species and are most important to protect and maintain. Three of the four state parks in this master plan have important riparian habitat areas as well as other habitats of varying quality and less importance.

Wildlife

In recent years, wildlife has been assuming greater importance as a natural resource. Wildlife populations and distribution can be considered a measure of ecological quality. Wildlife is usually classified as big-game wildlife, furbearers, upland game birds, waterfowl and non-game wildlife.

The most common big-game animal in Central Oregon is the mule deer. Other big-game species found in Central Oregon but not in the state parks in this master plan include elk and antelope.

Aquatic furbearing animals (mink, muskrat and beaver) are not very numerous. Other furbearing species such as fox, raccoon or skunk are also not very common. The coyote, however, is a furbearer found throughout the county and the coyote population is relatively high.

Most abundant upland game birds include Valley or California quail, grouse and mourning doves. Quail and mourning doves are common in the Deschutes County State Parks.

The county-wide waterfowl population is varied. The most common species are mallard ducks and Canada geese. The county is also the winter home for a sizable population of coots.

Non-game wildlife species include many small mammals, birds and reptiles. The least chipmunk is the most common wild mammal along with the golden mantled ground squirrel and Belding ground squirrel.

The osprey is moderately abundant in riparian areas and represents a species of importance due to its rarity in other regions. The great blue heron is also common along watercourses.

The most common reptiles are western fence and sagebrush lizards (Sceloporus spp.). Frogs and some toad species are abundant in riparian areas.

Fish

The water resources of Central Oregon host a large and diverse population of fish species. Brook and brown trout are native to the various rivers and streams as are mountain white fish, tui chub and several other species. Additional fish species stocked by the Oregon Department of Fish and Wildlife include rainbow, Dolly Varden and lake trout, and some kokanee salmon.

Cultural Background

The natural environment is only one aspect of the Central Oregon area. Man's use of natural resources in the past and present is also important to consider in acquiring an understanding of the Deschutes County area.

Archeological evidence indicates that human presence in Central Oregon dates back at least 13,000 years. Numerous sites of these earliest inhabitants exist in Central Oregon and are especially common at lake margins and along the main watercourses. The Native Americans in Central Oregon traveled widely, gathering food, hunting, and trading. They continued their hunter/gatherer lifestyle until the arrival of Caucasians, who radically changed the Central Oregon environment.

The first white man in Central Oregon was probably Peter Skene Ogden who explored the Deschutes area and the high lava plains in the winter of 1825. In 1834, Nathaniel Wyeth explored the upper Deschutes River basin in the Pringle, Dillon and Benam Falls areas. The decade of the 1840s witnessed a large increase in the number of immigrants passing through Central Oregon on their way to the Willamette Valley. The gold rush in the 1860s to the John Day River basin brought permanent settlers into Central Oregon. In 1860 the first bridge across the Deschutes River was built at Sherars Crossing. Transportation connections between the more populous and mild Willamette Valley and Central Oregon over the Cascade Mountains remained a problem until 1962 when the Santiam Pass was completed and opened for year-round travel.

In 1905 the Central Oregon Irrigation Company began transforming the sage-lands of Central Oregon into irrigated fields. Another decisive event for Central Oregon was the completion in 1911 of J.J. Hill's railroad from The Dalles to its terminus in Bend. The completion of the railroad resulted in a period of economic growth in Central Oregon linked to lumber production. Lumber and ranching were economic mainstays in Central Oregon until the boom in tourism and recreation of the last decade. Central Oregon is today one of the most rapidly growing areas in the state due to its exceptional scenic qualities and recreational opportunities.