Carley State Park Management Plan

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This public review draft management plan for Carley State Park was completed by the Minnesota Department of Natural Resources, Office of Planning, Park Planning Section in May of 1985. Funding for the planning process was provided by the Legislative Commission on Minnesota Resources.

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Document: Carley/20

Introduction

THE PLANNING PROCESS

The Outdoor Recreation Act (ORA) of 1975 (M.S. 86A) was enacted by the Minnesota Legislature to "preserve an accurate representation of Minnesota's natural and historical heritage" and to "provide an adequate supply of scenic, accessible, and usable lands and waters to accommodate the outdoor recreation needs of Minnesota's citizens." The intent of this legislation is to ensure, through long-range planning, the protection and perpetuation of Minnesota's outstanding resources.

ORA also redefined certain recreation unit classifications. For example, the state park classification was divided into recreational state parks and natural state parks. As a part of the overall planning process, each park will be reviewed to see that it is consistent with one of the two park classifications. Upon completion, the plans will provide long-range management policies and recreation and resource development recommendations which will reflect the classification designation for each park. The ORA also states that after August 1, 1977, no development funding will be permitted for any park until a management and development plan has been completed. By authorizing this planning program, the legislature has taken a significant step toward building a state recreation system which reflects an accurate representation of "Minnesota's natural and historical heritage" that can be enjoyed both now and by future generations.

The Park Planning Section of the DNR, Office of Planning was established to formulate long-range resource management and recreation development plans for 82 state parks, recreation areas, and waysides.

The park planning process consists of seven steps:

1. An inventory of natural resources, visitor use, and existing facilities is compiled. Specialists from other DNR divisions and units assist in collecting pertinent data. At this point the first public workshop is held to invite public comment.

2. Alternatives for park management and development are developed. These alternatives are reviewed by the Park Planning staff and the DNR, Division of Parks and Recreation.

3. The recommendation for park classification is made, the park goal is developed, and the draft plan is written. This step culminates in the first interdepartmental review.

4. The draft plan is revised as the result of the interdepartmental review. The revised plan is made available to the public for a 30 day review period. During this public review period a second public workshop is held to receive public comment.

5. The draft plan is revised according to information received from the public review. The plan is then sent to the State Planning Agency for a 60 day review period.

6. The resource and development recommendations are implemented by the DNR, Division of Parks and Recreation.

7. The State Legislature will determine the classification of each state park, taking into account the classification recommendation made in the management plan.

In planning the management and development of the various units, the Department of Natural Resources will consider probable future impacts which may affect each unit. In spite of this, unforeseen circumstances are bound to occur. Therefore, each plan should be reviewed periodically to see that it remains relevant in light of current conditions. While a plan can and should be modified if conditions change, nothing should be done that would be detrimental to the goals set forth in the philosophy of this plan.

EXECUTIVE SUMMARY

Carley State Park was established in 1949. The 211 acres which are within the park's statutory boundary were donated to the state and are currently in state ownership. It was determined that this ORA unit does not meet the criteria for natural or recreational state park. It is recommended that this unit be classified as an ORA "additional parks" unit. Transfer to another unit of government may be considered in the future.

The goal for the park shall be to manage Carley State Park to provide an alternative to highly developed vehicular campgrounds and continue to provide a broad selection of outdoor recreation opportunities in a natural setting for a limited number of people.

A regional analysis showed that a large number of opportunities for camping and picnicking exist with a 25 mile radius of Carley. Public transportation to the park is poor and bicycle access to the park should be improved.

Analysis of existing park user data showed that day users accounted for 70 to 97 percent of the park's visitation for weekend and weekdays respectively. Up to 50 percent of Carley's weekend camping resulted as overflow from full campgrounds at Whitewater State Park located 12 miles to the southeast. The other 50 percent and all weekday campers chose Carley over the numerous other camping opportunities available within the 25 mile radius surrounding Carley.

Carley is located in the Southern Oak Barrens Landscape Region near the western edge of the Blufflands Landscape Region. It is not a good example of either Landscape Region.

The soils and steep slopes in the park are a limiting factor in recreational developments. The vegetation in the park has been significantly affected by European settlement, however, a relict pine stand is located in the park. At this time the statewide significance of relict pine stands has not been fully evaluated by the DNR, Natural Heritage Program. Therefore, the stand should be protected until such study is complete. Periodic flooding does occur in this valley and it does affect existing day use facilities. Egress from the park is not affected by the flooding. Groundwater is available in this park at depths of 195 ft. to 364 ft. The North Branch Whitewater River is designated as a trout stream from its mouth upstream through Carley. The area of Carley provides only marginal trout habitat.

Proposed recreational developments include: expansion of picnic area; planting trees near parking lot and along creek; a new natural childrens play area; safety and erosion control on trails; railings on bridges; a new loop trail; expansion of trail parking lot; design of one self-guided interpretive trail; redesign of campground; replacement of pit toilets with vault toilets; providing water in group camp; relocation of entrance road; a new park entrance sign; plowing some park roads in winter; removal of abandoned fence lines; and possible construction of an unheated storage building.

Minor boundary modifications have been recommended to allow proposed developments and ensure protection of park resources.

Regional Analysis

INTRODUCTION

In order to determine a park's potential role in perpetuating natural resources and fulfilling recreational needs, a regional analysis is necessary. The analysis is designed to look at a given park's interrelationship with such factors as: accessibility, transportation, population distribution, economy, surrounding land use, and other nearby recreational facilities.

Recognition of a state park's interrelationship with these factors will help to ensure that park development will be planned to meet state park classification criteria, protect natural and historic resources, meet appropriate recreational demands, and avoid competition or facility duplication with other recreation providers.

THE SURROUNDING AREA

Accessibility

The accessibility of Carley State Park in terms of time and distance, by the population it serves must be evaluated when recreational programs and developments are considered. Alternative methods of transportation should also be considered in light of long term energy and economic situations.

Carley State Park is located about 70 miles south of the Twin Cities. Approximately one-half of the state's population lives in the Twin Cities area. The communities of Rochester, Lake City, Wabasha and Winona are within 15, 23, 20, and 25 miles respectively, from Carley State Park. Vehicular access to the park from these and other nearby population centers is excellent.

The community of Rochester is serviced by over six buses per day from the Twin Cities. The area towns of Plainview, Elgin, Elba, Altura and Eyota do not currently have any bus service. Public transportation is very limited in the area around the park and no commercial bus routes pass by the park. Visitors using public transportation would require alternative transportation from Rochester, St. Charles or some other more distant community to the park.

It is possible that some people may travel to the park by bicycle. Bicycle touring has become a more popular activity statewide. The Minnesota Department of Transportation (Mn/DOT) has prepared a set of Statewide Minnesota Bikeways maps as a guide to help bicyclists select routes. The condition of all public

paved roads in the state has been evaluated and rated for good, fair, poor and unsatisfactory riding conditions. Additional information about the roads and recreational facilities is also included on these maps. A review of several maps revealed that roads rated good for biking with occasional short sections of fair, poor and unrated gravel roads exist both north and east of the park to Highway 61 and south and east of the park to Whitewater State Park. Bike access to the park from the communities of Lake City, Wabasha, Weaver, Minneska, and Elba is good. Bike access to the park is poor from the communities of Rochester, Elgin, Zumbro Falls, Kellogg, and St. Charles. Roads leading to the park from Rochester range from unsatisfactory near the city to poor and fair closer to the park. In general, bike access out of Rochester is poor. Road improvements could improve bike access to the park.

Paving of the shoulders on CSAH 4 in Wabasha County would improve bicycle access to the park. A bike route loop rated good to fair, approximately 25 miles long, extends north from Whitewater State Park through Elba then west to connect to Carley State Park and then south and east back to Whitewater State Park. This route will be entirely paved by fall 1985. This route exemplifies the deep valleys and agricultural uplands associated with this landscape region. It is also part of the Wabasha, Whitewater State Park, Winona bicycle tour route which is a candidate for the Explore Minnesota Trail Collection representing the Southeastern Blufflands. (Map of entire tour route included in the MPD*.) *Management Plan Details

In general the gravel roads in this portion of the state are comprised of crushed limestone which are usually very hard packed and make a reasonable surface for biking short distances. Highway 74, through Whitewater Wildlife Management Area (WMA) is not paved from Weaver to Elba. Portions of this road could be used as a connector between more suitable biking routes.

Population

Approximately 173,036 Minnesotans live within a 25 mile radius of Carley State Park (1980 census). Population data was not collected for residents of Wisconsin who live within 25 miles of the park.

Communities within approximately 25 miles of the park contribute to the day use of the park. The following is a list of cities with populations over 1,000 within 25 miles of the park.

TABLE 1.

City	Population*	Distance From Carley State Park**
Rochester	57,890	15 miles
Winona	25,075	25 miles
Lake City	4,505	23 miles
Stewartville	3,925	23 miles
Plainview	2,416	3 miles
Wabasha	2,372	20 miles
St. Charles	2,184	12 miles
Zumbrota	2,129	25 miles
Chatfield	2,055	20 miles
Byron	1,715	25 miles
Eyota	1,244	10 miles
Lewiston	1,226	20 miles

* 1980 Advance Census Data
** Straight line distance, not by road

During the 1970s, the statewide population experienced its greatest growth in suburbs and lake areas (Dept. of Energy, Planning and Development, 1983). Wabasha County experienced moderate growth in population between 1970 and 1980 while Olmsted and Winona counties experienced slow growth (1970, 1980 census). It is projected by the State Demography Unit that both Wabasha and Olmsted counties will receive moderate growth between 1980 and 1990, while Winona County will receive slow growth (Dept. of Energy, Planning and Development, 1983). The State Demographer Office report, Minnesota Population and Household Estimates 1983, estimates that the population growth for Wabasha County will occur in the cities and townships closest to the Mississippi River (Minnesota State Planning Agency, August 1984). Rochester, located in Olmsted County, is the state's fifth largest city. The community of Rochester is growing at a rate substantially above the state growth rate (Minnesota State Planning Agency, December 1984). This accounts for much of the expected population growth in Olmsted County.

Economy and Surrounding Land Use

Carley State Park is located within the boundaries established for the Richard J. Dorer Memorial Hardwood State Forest. This state forest was established by the state legislature in 1961 "to promote cooperative forestry programs, demonstrate proper land management, and stabilize and restore watersheds." (MN-DNR, Forestry, October 1984). The statutory boundary of this forest encompasses nearly two million acres in eight S.E. counties. Approximately

83,000 acres within the statutory boundary of this forest are managed by the DNR for state forests, parks and wildlife management areas. The following chart lists state forests, WMA's and parks within 25 miles of Carley State Park.

TABLE 2. State Forests, Parks, and Wildlife Management Areas Within Approximately 25 Miles of Carley State Park

County	Unit Name (1)	Proposed Acreage	Current State Ownership (Acres)
Olmsted	Rochester WMA	730	730
Wabasha	*I.W.L. WMA	80	80
Wabasha	*Mazeppa WMA	3	3
Wabasha	*McCarthy WMA	3,521	1,962
Wabasha	*Zumbro WMA	1,337	20
Wabasha	R.J. Dorer Forest	338,564	9,160
Wabasha	*Carley SP	211	211
Winona	*Whitewater WMA	39,180	25,497
Winona	*John A. Latsch SP	1,534	388
Winona	*Whitewater SP	2,862	1,722
Winona	Thorpe WMA	95	95
Winona	R.J. Dorer Forest	392,300	6,791

(1) WMA = Wildlife Management Area administered by DNR, Division of Fish and Wildlife.

SP = State Park administered by DNR, Division of Parks & Recreation.

* = Indicates units within the boundaries of the Memorial Hardwood State Forest.

Carley is located on the eastern fringe of Minnesota's prime agricultural region. This portion of the state is less intensively cultivated and has rolling terrain with interspersed pasture land. The mixture of cultivated and pasture lands support dairy, beef and cash crop production. Lands adjacent to Carley are being cultivated, pastured, hayed or are wooded hillsides too steep for agricultural uses (See Table 3.)

TABLE 3. Percent of each land use by county.

Land Use	Olmsted	Wabasha	Winona
Forest	8	22	33
Cultivated	68	58	46
Pasture & Open	20	13	15
Water & Marsh	0	5	3
Urban	4	2	3
Other	0	0	0

The Minnesota communities located within 25 miles of Carley have a very diverse collection of employment opportunities. In Rochester, the largest city, the Mayo Clinic (single largest employer) and associated medical and visitor support services account for the largest number of jobs. The IBM manufacturing plant, which makes electronic equipment, is the second largest single employer in Rochester. Common industries located in Rochester and other Minnesota cities within 25 miles of the park are: food processing, and packaging; utility and transportation companies; education, nursing home, medical and governmental services; heavy construction and light and heavy manufacturing companies; banking and agricultural support services. Specialized companies for clothing manufacturing are located in Winona and Lake City. Arts and craft production and metal casting and manufacturing companies are located in Lake City. Lewiston has a photographic processing plant and Chatfield and Zumbrota have cabinet or furniture construction companies. Plainview, like many of the smaller communities is dominated by food processing and packaging industries and has numerous agricultural support services located within the community. In the three-county area surrounding the park (Olmsted, Wabasha, and Winona), industries providing services, primarily medical and educational, employ the largest number of people. Manufacturing and retail sales are the second and third highest employers for the three-county area. Employment in manufacturing is as much as three times higher than the employment in agriculture for the combined three counties (U.S. Census 1980).

Recreational Facility Supply and Demand

In the planning of Carley, it is important to analyze the potential relationship of the park with other recreational facilities in the area. The inventory of and demand for recreational facilities near the park was taken from the Statewide Comprehensive Outdoor Recreation Plan 1979 (SCORP '79).

SCORP '79 is a four-year study which identifies recreational facilities, use patterns and activity preferences on state and regional levels. SCORP information was collected on the basis of economic development regions. There are thirteen of these regions in the state. Carley State Park is located in Region 10 (see Economic Development Region Map, p.17). Region 10 includes Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, and Winona counties.

It is important to note that recreational facilities near a park may duplicate services. However, some people will consistently choose to frequent one area over another in the pursuit of a particular experience. For example, camping is a recreational activity which state parks accommodate. City and county parks in the vicinity of a state park may also have campsites. Some people, however, will consistently travel to a state park because of the type of supervision and experience it offers, namely camping in a natural setting augmented by other recreational opportunities.

The computerized inventory of recreation facilities for SCORP is stored by county and filed by township and range. A special study was prepared for this report using the SCORP data base to identify all recreation sites inventoried within approximately 25 miles of Carley. A variety of recreational facilities are located within 25 miles of Carley. They include: city parks with picnic areas, sports fields, tennis courts, swimming pools, trails and campgrounds; county parks with campgrounds, picnic areas, trails; state campgrounds, trails, picnic areas, swimming beach, canoe and boat accesses, and wildlife lands; and private campgrounds with swimming pools, trails, picnic areas and water accesses.

The distance Minnesotans are willing to travel to recreate varies for each activity. The following mileage figures on an individual's willingness to travel to make use of a recreational facility came from information collected by the DNR in preparation of SCORP '79.

Economic Development Regions

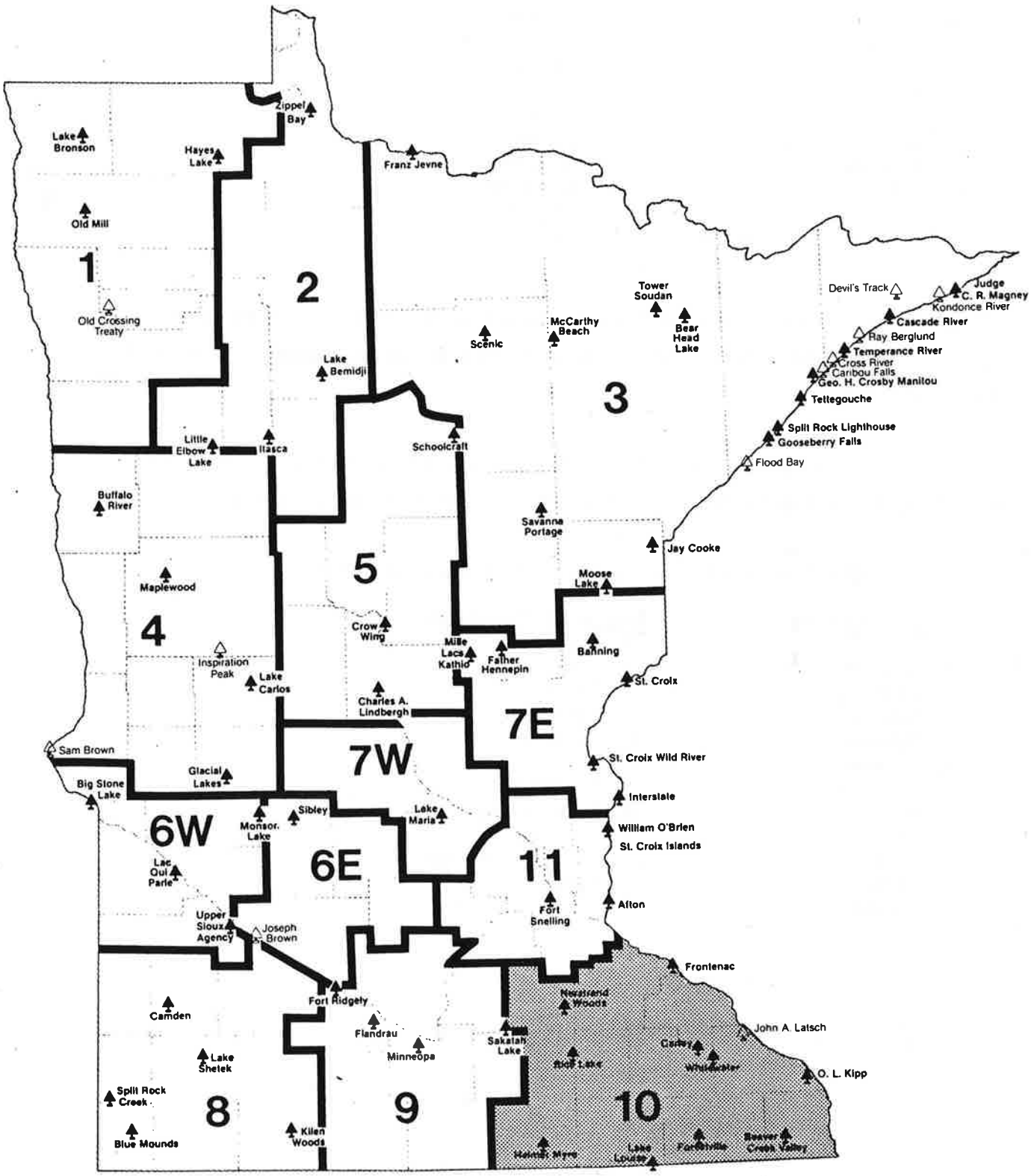


TABLE 4. Willingness to Travel

Activity	(Non-Metro Minnesotans) Distance willing to travel to participate
Camping	76 miles
Picnicking	32 miles
Hiking	31 miles
Swimming	16 miles
Bicycling	14 miles
Horseback Riding	22 miles
Ski Touring	32 miles
Snowmobiling	43 miles
Golfing	13 miles
Visiting Historic Sites	20 miles

Metro region residents are willing to travel an average of 115 miles for camping facilities. Carley State Park is located approximately 80 miles from the metropolitan area.

SCORP '79 has ranked a number of summer and winter recreational activities according to expressed desire by Minnesotans for more opportunities to do them.

TABLE 5. SCORP '79 ranking of summer recreational activities.

All Minnesotans	Region 10 Residents
1. Bicycling	1. Bicycling
2. Camping	2. Camping
3. Fishing	3. Tennis
4. Tennis	4. Fishing
5. Swimming	5. Swimming
6. Hiking	6. Hiking
7. Picnicking	7. Golfing
8. Boating	8. Picnicking
9. Golfing	9. Boating
10. Park facilities	10. Park facilities
11. Canoeing	11. Canoeing
12. Horseback riding	12. Trail biking

SCORP '79 ranking for winter recreation activities.

All Minnesotans	Region 10 Residents
1. Hunting	1. Ski touring
2. Ski touring	2. Hunting
3. Snowmobiling	3. Snowmobiling

The population data discussed on page 12 is for an approximate 25 mile radius of Carley. Excluding snowmobiling and camping, 25 miles is an average distance non-metro residents are willing to travel to participate in a recreational day activity. The 173,036 Minnesotans residing within approximately a 25 mile radius of the park are the source of the park's primary day users. However, use of Carley's facilities is highly dependent on the availability of comparable recreational facilities closer to the area's population centers. Comparable recreation facilities located in and beyond the 25 mile radius of the park can attract potential users away from this state park. For example, residents of the cities of Rochester, Lake City, Wabasha, Winona, Stewartville and Plainview may also be attracted to state parks such as Whitewater, O.L. Kipp, Beaver Creek Valley, Forestville, Lake Louise, Rice Lake, Nerstrand Woods or Frontenac, several of which are located within 25 miles of each city.

The following is an inventory of the supply of each facility type in the study area and a brief discussion of the demands for that opportunity on a regional and statewide basis.

Picnicking

Picnicking is a desired activity statewide. It is not perceived to be in short supply by residents of Region 10 (SCORP '79).

There are seventy-two places to picnic within the study area. Most are open to the public free of charge and some require a use or entrance fee. Only two are restricted to use by members. The facilities are well distributed throughout the study area with clusters of facilities around Rochester, Chatfield, Zumbro Lake, Mazeppa, Zumbro Falls, Lake City, and Wabasha. Olmsted and Winona counties both have picnic facilities located within the study area. Wabasha County is located entirely within the study area and does not provide any picnic or camping facilities. The following table summarizes the type and number of picnic facilities in the study area.

TABLE 6. Minnesota Picnic Facilities Within 25 Miles of Carley State Park

Type of Facility	Number of Sites	Number of Tables	Number of Shelters
City Parks	43	716	7
County Parks	2	163	4
Mn/DOT Rest Areas	6	28	2
State Parks	3	140	2
State Forests	1	13	1
State Trails & Water Access	2	25	3
Private	15	395	1
TOTAL	72	1480	20

Most picnic grounds are located in conjunction with other recreational facilities such as water accesses, campgrounds, swimming facilities, etc. Some are located in city parks adjacent to athletic fields, while others are located in natural settings along lakes and rivers and some are very small sites along highways. The existing facilities at Carley are located in a valley, along a stream in a very natural setting.

Swimming

SCORP '79 identified swimming as the fifth most desired recreation activity requested by residents of Region 10. There are several lakes in Rice County northwest of Rochester, however, the rest of Region 10 is lacking in natural lakes. The eastern half of this region is heavily stream dissected and some swimming does occur in these streams and in man-made reservoirs along their lengths. Extreme fluctuations in water flow make most of the rivers unsuitable for swimming.

Several swimming pools are operated by cities, school districts and the private sector. The cities of Plainview and St. Charles have outdoor pools.

Within the study area, Goodhue, Fillmore, and Olmsted counties do not have any natural swimming beaches. Whitewater State Park contains a man-made diversion of the Whitewater River channel which provides a public swimming beach. In Wabasha County two private resort/campgrounds located along the Zumbro River at Zumbro Lake each have a natural swimming beach. All other natural beaches in this study area are located on the Mississippi River and Lake Pepin.

The following table summarizes the swimming opportunities available in the study area.

TABLE 7. Swimming Facilities

Type of Facility	Beach	Pool
School District	0	3
Municipal	3	6
County	0	0
DNR Parks	1	0
Private	4	5
TOTAL	8	14

Trails

A large network of trails does exist within the study area. Over two-thirds of all trails accommodate snowmobiling. Of these, 189 miles of the snowmobile trail are part of the state grant-in-aid system. Within the study area, 43.7 miles of horse riding trails are provided on state owned lands. The following table breaks the total trail miles into specific trail uses. All grant-in-aid trails are single use facilities which do not accommodate other users in different seasons and are subject to change in location or mileage.

TABLE 9. Total trail miles by activity and county

	All Trails	Hiking	x-Ski	Interp.	Horse	Bike	Snowmobile
Fillmore	0	0	0	0	0	0	0
Goodhue	3.5	.5	.5	0	0.5	0	3.5
Olmsted	94.2	26.8	19.1	1.0	21.5	17.1	74.5
Wabasha	160.0	45.0	13.0	1.3	36.1	4.0	137.1
Winona	66.9	26.2	6.8	3.1	17.1	5.5	28.4
TOTALS	324.6	98.5	39.4	5.4	75.2	26.6	243.5

All trail types are located on a wide variety of private, municipal, county, and state lands.

Group Camping

Within the study area, four group camp facilities were identified. Two of these are scout camps located near Rochester and are not open for use by the general public. Only Whitewater and Carley State parks provide the general public with group camping facilities.

Whitewater State Park contains both a structured and a primitive group camp. The structured camp has insulated sleeping barracks, a dining/craft building and a toilet and shower building. The primitive camp has open level areas for tenting, pit toilets and water available.

The following table identifies the capacity of each facility.

TABLE 8. Group Camp Facilities

County	Facility Name	Capacity
Olmsted	Edith Mayo Girl Scouts	63
Olmsted	Kahler Boy Scout	175
Winona	Whitewater S.P., Structured G.C.	132
Winona	Whitewater S.P., Primitive G.C.	100
Wabasha	Carley S.P., Primitive G.C.	75

Camping

There are 39 camping areas documented within the study area. Private campgrounds provide 74 percent of the total number of vehicular campsites and 60 percent of the total number of walk-in (tent only) campsites available. Camping areas vary in size from two walk-in camp sites at DNR canoe campsites to 112 vehicular sites at Whitewater State Park. Several private campgrounds have between 50 and 110 vehicular campsites supplemented by walk-in sites. The following table summarizes the total number of campgrounds and campsites available in the study area.

TABLE 10. Camping Facilities Located in the Study Area

Type of Facility	Number of Campgrounds	Number of Vehicular Sites	Number of Walk-in Sites	Percent of Total Sites
Municipal	6	207	65	15.5
County	2	37	0	2
DNR, Trails & Waterways	5	10	8	1
DNR, Forest	1	8	0	.5
DNR, State Park	4	132	20	9
Private	21	1120	139	72
TOTALS	39	1514	232	100

Camping was ranked the second most desired recreational activity by residents of Region 10 (See discussion page 18. According to SCORP '79, 10 year projections (1980-1990) indicate a 9.4 percent increase in camping occasions statewide.

The Park User

INTRODUCTION

Carley State Park currently provides recreation activities which have attracted between 9,137 and 15,960 recorded visitors each of the years between 1980 and 1983. This park has been staffed from April 1st until the end of December each of these years, therefore, park records do not include visitation for the three winter months. The park is used in the winter for cross country skiing and sliding. In addition, for 1982, park visitation records do not reflect the amount of visitation which occurred during the two days per week which the park technician was off duty. A vehicle counter was installed on the entrance road in 1983. The following data is based on existing park records and has not been adjusted to accurately reflect the unstaffed periods or the unrecorded amount of winter use which the park received.

Day Users

From 1982 through 1984 day users accounted for 70 to 84 percent of the annual weekend/holiday visitation and 95 to 97 percent of the weekday visitation for Carley. The primary recreation activities which attract day users are: picnicking, relaxing in a pleasant environment, and hiking.

The park staff maintains daily records for some recreation activities which occur in the park. Records do not reflect use when the park is unstaffed or activities which occur unobserved by park staff.

Records indicate that 14 horseriders used the park in 1982, however the park contains no horse riding trails. No horseriders were recorded in 1983 or 1984. Between 79 and 235 individuals stayed overnight in the group camp each year from 1982 through 1984. In 1982 and 1983 over 143 people were observed to have biked in the park. In 1984, observation records indicate that use dropped to 45 biking occasions.

Records also indicate that 232 cross country skiing occasions occurred in the park during November and December of 1983. Approximately two-thirds of those occasions occurred on weekends or holidays. In 1984, 55 user occasions were recorded during December. This activity is greatly affected by snow and weather conditions.

Camper Profile

Campers accounted for an average of 15 percent of the total recorded park visitation for the years 1978, 1979 and 1980. This is probably high due to the lack of park user data collected during the winter months when the park is not staffed.

TABLE 11. Annual Visitation Data

Year	Total Visitation	Campers (Not inc. group camping)
1983	10,999	1,092
1982	9,137	1,652
1981	12,863	1,898
1980	15,960	2,559
1979	13,773	2,146
1978	10,419	1,486
1977	10,549	1,707
1976	12,701	2,208
1975	13,845	2,666
1974	7,746	1,373

Camping at Carley has fluctuated less dramatically and with no direct correllation to the statewide averages for all state parks. This park closely matches the fluctuations in camping occasions which have occurred at Frontenac State Park located about 30 miles north of Carley. In general, camping occasions at Carley reflect changes in the number of available campsites in Whitewater State Park located 12 miles southeast of Carley. In 1975 and 1980 Carley showed significant increases in camping occasions while Whitewater was operating at about two-thirds available capacity. Opening of the new campground at Whitewater in 1981 may be the cause of a decline in camping use at Carley. User data has not been collected which could support or dispute the above speculations.

Camper registration cards are filled out for each campsite which is used. This card records camper name, address, number in party, length of stay, campsite number and dates the campsite was used. This card does not necessarily provide data on individual campers. Information gathered is on each group of campers who register for a campsite. In some cases, groups may include an entire family; in others, it may be a single individual. Information on camping parties at Carley was obtained from these camper cards.

The DNR prepared a random sampling of 153 and 109 camper registration cards for the years 1981 and 1982 respectively.

A comparison between 1981 and 1982 data indicates there was no major change in camper origin patterns. The following is a breakdown of the random sample of camper data analyzed for 1981 and 1982.

TABLE 12. Camper Origin Data

Origin	Percent Visitation	Largest Out-of-State Percentages
Minnesota	91%	Iowa 2%
Out-of-State	9%	Illinois 2%
	100%	
Within 25 mile radius of park	27%	
Between 25 and 50 mile radius of park	5%	
Metro Area	48%	
Rochester	13%	
Plainview	6%	

A Camper Origin Map (p. 30) was prepared to show the home residence of those people sampled who camped at Carley. Eighty-nine percent of all camping parties came from within the zone identified on the camper origin map. Forty-eight percent of all camping parties originated in the seven county metro area.

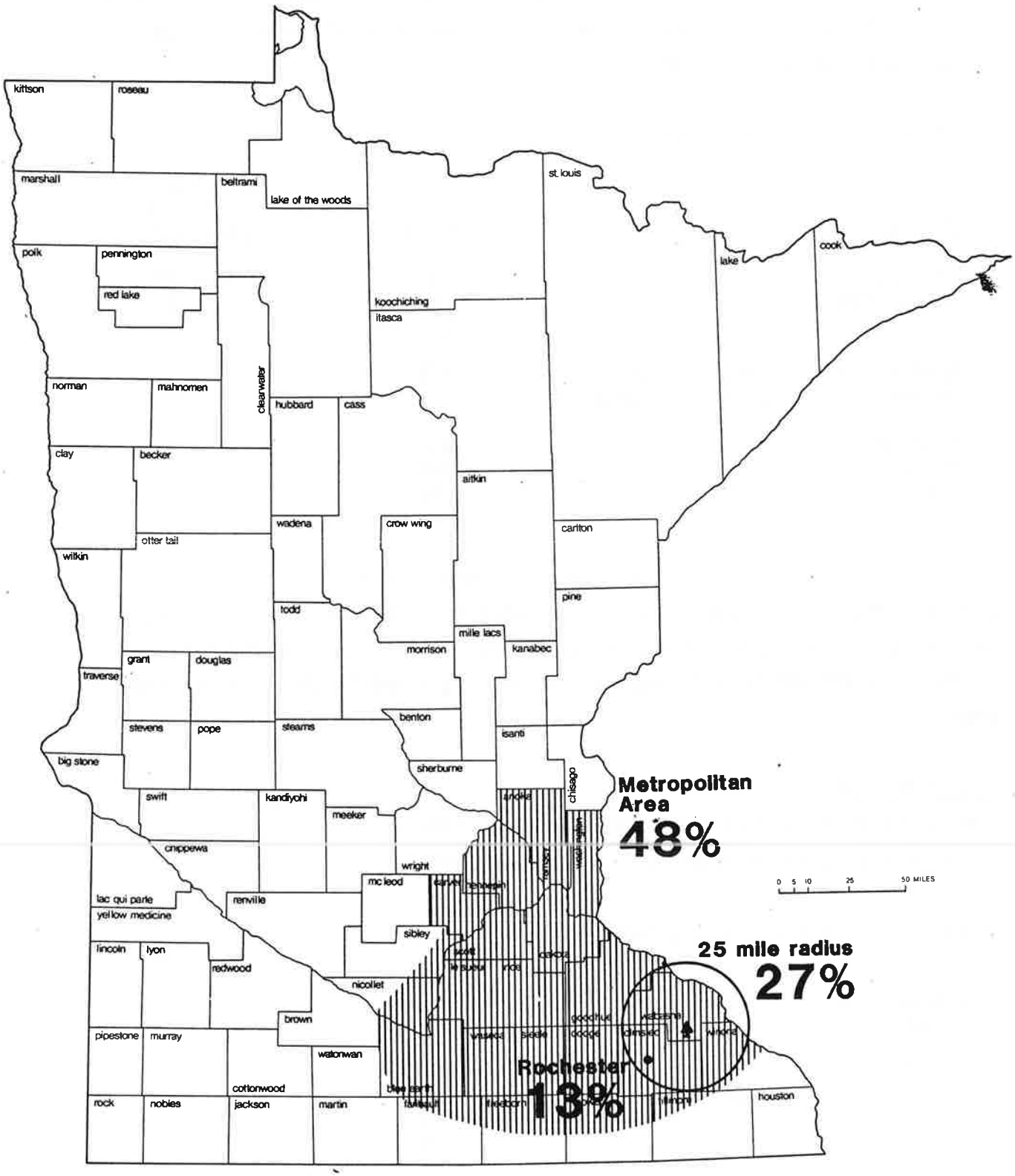
Length of Stay

The following is a summary of the random sampling of camper cards documenting the length of stay recorded for each camping party.

TABLE 13. Length of camping party stay

Consecutive Nights Camped	1981	1982	Percent of Total
1	116	67	70
2	31	35	25
3	6	7	5

For some parks these records are not always accurate because some campers register for one night at a time even if they plan to camp in the park for a



Carley State Park

Camper Origin

longer period. It has been determined by spot checking camper cards when the sample was being created and reviewing the daily park records that the length of stay records are reasonably accurate for this park.

Number in Camping Party

Of the camping cards sampled for 1981 and 1982, camping parties of two accounted for 47 percent of all camping parties (including group camping). The following table breaks down the sample by number in party, year, and percent of occurrence.

TABLE 14. Size of camping party

Number in Party	Occurrence in 1981 Sample	Occurrence in 1982 Sample	Percent of Total Camping Parties*
1	9	6	6
2	71	53	47
3	18	18	14
4	27	13	15
5	12	8	8
more than 5	16	11	10

* Data compiled from camper cards combined for 1981 - 1982

Camping Vehicles

The following is a summary of the random sampling of camper cards for the type of camping vehicles used by park visitors.

TABLE 15. Camping vehicle summary for camper card sample

	Camping Vehicle Type	1981* Total	1981* %	1982 Total	1982 %
	not recorded	120	79	3	3
1	tent	23	15	74	68
2	pop-up trailer	3	2	15	14
3	trailer	1	.5	7	6
4	truck camper	1	.5	6	5.5
5	small recreation vehicle	4	2.5	1	1
6	large recreation vehicle	0	0	3	2.5
7	bike	1	.5	0	0
	sample size	153	100	109	100

NOTE: * Data was not available prior to August 1981.

Camping Season

Daily record for park attendance and activities, including camping, are recorded by the park staff. The following information was taken from that data and includes the total number of camping occasions which occurred in the park.

The chart below shows the total number and percent, by month, of camping occasions in Carley from 1982 through 1984.

TABLE 16. Camping visitation by month

Month	Total Visitation for 3 year Period	Percent by Month
April	58	1.5
May	764	18
June	977	23
July	1,395	33
August	640	15
September	308	7.5
October	88	2
	4,230	100

Eighty-eight percent of the camper occasions occurring in the park from 1982 through 1984 occurred on weekends and holidays. It has been estimated by park staff and supervisor that approximately 50 percent of Carley's weekend/holiday camping results as overflow from the full campgrounds at Whitewater State Park 12 miles southeast.

There are a total of 20 vehicular campsites in Carley State Park. The campground was full or above capacity a total of 18 times during the 1982-1984 camping seasons of Labor Day through Memorial Day weekends. During that same period nearly all of the 60 occasions where the campground was half or more full occurred on weekends or holidays. The following table documents the number of times the campground was over 50 percent full each year from 1982 to 1984.

TABLE 17. Times vehicular campground had 50 percent occupancy or greater

Year	20 Sites Full	15 - 19 Sites Full	10 - 14 Sites Full	Total
1984	7	11	3	21
1983	1	8	5	14
1982	10	7	9	26

Classification

THE STATE RECREATION SYSTEM

Minnesotans are fortunate to live in a state with such a wide variety of natural, scenic, and historic resources. To ensure public access and to prevent inappropriate development, the state has set aside lands which exemplify outstanding resources. It is the management goal for all state recreational lands, including state parks, to protect and perpetuate resources for use by the citizens of Minnesota.

There is a delicate balance which must be maintained when recreational facilities are provided for large numbers of people in areas of outstanding and often sensitive resources. Inappropriate development can result in irreparable damage to the resource. To help ensure a recreation/resource balance, the Minnesota State Legislature established, through the Outdoor Recreation Act (ORA) of 1975, a classification process. Each unit shall be authorized, established, and administered to accomplish the purpose and objectives of its classification. These units are: natural state park; recreational state park; state trail; state scientific and natural area; state wilderness area; state forest and state forest sub-area; state wildlife management area; state water access site; state wild, scenic, and recreational rivers; state historic site; state rest area, and additional parks.

Through this classification system, the role for each recreational unit in the state system is identified. The two primary classifications for state parks are natural and recreational. These two, along with other classifications, are considered during the planning process. The most appropriate is recommended for the park.

If a state park does not meet the criteria for any of the first eleven ORA units, Minn. Statute 86A.05, Subd. 2 through 12, the unit will be evaluated for its ability to meet Minn. Statute 86A.5, Subd.13, a 1984 revision to the ORA.

Minn. Statute 86A.5, Subd. 13 reads as follows:

> Subd. 13. Additional parks; administration. All other state parks which, though not meeting the resource and site qualifications contained in subdivisions 2 and 3, were in existence on January 1, 1984, shall be administered by the commissioner of natural resources as units of the outdoor recreation system.

The LANDSCAPE REGION SYSTEM

The landscape region system divides the state into 18 regions. These regions are differentiated according to the characteristic plant and animal life, landforms, and cultural patterns which existed before, during, and after European settlement. The landscape region system is a framework which provides information valuable in the planning of Minnesota's state parks.

Carley State Park is located in the Southern Oak Barrens Landscape Region (see the Landscape Region Map, p. 37). This region is a broad transition zone between prairie to the west and deciduous forest to the north and east. This region extends from the Twin Cities to the Iowa border covering approximately 9,500 square miles or 7% of the state.

The original vegetation of this area at the time just prior to European settlement was dominated by prairie with occasional groves and scattered individual trees. This land was very attractive to European's for agricultural uses. Today the original vegetation has been extensively converted to cropland.

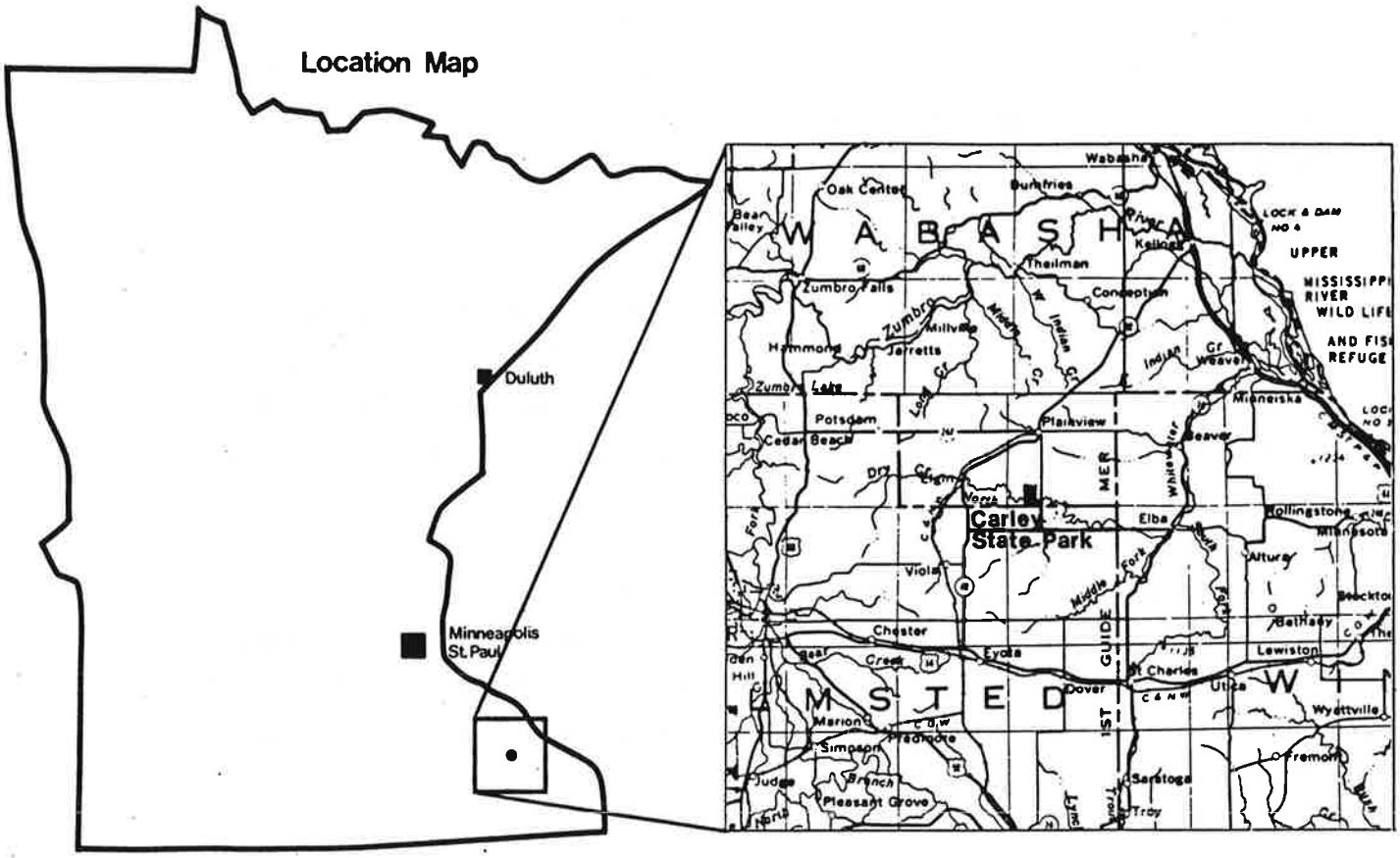
Carley State Park is located in a narrow river valley which dissects the flat uplands. It is also located on the eastern edge of the Southern Oak Barrens Landscape Region near the Blufflands Landscape Region which is extensively dissected by tributaries of the Mississippi River. Carly State Park does not contain areas of flat prairie upland which are the dominant feature of its Landscape Region. It does contain some characteristics of big woods and river bottom forests which do exemplify the Blufflands Landscape Region, but they are small in size.

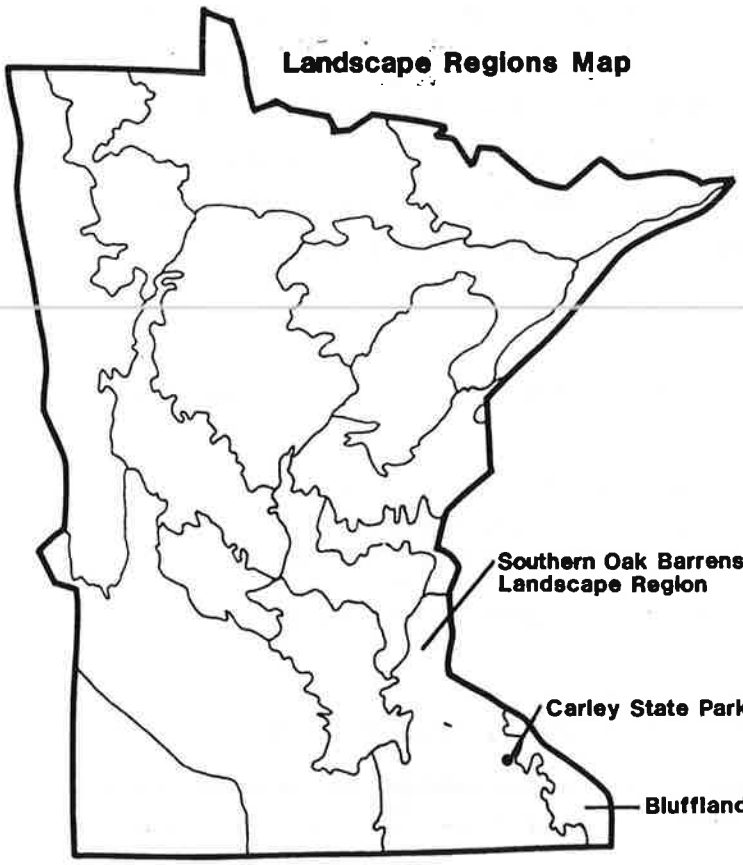
CLASSIFICATION PROCESS AND JUSTIFICATION

The purpose of the classification process as stated in ORA '75 is to establish

> ".....an outdoor recreation system which will (1) preserve an accurate representation of Minnesota's natural and historic heritage for public understanding and enjoyment and (2) provide an adequate supply of scenic, accessible and usable lands and waters to accommodate the outdoor recreation needs of Minnesota's citizens."

In keeping with the legislative mandate of the Outdoor Recreation Act of 1975, policy has been formulated for all units in the state recreation system. Each unit is managed and developed according to the nature of its natural resources and their ability to tolerate visitor use. Carley was evaluated for its





The Southern Oak Barrens Landscape Region extends from the Twin Cities to the Iowa border and covers approximately 9,500 square miles or 7% of the state. This region is a broad transition zone between prairie to the west and deciduous forests to the north and east. It is dominated by prairie vegetation with occasional groves and scattered individual trees, an ecological type known as Savanna.

ability to meet each of the ORA unit types. The most appropriate classification alternatives considered for Carley State Park were natural and recreational state park and additional parks.

Natural State Park Criteria

The policy for all natural state parks, formulated by the Department of Natural Resources, includes the following goal to:

> "Protect and perpetuate extensive areas of the state possessing those resources which illustrate and exemplify Minnesota's natural phenomena and to provide for the use, enjoyment, and understanding of such resources without impairment for the enjoyment and recreation of future generations."

The policy requires that all natural state parks meet, or have the potential to meet, the following criteria."

> Criterion 1 "Depict most of the major components characteristic of the landscape region, or contain a natural component(s) of statewide significance representing a feature of the presettlement Minnesota."

Carley State Park is located in the Southern Oak Barrens Landscape Region. This park does not contain components which are representative of that Landscape Region and does not contain a land base suitable for restoration to establish representative components.

This park is not known to contain natural components which represent a pre-settlement feature of statewide significance, nor does it contain essentially unspoiled natural resources of sufficient extent to illustrate the state's natural phenomena.

> Criterion 2 "Contains natural resources, sufficiently diverse and interesting to attract people from throughout the state;"

Although the park has an attractive natural setting, visual separation from the surrounding lands and recreational opportunities which do allow appreciation of the park's natural features; it does not contain an adequate land base or highly interesting resources which, on their own, can attract people from throughout the state.

The Whitewater Valley area does contain diverse and interesting natural resources which can and do attract large numbers of people from throughout the state. Many of the people attracted to the Whitewater area use both Whitewater and Carley state parks for camping and day use.

> Criterion 3 "Be sufficiently large to provide for the maintenance of ecosystems and the protection of other natural features which give an area its special qualities."

This 211 acre park is sufficiently large to permit protection of the existing plant and animal life and other natural resources which give the park its qualities.

> Criterion 4 "Be sufficiently large and durable so as to provide opportunities for enjoyment of their special natural qualities by significant numbers of people now and in the future."

Recommended relocation of some existing recreational facilities and proposed new developments will be located in areas of the park which can withstand the existing and anticipated use. The steep hillsides and wet floodplain soils are sensitive to intensive recreational use. Recreational development in these areas has either been avoided, modified or is being designed to accommodate use.

This park currently receives low recreational use when compared to other state parks. It is not of sufficient size to substantially increase current use and continue to protect the resources.

Recreational State Park Criteria

The policy for all recreational state parks, formulated by the Department of Natural Resources, includes the following goal to:

> "Provide land which offer a broad selection of outdoor recreational opportunities in a natural setting and which may be used by large numbers of people."

It is the objective of the Department of Natural Resources to ensure that proposed recreational state parks meet, or have the potential to meet, the following criteria.

Criterion 1 "Possess natural resources, or artificial resources in a natural setting, with outstanding outdoor recreation potential."

This park currently provides vehicular camping, group camping, hiking, sliding, cross-country skiing and very limited fishing opportunities. It has the potential to add interpretive facilities. Even with proposed improvements, this park does not have outstanding outdoor recreation potential when considered on a statewide scale.

Criterion 2 "Provide outstanding outdoor recreational opportunities that will attract visitors from beyond the local area."

Although 73% of the camping parties sampled (See Discussion, p.29) came from over 25 miles away from the park, compared with visitation at other state parks, the total number of campers choosing to come to Carley is very small. An average of 1,879 campers stayed at Carley each year between 1974 and 1983. It has been estimated that up to 50 percent of the weekend camping at Carley is the result of overflow at Whitewater State Park 12 miles to the southeast. The natural and recreational qualities which Carley does have are not sufficient in quality or extent to attract people from throughout the state.

Criterion 3 "Contains resources which permit intensive recreational use by large numbers of people and be of a size sufficient to provide for effective management and protection of the natural and/or artificial outdoor recreational resources, so that they will be available for both present and future generations."

This park is not of sufficient size to substantially increase current use and continue to protect the natural resources without substantial hardening of all camping, picnicking, and trail surfaces. The park's steep slopes are subject to erosion and the wet floodplain soils are subject to compaction. Both conditions damage vegetative cover, reduce the attractiveness of the area and reduce user satisfaction.

Criterion 4 "Be located in areas where they effectively accommodate the outdoor recreational needs of the state population, provided that they complement but are not in place of recreational services normally offered by local units of government and the private sector."

SCORP '79 recommends that more bicycling, swimming, tennis and picnicking facilities should be provided in Economic Development Region 10 and that these tasks should be the primary responsibility of local units of government. SCORP '79 recommends that all recreation providers should provide more camping, hiking, fishing, boating, snowmobiling and cross-country skiing facilities.

An excellent supply of camping, picnicking, snowmobiling and hiking opportunities exist in Minnesota within a 25 mile radius of the park. However, Wabasha County does not own or maintain any such facilities within its jurisdiction.

Carley State Park may be meeting the needs of Wabasha County residents in lieu of a county park, however, the physical location of Carley is approximately 18-25 miles away from Wabasha's main population area located along the Mississippi River.

RECOMMENDED CLASSIFICATION

Based on the ORA, Carley does not meet the criteria for the recreational or natural state park classification, however it does meet the criteria for "additional parks".

Based on the ORA, additional parks criteria this park should continue to be operated for recreational purposes as a state park. If, at a future date, another unit of government is identified and willing to operate the park for recreational purposes, transferring the park to them should be considered. A reversionary clause, to the state, would be placed on the land to ensure protection of resource and recreational uses.

Administration

Until a more appropriate administrative directive is written for this park, it shall be the same as for a recreational state park as stated in the Outdoor Recreation Act of 1975:

> "Recreational state parks shall be administered by the commissioner of natural resources in a manner which is consistent with the purpose of this subdivision primarily to provide as

broad a selection of opportunities for outdoor recreation as is consistent with maintaining a pleasing natural environment. Scenic, historic, scientific, scarce, or disappearing resources within recreational state parks shall be recommended for classification as historic sites or scientific and natural areas pursuant to ORA '75. Physical development shall enhance and promote the use and enjoyment of the natural recreational resources of the area."

A new administrative directive for Carley State Park should be written to include opportunities for joint management and development of the park by state and local units of government and private non-profit organizations. Construction of additional facilities (as proposed in this plan or others as approved) could be funded by local units of government or donated by the private sector. Designated operational tasks could be funded through a local unit of government to expand the scope of service which this park could provide to area residents. Expansion of this park's facilities and recreational land base should be shared by the state and local units of government whenever possible.

Examples of additional facilities which could be funded by the local units of government: picnic shelter w/electricity, new play equipment, interpretive program, vault toilets and grant-in-aid trails in surrounding area.

GOAL FOR THE PARK

Carley State Park shall be managed to provide an alternative to highly developed vehicular campgrounds and continue to provide a broad selection of outdoor recreation opportunities in a natural setting for a limited number of people.

Management

Carley should be managed as a satellite to Whitewater State Park. Recreation facilities provided at Carley should complement those at Whitewater State Park and the highly developed campgrounds provided by the private sector. Carley does not contain the land necessary for development of large picnic grounds or a highly developed vehicular campground which could be comparable to those provided at Whitewater State Park. Although it is estimated that approximately 50 percent of the campers at Carley are overflow from Whitewater, the other 50 percent choose Carley specifically for its existing character. It is proposed that Carley be developed and managed to improve the facilities and services offered, but maintain the less developed, less crowded character which the park now has.

Development and management of Carley as a satellite to Whitewater and providing complementary opportunities will increase the diversity of recreational experiences and expand the opportunities for good camping experiences in the Whitewater Valley. Whenever possible, recreation and resource management programs should be integrated with those of Whitewater State Park and other state managed lands or programs which exist in the area.

Park Resources

GEOLOGY

Carley State Park is located in a region of the state where the bedrock was formed during the Ordovician Period of the Paleozoic Era. During Ordovician times shallow seas covered almost all of Minnesota, but only in the southeast and a small area in the northwest do rocks remain from this period (Bray 1977).

The most recent glacial activity in Wabasha County was the Iowan glaciation occurring about 24,000 years ago. The Cary Keewatin, Cary Patrician, and Mankato substages of the Wisconsin glaciation occurred about 12,000 to 15,000 years ago and the terraces along the Whitewater River and its tributaries were formed from deposits left by the melt waters of these retreating glaciers.

The majority of Wabasha County including the area of Carley State Park is covered by fine windblown dust (loess) transported from outwash or alluvial plains. Numerous outcrops of sedimentary rocks of the early Paleozoic Era occur in the southeastern part of Minnesota. In the park, there are exposures of Platteville Limestone and St. Peter Sandstone along the North Fork Whitewater River (Bray 1977).

SOILS

Carley State Park is located within the Fayette-Dubuque soil association. This association is comprised mainly of gently sloping to moderately steep soils on narrow upland ridges (USDA, 1965).

Approximately one-third of the park has slopes of 12 percent or greater. These steep slopes have moderately-severe to severe potential for future erosion. Through maintenance of a perennial vegetative or tree cover and proper facility development techniques, future erosion of these soils can be minimal.

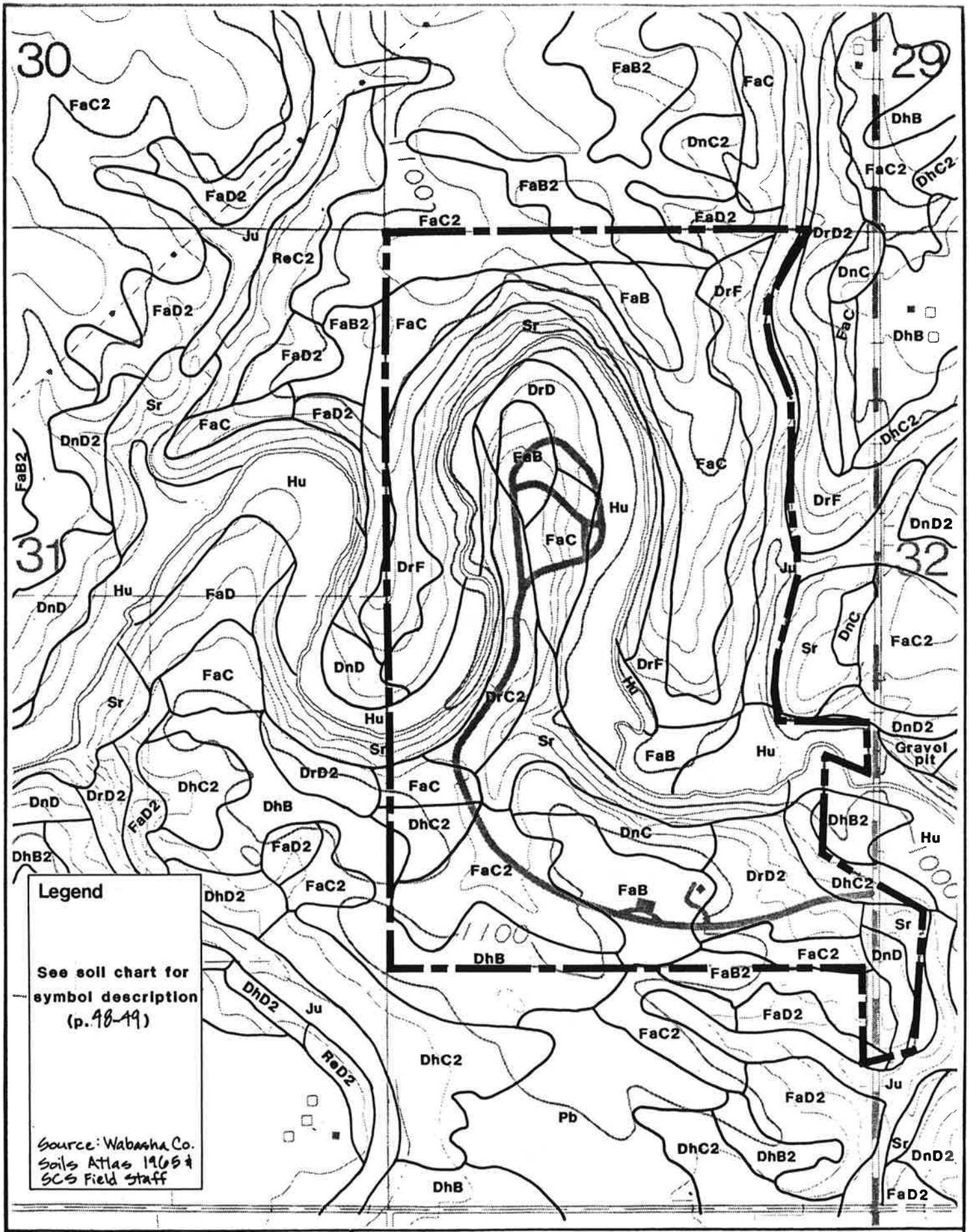
Of the lands immediately surrounding the park, as shown on the Soils Map (p. 50), approximately half of the soils have lost between 2 and 10 inches of their original surface layer through erosion. Less than a quarter of the park's soils have lost 2 to 10 inches of their original surface layer through erosion.

Two soil series found in the park, Eitzen and Huntsville, are deep, well to moderately well drained soils formed in silty alluvium. These two soils developed in alluvium washed from soils at higher positions in the uplands.

SOILS CHART

Soil Type	Map Code	Slope	Recreation Development: Picnic Area	Recreation Development: Camp Area	Recreation Development: Path & Trail	Sanitary Facilities: Sewage Lagoon	Sanitary Facilities: Septic Tk. Filter Fld.	Building Site Development: Roads	Building Site Development: Shallow Excavations	Building Site Development: Recreation Buildings	Erosion	Flooding	Depth to Water Table
Dunbarton	DrC2	6-12% Mod Eroded	Severe -Depth to rock	Severe -Depth to rock	Severe -Erodes easily	Severe -Depth to rock -Slope	Severe -Depth to rock	Severe -Low strength -Shrink swell	Severe -Depth to rock	Severe -Shrink swell	Moderate	None	Greater than 6 ft 1-2 ft to bedrock
	Dr D	12-18%	Severe -Slope -Depth to rock	Severe -Slope -Depth to rock	Severe -Erodes easily	Severe -Depth to rock -Slope	Severe -Depth to rock -Slope	Severe -Low strength -Slope -Shrink swell	Severe -Depth to rock -Slope	Severe -Shrink swell -Slope	Moderately severe	None	Greater than 6 ft 1-2 ft to bedrock
	DrD2	12-18% Mod Erosion	Severe -Slope -Depth to rock	Severe -Slope -Depth to rock	Severe -Erodes easily	Severe -Depth to rock -Slope	Severe -Depth to rock -Slope	Severe -Low strength -Slope -Shrink swell	Severe -Depth to rock -Slope	Severe -Shrink swell -Slope	Moderately severe	None	Greater than 6 ft 1-2 ft to bedrock
	Dr F	25-35%	Severe -Slope -Depth to rock	Severe -Slope -Depth to rock	Severe -Slope -Erodes easily	Severe -Depth to rock -Slope	Severe -Depth to rock -Slope	Severe -Low strength -Slope -Shrink swell	Severe -Depth to rock -Slope	Severe -Shrink swell -Slope	Severe	None	Greater than 6 ft 1-2 ft to bedrock
Dubuque	DnC DnC2	6-12%	Slight to moderate -Slope	Slight to moderate -Slope	Slight	Severe -Depth to rock -Slope	Severe -Depth to rock	Severe -Low strength -Frost action	Severe -Depth to rock	Moderate -Shrink swell -Slope -Depth to rock	Moderate	None	Greater than 6 ft 2-3 ft to bedrock
	Dn D DA D2	12-18%	Severe -Slope	Severe -Slope	Severe -Erodes easily	Severe -Depth to rock -Slope	Severe -Depth to rock -Slope	Severe -Low strength -Slope -Frost action	Severe -Depth to rock -Slope	Severe -Slope	Moderately severe	None	Greater than 6 ft 2-3 ft to bedrock
Eitzen	Ju	1-3%	Slight	Severe -Flooding	Slight	Severe -Flooding	Severe -Flooding	Severe -Low strength -Flooding -Frost action	Moderate -Flooding	Severe -Flooding	Slight	Occasional -Very brief (April-Nov.)	Greater than 6 ft
Huntsville	Hu	0-6%	Rare,Occas: Slight Common: Moderate -Flooding	Severe -Flooding	Rare,Occas: Slight Common: Moderate -Flooding	Rare: Moderate -Slope -Seepage Common: Severe -Flooding	Rare: Moderate -Flooding -Percs slowly Common: Severe -Flooding	Rare: Severe -Low strength -Frost action Common: Severe -Low strength -Flooding -Frost action	Rare: Slight Common: Moderate -Flooding	Severe -Flooding	Slight	Rare-common Very brief to brief (Jan-June)	Greater than 6 ft

Soil Type	Map Code	Slope	Recreation Development: Picnic Area	Recreation Development: Camp Area	Recreation Development: Path & Trail	Sanitary Facilities: Sewage Lagoon	Sanitary Facilities: Septic Tk. Filter Fld.	Building Site Development: Roads	Building Site Development: Shallow Excavations	Building Site Development: Recreation Buildings	Erosion	Flooding	Depth to Water Table
LaCrescent	Sr	12-15%	Moderate -Slope -Small stones -Large stones	Moderate -Slope -Small stones -Large stones	Slight to Moderate -Large stones	Severe -Seepage -Slope	Moderate -Depth to rock -Percs slowly -Slope	Moderate -Slope -Frost action -Large stones	Moderate -Depth to rock -Large stones -Slope	Moderate -Slope -Large stones	Moderate	None	Greater than 6 ft (3.5 ft to bedrock)
		15+ %	Severe -Slope	Severe -Slope	Moderate to Severe -Large stones -Slope	Severe -Seepage -Slope	Severe -Slope	Severe -Slope	Severe -Slope	Severe -Slope	Moderate	None	Greater than 6 ft (3.5 ft to bedrock)
Mt. Carroll	DhB	2-6%	Slight	Slight	Slight	Moderate -Seepage -Slope	Slight	Severe -Low strength -Frost action	Slight	Slight	Slight	None	Greater than 6 ft
	DhB2	2-6% Mod Eroded	Slight	Slight	Slight	Moderate -Seepage -Slope	Slight	Severe -Low strength -Frost action	Slight	Slight	Slight to moderate	None	Greater than 6 ft
	DhC2	6-12% Mod Eroded	Moderate -Slope	Moderate -Slope	Slight	Severe -Slope	Moderate -Slope	Severe -Low strength -Frost action	Moderate -Slope	Moderate -Slope	Moderate	None	Greater than 6 ft
	DhD2	12-18% Mod Eroded	Severe -Slope	Severe -Slope	Moderate -Slope	Severe -Slope	Severe -Slope	Severe -Low strength -Slope -Frost action	Severe -Slope	Severe -Slope	Severe	None	Greater than 6 ft
Port Byron	PbB	2-6%	Slight	Slight	Slight	Moderate -Seepage -Slope	Slight	Severe -Low strength -Frost action	Slight	Slight	Slight	None	Greater than 6 ft
Renova	ReC2	6-12% Mod Eroded	Moderate -Slope	Moderate -Slope	Slight	Severe -Slope	Moderate -Percs slowly -Slope	Moderate -Slope -Frost action	Moderate -Slope	Moderate -Slope	Moderate	None	Greater than 6 ft
Fayette	FaB FaB2	2-6%	Slight	Slight	Slight	Moderate -Seepage -Slope	Moderate -Percs slowly	Severe -Low strength -Frost action	Slight	Slight	Slight	None	Greater than 6 ft
	FaC FaC2	6-12%	Moderate -Slope	Moderate -Slope	Severe -Erodes easily	Severe -Slope	Moderate -Percs slowly -Slope	Severe -Low strength -Frost action	Moderate -Slope	Moderate -Slope	Moderate	None	Greater than 6 ft
	FaD FaD2	12-18%	Severe -Slope	Severe -Slope	Severe -Erodes easily	Severe -Slope	Severe -Slope	Severe -Low strength -Slope -Frost action	Severe -Slope	Severe -Slope	Moderately severe	None	Greater than 6 ft



Carley State Park

Soils

Eitzen soils are located in upland drainage ways and Huntsville soils are located in floodplains.

The majority of soil series in and around the park were formed on loess (relatively uniform, silty material deposited to its present location by wind) on uplands and side slopes. These soils include; Dunbarton (Dr), Dubuque (Dn), La Crescent (Sr), Mt. Carroll (Dn), Port Byron (Pb) and Seaton (Fa).

The La Crescent (Sr) soil series is cobbley, having rounded stones from 3-10 inches in size covering over 15 percent of the surface layer. There are also many outcrops of solid limestone and sandstone bedrock on these soils. This, combined with steep slopes, usually greater than 30 percent and a moderate potential for future erosion makes this soil unsuitable for all developments except trails. Development of trails on this soil type will require special use and design considerations. Removal of large stones may be required for some trail uses.

Dunbarton (Dr) and Dubuque (Dn) soils have varying amounts of limestone or chert fragments and occasional bedrock outcrops occurring on their surface. These create both construction obstacles and scenic points of interest within the park.

The Huntsville (Hu) soil is considered a floodplain soil with low to common frequency for flooding. Of primary concern for rivers in the southeast region of the state is the velocity of water movement and their potential damage to property and life. Overnight campsites and permanent structures should not be located on this soil type. For additional discussion about floodplain management (see Surface Waters, p.59).

VEGETATION

At the time of European settlement, this area was a mixture of bottomland hardwoods, big woods, oak savanna, and dry prairie. Bottomland forests were found in the flat, moist floodplains along streams and rivers. Both oak savanna and big woods were found on the steep valley walls. Oak savanna occurred most frequently on the dryer sites with south and west exposure. The gently rolling uplands were primarily prairie grasses.

European settlement brought dramatic changes to the vegetation of this portion of the state. The prairies were plowed up for agricultural croplands, the steep slopes were cut for timber and much of the bottom lands were cleared for pasture and croplands. Soil erosion and increased surface water run-off caused damage to many farms and towns located in the Whitewater Valley during the early 1900's. The vegetation which exists today is in part a result of natural succession which has occurred on the lands which were disturbed by agricultural uses. In some areas remnants of the original vegetation received comparatively little disturbance from white settlement. Protected or endangered vegetation species may occur in Carley.

Relict Pine Stands

Relict white pine stands do occur in Carley State Park. Southeastern Minnesota has not been fully inventoried or assessed to determine the uniqueness or importance of relict pine stands within the state.

In 1962, T. Hartley of Iowa State University conducted a study of the driftless areas of northeastern Iowa, southeastern Minnesota, southwestern Wisconsin and northwestern Illinois. Within this region, white pine were generally identified to be the dominant woody plant on moist, sandy wooded slopes. Slopes of this type were identified to occur mainly in the northeastern part of the "Driftless Area" (Hartley, 1962). This report suggests that relic white pine stands may be found more frequently in Wisconsin than in the other states.

It is known that all pine germinate best on mineral soils, but not in areas of repeated flooding. All grow rapidly and none are shade tolerant (Curtis, 1958). Ultimately heights of 200 feet are common and ages of 500 years or more are easily possible. Curtis documented that relict stands of pine are found on rocky cliffs in many places in the Driftless Area. Typically these pine communities occur on sites which have 40 degree slopes or greater and are on sandstone rocks of Cambrian or Ordovician age. The most common sites are water worn cliffs which still have the undercutting stream present at or near the base of the slope. Although white pine is the most important species in this community others do exist (Curtis 1958).

The herbs and shrubs found in the relict pine community closely resembles those of the northern pine forests, although only a few northern species are found in any one relict stand. Within the Driftless Area, relict pine communities

typically range from 1/4 to 5 acres in size. The distance separating these communities reduces the natural ability of individual species to migrate from stand to stand (Curtis, 1958).

There are no indications that the relict pine stands are retreating or becoming more abundant (Curtis 1958). Field observations suggest that in moderately wet sites pine would succeed to red oak and then to maple-basswood (Cahayla-Wynne, 1978), however soil conditions, moisture, natural and human disturbances all affect the condition of the relict pine stand.

Existing Vegetation

Carley State Park contains both remnants of the areas pre-settlement vegetation and lands which were at one time cultivated and pastured. The following description of the park's vegetation was prepared using 1938 and 1971 9x9 black and white aerial photographs, the 1984 Forestry Phase II inventory, and field checking by Division of Parks and Recreation regional resource staff. The species list included here are representative partial lists compiled in fall of 1984 while field checking the vegetation types.

Map Codes	Description
OF/P	Old field with boxelder and pine plantation inclusions.

This area was formerly cultivated fields or other disturbed areas which are now characterized by a ground cover of brome grass, blue grass, and a variety of wildflowers and is being invaded by boxelder, sumac, and hawthorn. This area has been randomly planted with white pine seedlings since the 1950's. The age class of these pine appear to be well-mixed throughout with fewer pine planted near the park entrance.

Ground Layer
brome grass
blue grass
New England aster
goldenrod
bergomont
wild parsnip
giant St. John's wort
yarrow

BO

Bur Oak.
This vegetation type is dominated by bur oak mixed with cherry, basswood, and hickory. The shrub layer is dominated by European buckthorn. Buckthorn (Rhamnus cathartica) is a potentially serious management problem. Its vigorous growth can displace the desirable native species from the understory and prevent the natural regeneration of existing hardwood species.

NH

Northern hardwoods.
This vegetation type is primarily a closed canopy of red oak, basswood, elm, ironwood, sugar maple and hackberry. Areas of this designation are primarily found on steep slopes. In the park, this community is supporting a natural regeneration of white pine on steep northwest facing slopes. The white pine range from seedlings of a few inches to taller than 20 feet.

In this vegetation type, maple are the primary tree species found toward the bottom of the slope. Bur oak, basswood and maple dominate the steep slopes and walnut and white pine are found more frequently toward the top and crest of the slope. The crest of the slope has denser stands of ribes, hickory, birch and buckthorn than is found on the steep slopes. Wild ginger was the primary forb identified on the slopes. The existence of several tree stumps suggests cutting occurred along the crest of the southeast slope of this vegetation type.

Canopy	Understory
red oak	ribies
black cherry	buckthorn
birch	ironwood
elm	pagoda dogwood
ash	wild plum
hickory	
basswood	
sugar maple	
bur oak	
white pine	

Ground Layer
wild ginger
anemony
hepatica
bedstraw
woodland aster
carrion
wood betony
woodland violets
Virginia waterleaf

CH

Central hardwoods.
This vegetation type contains many mature sugar maple, red and white oak, basswood and scattered old growth native white pine. Additional canopy and midstory species include; black cherry, hackberry, ironwood, hickory, and bur oak. Numerous maple seedlings are found in the ground and shrub layers.

Canopy	Midstory/shrub layer
white oak	ironwood
red oak	hickory
birch	hawthorn
cottonwood	alternate leaf dogwood
big tooth aspen	boxelder
white pine	ribies
elm	buckthorn
ash	spreading yew
walnut	maple seedlings
black cherry	highbush cranberry
	honeysuckle

Ground Layer	
bottle brush grass	Virginia waterle[illegible]
allium	woodland goldenrod
Jacobs ladder	poison ivy
false Soloman seal	hepatica
woodland violets	jack-in-the-pulpit
asters	maiden hair fern
bedstraw	woodland rue anemony
wild ginger	rose sp.
Dutchman's britches	blue cohosh
false lilly of the valley	spring beauty

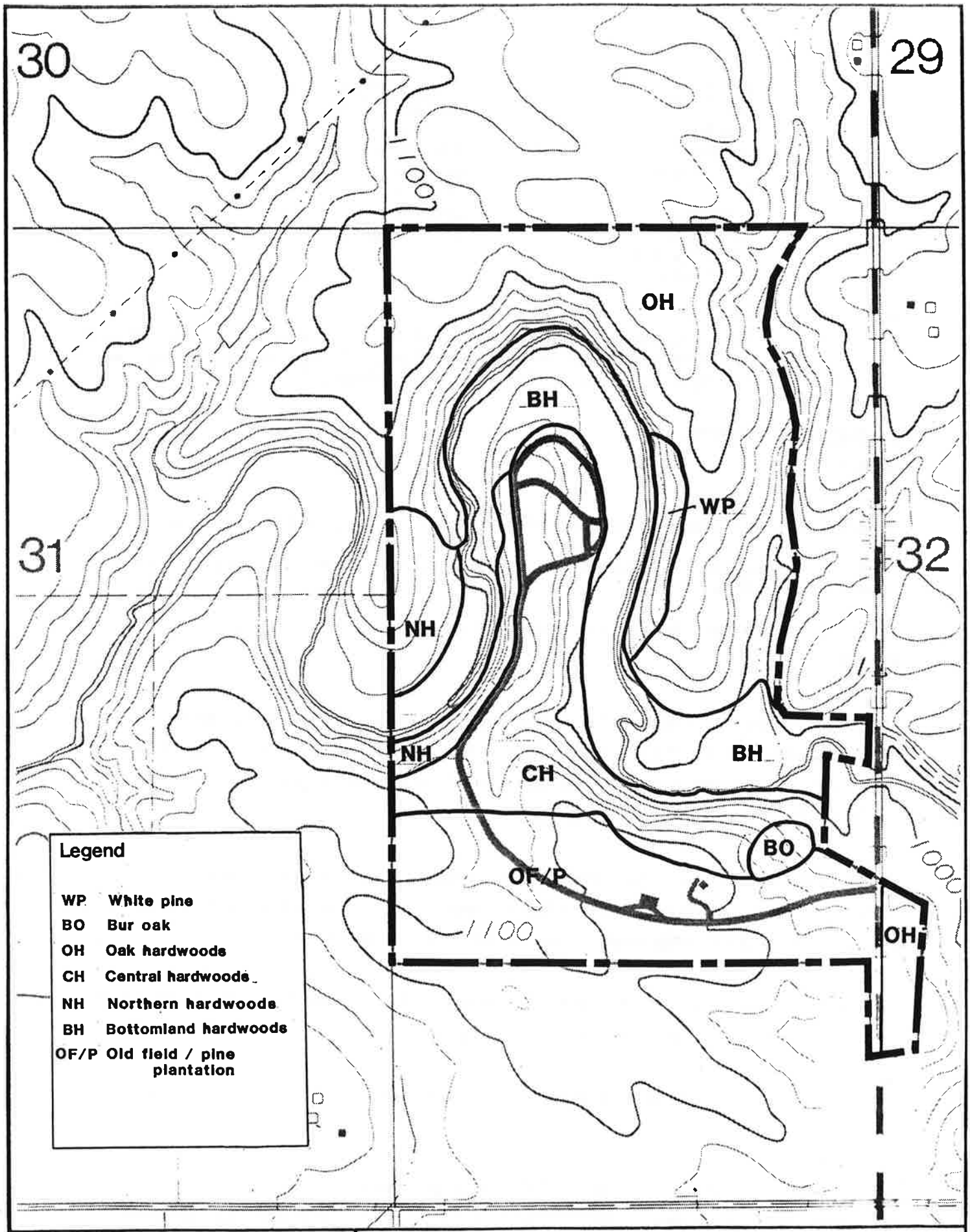
BH

Bottomland hardwood.
The canopy of this community is very open with trunks of large dead elm and cottonwood still standing in the openings. Boxelder, walnut, and basswood dominate the canopy. Planted silver maple approximately 20 ft. tall are found in this community. The area north of the campground is known to be rich in spring flora.

Canopy	Ground cover
boxelder	nettles
willow	leeks
walnut	allium
bur oak	goldenrod
green ash	cup plant
cottonwood	wild parsnip
basswood	bergomont
black cherry	asters
	false Solomon seal
	bottle brush grass
	blue cohosh
	ribes
	wild geranium

OH

Oak hardwoods
This type occurs predominately on dry, south and west facing slopes and ravines. Considerable differences of species composition occur within this stand. This community is dominated by oak, maple and basswood.



Carley State Park

Existing Vegetation

Shrub Layer	Ground Layer
hazel	Jacobs ladder
ninebark	thimble weed
trumpet honeysuckle	New England aster
gray dogwood	goldenrod species
bittersweet	fall aster
cratageus	bedstraw
gooseberry	grass leaved milkweed
prickley ash	
buckthorn	

WP White pine.
This vegetation type is dominated by large white pine with only a few pine seedlings in the understory. It occurs on a steep, west facing slope (see Relict Pine Stand discussion, p.52).

Vegetation Management

Objectives:

To protect significant or unusual plant communities and individual species.

To establish vegetative management programs which protect the native white pine stands in the park.

Action #1. Monitor the age and condition of the park's native white pine stands.

The significance of these relict pine stands on a statewide basis has not yet been determined. If they are identified by the DNR, Natural Heritage Program as a special concern plant community then all management programs should be reviewed by their staff prior to implementation.

If the condition of a mature relict pine stand with no natural regeneration should occur in the park, the following techniques should be considered to enhance the natural regeneration of white pine in these areas:

1. Selective cutting to open the canopy allowing light to penetrate to the ground for growth of pine seedlings.

2. Minimal scarification of the soil to establish a suitable seed bed.

Wildlife

Carley does not contain any known DNR Heritage elements (letter from DNR Heritage staff, November, 1984). The vegetation and topography of Carley is

similar to much of the lands contained in Whitewater State Park and the Whitewater Wildlife Management Area. The 211 acre, Carley State Park is located in an area where it is entirely surrounded by agricultural and pasture lands. Its small size and distance to large tracts of forested lands and wetlands limits the diversity of the wildlife species which may use the park.

The Whitewater Wildlife Management Area master Plan, 1977-1986 contains lists of birds and mammals which occur or are expected to occur in the vicinity of this WMA. The Guide to the Reptiles and Amphibians of Southeast Minnesota - Region 5, published by the Minnesota DNR, Section of Wildlife, on January 1, 1979 contains lists of 37 species of reptiles and amphibians which exist or are expected to exist in Region 10 (see Economic Development Region Map, p. 17). A total of 20 species were identified in Wabasha County.

Timber rattlesnake occur in southeastern Minnesota along the Mississippi River Valley and its tributaries. They are known to exist in Goodhue, Wabasha, Olmsted, Winona, Fillmore, and Houston counties. This species has not been observed in Carley but could occur. Timber rattlesnakes inhabit deciduous forests, croplands and bottomlands along river valleys during summer months. In the spring and fall, the timber rattlesnake is frequently found on steep, rugged bluffs and rock ledges and outcrops near wintering dens.

In Minnesota the timber rattlesnake is a Special Concern species. The basis for this designation includes: 1) the vulnerability of this species to the systematic and willful destruction by humans; 2) designation may contribute to the protection of other snake species; 3) communal denning sites are vulnerable to destruction. DNR Species Status Sheet 1985 included in Management Plan Details (MPD).

A DNR publication titled Birds of Minnesota's Blufflands State Parks, lists birds which have been seen, or according to local experts are likely to occur within several of the state parks in or near the Blufflands Landscape Region. A total of 155 species are identified to occur within Carley State Park. This list is included in the Management Plan Details (MPD) for this park.

The eastern bluebird is a species which is known to nest in the Blufflands and is known to occur in Carley State Park. The eastern bluebird was once a common inhabitant of the eastern United States. Its abundance has declined since the

early 1900's. Intensive agricultural practices and suburban growth have reduced its available preferred habitat of open areas with scattered trees. The National Audubon's Society has documented its concern to protect the existence of this songbird through conservation efforts by placing it on the "Blue List". Blue birds nest in natural tree cavities, old woodpecker holes, holes in stumps, rail fences and bird boxes 3-20 feet above the ground.

SURFACE WATER

Carley is located along the North Fork Whitewater River. All structures must be located a minimum of 75 ft from the rivers ordinary high water mark to be in compliance with DNR, Division of Waters programs. The North Fork Whitewater River has a watershed of 132 square miles. It is in the larger Whitewater River watershed.

The Whitewater River and its tributaries flow through steep valleys, eroded before, during and after glacial times, directly into the Mississippi River. The North Fork Whitewater River is approximately 23 miles long. From Logan Creek upstream through the state park, the stream averages 13 inches in depth, and 45 feet in width during normal summer flow. In the park the stream has an average width of 16 feet. The stream has an average gradient of 7 ft. per mile in the area of the state park.

In this watershed, groundwater is the primary source of stream flow. Significant fluctuations in stream flow occur during periods of snow melt, intensive rain storms or extended wet or dry periods which would affect the overall storage of groundwater in the watershed. Groundwater seepage is the source of headwaters for the North Fork Whitewater River. The major disadvantages of stream water in this watershed are excessive hardness, siltation and associated turbidity.

In the lower portion of the stream the bank erosion is light to moderate; gully erosion is normal for southeastern Minnesota; and sheet erosion is light because of the lack of row crops. In the vicinity of the state park erosion potential is greater because of nearby pastures and pastured wood lots. Upstream from the park erosion of all types is a serious problem. The North Fork Whitewater River contributes the greatest percentage of dissolved solids to the main stem of the Whitewater River. It also remains turbid after a rain

longer than any other stream in the Whitewater system. This is due to the long length of stream in the agricultural uplands and the large pools with slow water turnover in the lower end of the stream (DNR, Stream Survey, 1977). However, the North Fork Whitewater River has a small sediment yield when compared with the Root River. More intensive farming in the Root River basin may account for the difference in sediment yield (Broussard, 1975).

Analysis of the water quality data for the North Fork, surveyed on July 12, 1976 by the DNR, Section of Fisheries indicates very fertile water; probably due to intensive agricultural use in the upper watershed. Phosphorus and nitrogen levels are high enough to be considered agricultural pollution (DNR, Stream Survey, 1977).

Groundwater

About 60 percent of the municipalities in this watershed obtain at least part of their water supply from the Prairie du Chien - Jordan aquifer at depths of between 150 and 834 feet (Broussard, 1975). Large water supplies are available from the Jordan aquifers, except near the rock outcrops, where it may be dry. Moderate amounts of water are available from the St. Peter sandstone located above the Jordan formation. Groundwater in this watershed is primarily recharged by infiltration of precipitation in upland areas and discharged along the many valley slopes. The greatest amount of water entering the St. Peter formation is through outcrops located at the surface or immediately below the glacial drift (Thiel 1944). Regionally the groundwater moves northeast and slowly downward restricted by layers of rock with low permeability. The downward flow recharges the lower aquifers. Closer to the surface, water flows toward surface streams and seeps to the surface along valley walls.

The St. Peter sandstone is approximately 100 feet thick and consists primarily of medium to fine grained, uniform sandstone with a thin layer of clay at the base. This clay layer retards vertical movement of the water (Broussard 1975). Water in this aquifer is under sufficient artesian pressure to lift many feet above the level at which it is encountered (Theil, 1944).

The shale and limestone, Platteville Formation serve as a comparatively impervious cap over the St. Peter sandstone. It is only a few feet thick and contains very little water.

Surface deposits of loess, fine buff silt and very fine sand are generally thin and do not yield water for wells. Water obtained from the underlying bedrock formations is generally of acceptable quality for domestic uses. The principal disadvantage of groundwater are excessive hardness and resultant carbonate encrustation in water heaters.

In 1964 a 220 ft well was drilled in the vicinity of the picnic area and campground in Carley State Park. This well has a 6" casing to a depth of 195 ft, no screen and a 6" open hole from 195 ft to 220 ft. The well is operated by a hand pump installed on a 6x6 ft reinforced concrete slab.

In 1984, a 364 ft well was drilled in the vicinity of the park residence. This well had a 12" hole with grouted casing to 314 ft, no screen and a 6" open hole from 314 ft to 364 ft. This well is operated by a submersible pump and provides water to the house and service court.

Fisheries

A DNR stream survey was conducted by the Section of Fisheries for the North Fork Whitewater River in 1976 and 1977. The following information is summarized from that survey.

The area upstream from Carley is intensively agricultural. Downstream lands are partially state-owned (wooded and wild); and partially private (wooded and grazed). Agricultural use of lands in the upper watershed is contributing to siltation and pollution downstream (See Surface Water discussion, p.59).

Water temperature is the critical factor in this stream for trout fishery management. The stream as it flows through the rolling uplands having low flow and little or no shade along its banks is identified as a warm water fishery. In the park the stream banks are wooded and provide needed shade to begin reduction of the water temperature. Immediately downstream from the park the stream is relatively unshaded and then becomes shaded again further downstream. The North Branch Whitewater is designated as a trout stream from its mouth upstream through Carley State Park. Active trout stream management by the DNR, Fisheries Section, takes place from the mouth to the confluence with Logan Creek. The portion of stream from the confluence with Logan Creek up through the park is marginal trout habitat; however, it has been designated as a trout stream in order to afford protection to this important transition area. A few

trout are present in this reach. Common fish species present in the transitional portion of the stream are sucker and minnow.

The management classification of "1D, marginal trout" has been designated for the North Fork Whitewater River from Logan Creek upstream through the park and the management classification of "trout" has been designated from Logan Creek downstream to its mouth. The transition portion of this stream was designated as a "trout stream" to allow management for the protection and maintenance of water quality and water temperatures to maintain and enhance the trout fishery downstream.

The DNR, Section of Fisheries should review all development proposals in this park to ensure maximum protection of the stream environment and trout habitat downstream. Construction or plantings which may result in increased siltation in the stream shall not be allowed from October through March. Additional stream siltation can cause damage to trout spawning substrate and can result in damage to reproductive activities of the trout.

Within the watershed and specifically within Carley State Park management efforts should be directed toward protection of shade producing vegetation along the stream banks and modification of land uses adjacent to the stream and its drainage ways, to reduce silt and sediment entering the stream.

Park History

The lands for Carley State Park were given to the State of Minnesota by James A. and Mary C. Carley by two deeds dated November 20, 1948, and by Ernestina, Charles, Alvin, Joseph, and DeLoris Boldt by a deed dated January 8, 1949. These lands were accepted by the Commissioner of Conservation, pursuant to the conditions contained in the deeds.

On April 8, 1949, state law established and dedicated the lands for Carley State Park.

Since its establishment, no changes in the name or statutory boundary have occurred. The park's boundary currently encompasses 211 acres, all of which is in state ownership.

Physical Development and Recreation Management

Existing Development

Picnic Ground

8 tables
gravel parking lot (15 car capacity)
1 unisex vault toilet
playground equipment
1 horseshoe pit

Campground

20 vehicular campsites
4 pit toilets

Group Camp

3 primitive camp areas (total capacity 75)
2 pit toilets
3 fire rings
1 council ring

Trails

gravel parking lot (6 car capacity)
3.5 miles hiking
3 miles cross country skiing

Service Court

parking lot - capacity 5 cars
shop attached to small park residence
1 pit toilet
18' x 22' cold storage shed

Management and Development Philosophy

Although Carley does not meet the Outdoor Recreation Act criteria for either a natural or recreational state park, the following management and development philosophy should be adopted for this unit (see Classification Discussion, p.91). In keeping with the Minnesota State Park System this unit should be managed for two goals. The first is the protection of the natural resources within the recreation system. Without this protection, a resource can be destroyed in an alarmingly short period of time. Thus, protection benefits not only future generations, but present-day users as well. The second goal is maximizing the recreation opportunities available to the user, both in terms of quality and variety. It is the Department of Natural Resources position that every citizen have the opportunity to share in the beauty and recreational potential of Minnesota's natural resources as well as the responsibility for maintaining and preserving them.

Under the direction of these goals, Carley will be managed as a satellite park facility for Whitewater State Park. The small size of Carley and the sensitive character of its resources prohibits developments designed to accommodate large numbers of people for extended periods of time. Recreation facilities provided at Carley should complement those available at Whitewater State Park and the private sector. Wherever possible, recreational and resource management opportunities should be integrated with those of Whitewater State Park and other state managed lands or programs which exist in the area.

Obviously, there are going to be situations where use and preservation conflict. Every attempt will be made to reconcile these conflicts by the use of responsible management and development techniques. When this is not possible, however, the primary concern must be preservation of the resource. To maintain a high quality recreational experience, it may be necessary to limit the number of people using a unit at a given time or to limit certain activities within that unit. When this occurs, an attempt will be made to provide these activities at a nearby unit that has a higher tolerance to use.

Swimming

Swimming was the fifth most desired summer recreation activities desired by the residents of Economic Development Region 10. Most natural beaches within a 25 mile radius of the park are located along the Mississippi and Zumbro rivers, in

addition, within this area several cities and school districts operate pools. Development of a concrete swimming pool in Carley would not be in keeping with the character and physical limitations of Carley. Creating a water impoundment and diverting stream flow or pumping water from a well will require release of warmed water into the stream. This may result in a periodic increase of stream water temperatures resulting in potential damage to the trout stream waters (a study would be required). A swimming facility is not recommended for development in Carley because of the resource damage which would result from development of the facility and adequate parking, displacement of existing users, and potential damage to the remaining park resources as a result of over use.

Picnicking

Action #1. Expand picnic area.

Extend mown area approximately 75 feet to the south and add 15 picnic tables and ten fire rings. The existing picnic ground is very open and has too few facilities to encourage more use. Expanding the area will require removal of some brush, minor leveling of sites, and seeding areas with grass. Clusters of existing shrubs and forbs should be retained within the picnic area to characterize the floodplain forest and to provide screening between sites. Tables and fire rings should be distributed throughout the shaded and open area and several sites should be provided near the creek.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST:	$4,500					$4,500

Action #2. Plant native deciduous trees around parking lot and creek.

The large open field area should be retained and used for free play. Plantings around the parking lot should be located to provide some shade and visual buffer for the vehicles, but not be planted in areas where they may pose a hazard for winter sliders who use the park. Plantings along the creek should enhance the natural character and increase the amount of shading of the stream. Increased shading will help maintain cooler water temperatures, thereby enhancing the trout fishery downstream. The DNR, Section of Fisheries should be contacted prior to any planting. They should review and respond to

potential short term impacts on water quality (also see Fisheries discussion, p.61).

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST:		$9,000		$3,000		$12,000

Action #3. Install a new natural play area for children.

Campers and picnickers both use this facility. A natural looking, creative play area should be built in the area of the existing play equipment. It may be designed to extend into the wooded area on the north.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST:			$5,000			$5,000

Action #4. Allow the donation of a picnic shelter to the park.

A picnic shelter would enhance use of the park for picnicking groups. Electrical outlets could also be provided in the picnic shelter. Whitewater State Park provides two large picnic areas with one shelter. Numerous additional picnic sites are provided with in the shady area by cities and the private sector. At this time we cannot justify the cost of a shelter at Carley, however, a local organization, local unit of government, or the county could donate an approved shelter to the park (See Classification/Discussion, p. 41). All structures located in this park must be a minimum of 75 feet from the river's ordinary high water mark.

No Cost.

Trails

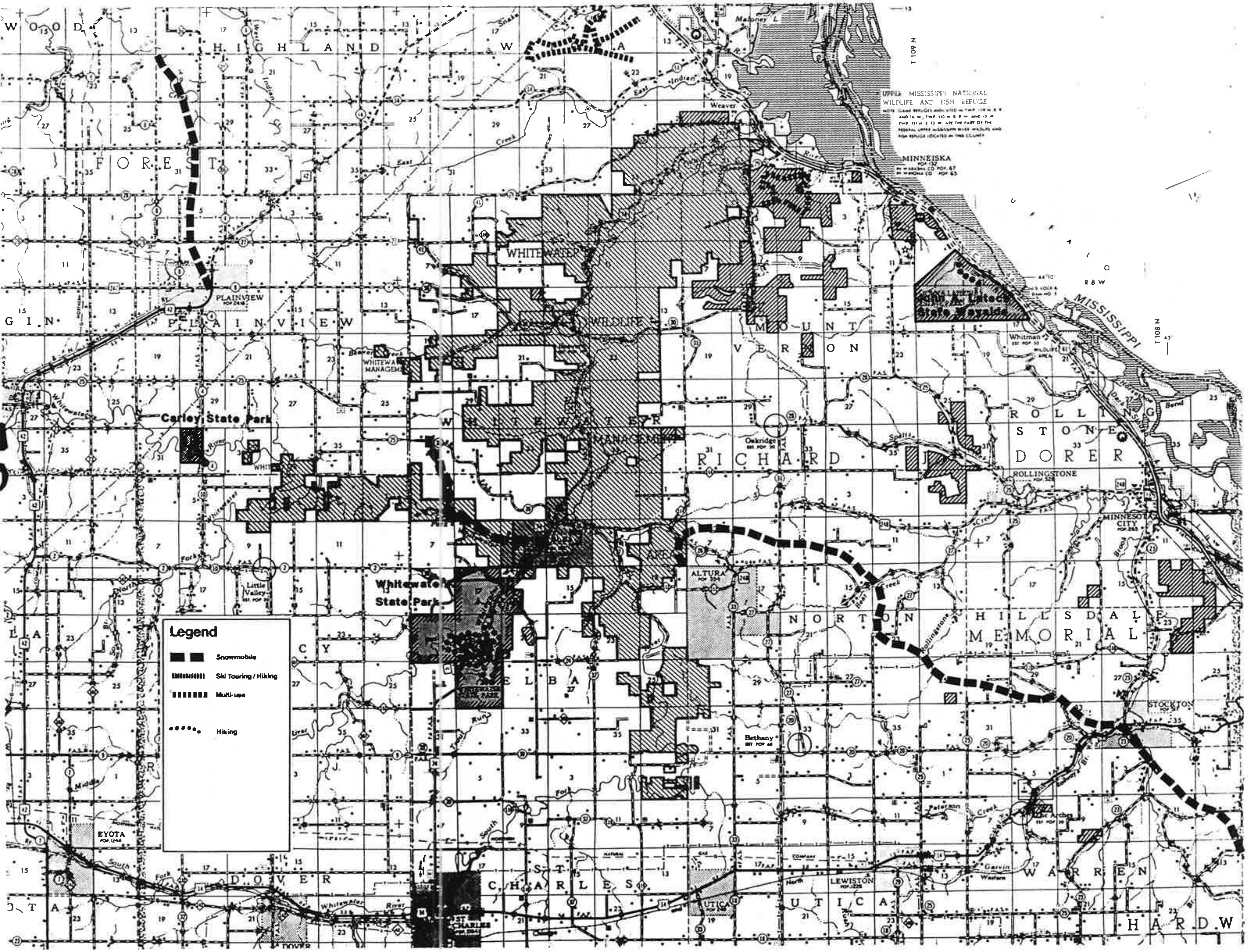
In preparing the Carley management plan, its relationship with other public lands and trails was evaluated. The regional map on page 10 identifies public lands near the park. Carley is located two miles west of a continuous block of public land the Whitewater Wildlife Management Area (WMA). This continuous block of WMA land extends east to the Whitewater State Park boundary and northeast to the Trout Valley Forestry Unit. Specific policy for trail use of WMA's is contained in DNR policy for that unit.

WMA Policy effective April 23, 1982, Section IV, Recreation Management and Development, specific policy states the following:

12. Snowmobiling and horseback riding may only be compatible with the resources of some wildlife management areas. Therefore, the compatibility of these activities -- with the resources, and the purposes for which an individual wildlife management area has been established -- will be considered on a case-by-case basis, at the division director level. Consideration must be given to the following (as well as specific recreation management policies 1, 2, and 3 above):

    a. The projected level of use and its impact

    b. The potential for use of existing roads or right-of-way


Legend
Snowmobile
Ski Touring / Hiking
Multi-use
Hiking
HIGHLAND
FOREST
PLAINVIEW
Plainview
Carley State Park
WHITEWATER
WILDLIFE
MANAGEMENT
Whitewater State Park
ELBA
MOUNT VERNON
RICHARD
Oakridge
ROLLINGSTONE
Rollingstone
DORER
MINNEISKA
Weaver
Whitman
John A. Latsch State Wayside
UPPER MISSISSIPPI NATIONAL WILDLIFE AND FISH REFUGE
MISSISSIPPI
T 109 N
T 108 N
R 8 W
ALTURA
NORTON
Bethany
HILLSDALE
MEMORIAL
MINNESOTA CITY
STOCKTON
WARREN
Lewiston
LEWISTON
UTICA
ST. CHARLES
CHARLES
DOVER
Dover
EYOTA
Little Valley
HARDW

c. Trespass problems (i.e., use of unauthorized areas) and other adverse impacts on wildlife management area lands must be controlled, and

d. The activity must not conflict with public hunting, fishing, trapping, other nature-oriented recreational, or resource management activities

(Note: This policy has been implemented by Commissioner's Order 1961; which is subject to change.)

13. Hiking, snowshoeing, and cross-country skiing are encouraged when no additional development or maintenance is required.

Currently public trails do not exist between the four state administered units identified above. Providing trail access between some of these units would be desirable, but it is questionable that point to point trails would be as desirable or heavily used as loop trails. In the south east area of the state the Root River State Trail provides an excellent long distance trail opportunity for a variety of user types.

Trail development for Carley should focus on safety and rehabilitation of existing trails, coordination with Mn/DOT and local units of government to improve use of the park for bicyclist and in the latter phases of park development expansion of the existing trail system.

Action #1. Ensure safety and control erosion on existing trails.

Steep slopes and some side slopes are eroding. The following management techniques should be considered:

1. Relocation of trail segments
2. Construction of stairs
3. Installation of water bars to reduce the rate of water flow
4. Stabilizing side slopes with timber or stone

All safety improvements on the existing trails should be made first. Trail repairs

and design must accommodate use for hiking and cross country skiing. Construction of stairs should be considered only in areas where an alternate ski route can be designated. All stairs (including existing stairs) should be signed appropriately.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$2,000			$8,000		$10,000

Action #2. Install railings on all bridges.

Bridges over two and a half feet above the ground should have safety railings.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$2,000					$2,000

Action #3. Construct a new trail loop.

A new trail segment should be constructed from the floodplain east and south toward the park entrance then along the top of the hill behind the park managers residence to connect with an existing trail. This new trail will require a bridge and minor grading near the river banks. This trail will increase the variety of routes a park skier can take and provide an excellent loop trail for interpretation of the park's natural features. All construction plans for this project should be reviewed with the DNR, Section of Fisheries to assess potential impact on water quality for trout management (also see Fisheries discussion p. 61). The project should also be reviewed by the DNR, Division of Waters to determine permit and design requirements for the proposed bridge.

The existing trail loop immediately north of the winter parking lot should also be redesigned to accommodate skiers.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST			$20,000			$20,000

Action #4. Expand the trail users parking lot.

This parking lot is currently designed for 6 cars. Frequently cars are parked in a random fashion which reduces the number of cars which can be accommodated. This parking lot should be enlarged to provide parking for 18 cars (for safety discussion also see Roads, Action #4, p. 76).

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$2,500					$2,500

Interpretive Facilities

Action #1. Develop one self-guided interpretive trail.

This trail should be located to allow interpretation of the relict white pine stand, geologic features of the park, geologic history of the area, floodplain forest community, maple-basswood community, the rattlesnake and a discussion of birds which can be seen in Carley.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST			$2,500		$1,000	$3,500

Vehicular Campground

Action #1. Redesign the campground.

Most sites do not have level spurs or tent pads and are inadequate in size for large recreation vehicles. The slope and soils in this area of the park are not well suited to campground development, however, the site is desirable in character and amenities.

Relocation of the campground was considered. Development of camping on top of the bluff was undesirable because of the distance campers would be from the creek. Development of a campground in the area of the picnic ground and south was considered undesirable due to poor soils, poorer air circulation, narrow land base, and user conflicts (picnickers using campsites near creek).

Careful redesign and construction of the existing campground will require upgrading of several of the existing sites, removal of some and additions of new sites to maintain an approximate total of 20 sites in this park. Due to

slope and soil limitations, it can be expected that not all sites will be able to accommodate large recreation vehicles. Based on the fact that Whitewater maintains 112 vehicular sites and that private area campgrounds provide hundreds of sites that can accommodate large recreation vehicles, it is not necessary that all sites in Carley be designed for the large recreation vehicles. In order to minimize construction costs and maintain 20 campsites in this park, several 25-75 ft. walk-in campsites should be developed for tenters. Tents and pop-up trailers were the most commonly used camping mode for Carley's visitors in 1981 and 1982. It is expected that these camping facilities were inadequate for many other user types.

Erosion is occuring on the campground loop roads. Road improvements should be integrated into the campground redesign. Redesign of the camping loop roads should only be considered if it would greatly enhance the campground design or result in a cost savings in the redesign of the entire campground. All park roads should be asphalted to eliminate dust and future erosion. Parking lots should remain gravel.

The limitations of each campsite should be explained on a park map. This will allow campers to select sites designed for their vehicle size.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST		$110,000				$110,000

Action #2. Replace 4 pit toilets with vault toilets.

The new vault toilets should be installed within the campground so they adequately meet health standards for the campground both now and when the campground is redesigned.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$15,000					$15,000

Group Camp

Action #1. Replace 2 pit toilets with 2 unisex vault toilets.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST		$7,000				$7,000

Action #2. Provide water.

Extend a deep burry water line to the group camp from the park residence well. Verify that this well has adequate water supply for both uses prior to extending the line.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST					$15,000	$15,000

Roads and Parking

Action #1. Relocate the park entrance road.

A preliminary study provided by Minnesota Department of Transportation, District #6, recommended three alternatives (see MPD). Further phone conversations identified a potential problem because CSAH 4 has two crests near the park entrance. If a detailed field study can locate a point at the top of one of the crests which will provide good visibility, then a new park entrance road should be constructed there. This new entrance location may require a right turn lane and a northbound pull-around lane on CSAH 4 for maximum safety. Remove existing entrance road.

Purchase of a small acreage of private land would be required to construct a new park entrance road in the location shown on the Proposed Development Map, p. 79. (For further discussion, see Park Boundary, p. 84.)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$35,000 (Land not included)					$35,0000

Action #2. Install a park entrance sign.

A large wooden sign with routed lettering should be installed at the park entrance. This sign will designate the point of entry, create a sense of arrival, and establish a good image for the park and state park system.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$500					$500

Action #3. Request development of a paved shoulder on CSAH 4.

Bicycle access to the park should be improved. DNR, Division of Parks and Recreation and the Trails and Waterways Unit should work with MN/DOT and the county to encourage paving of the shoulders on CSAH 4 from Plainview south past the park to Winona County Road 2.

No Cost

Action #4. Plow the entrance road to the first parking lot during the winter.

The park road has been plowed only when staff is available. Maintaining a plowed road and parking lot for winter users will enhance use and encourage repeat visitation. Some winter visitors have parked along CSAH 4. Expansion of the upper parking lot and maintaining a plowed road should encourage use of the park's facilities for cross country skiing and sliding. This is intended to eliminate a safety hazard which currently results from cars being parked along the shoulders of CSAH 4.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	Cost covered by park operations.					

Administrative Facilities

Action #1. Install one unisex vault toilet for use by park staff.

Replace one pit toilet with one vault toilet. This new toilet should be located on the south edge of the service court and should also be accessible for public use.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	$4,000					$4,000

Action #2. Remove all abandoned fence lines within the park.

Abandoned fencing is visually unattractive. Several sections can be seen from the winter ski trails. It can also create a hazard for park users if left in designated use areas.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST		$5,000				$5,000

Action #3. Construct a 24x36 ft. unheated storage building.

A 24x36 ft. unheated storage building constructed in the area of the service court would ensure proper storage of park equipment. All unneeded small storage sheds should be removed as soon as the building is complete.

A proposal to contract for a portion of the operations and maintenance of this park is being considered. Should contracting prove to meet the needs of the recreationalist, protect park resources and be proposed for continuance, then construction of this building may not be required.

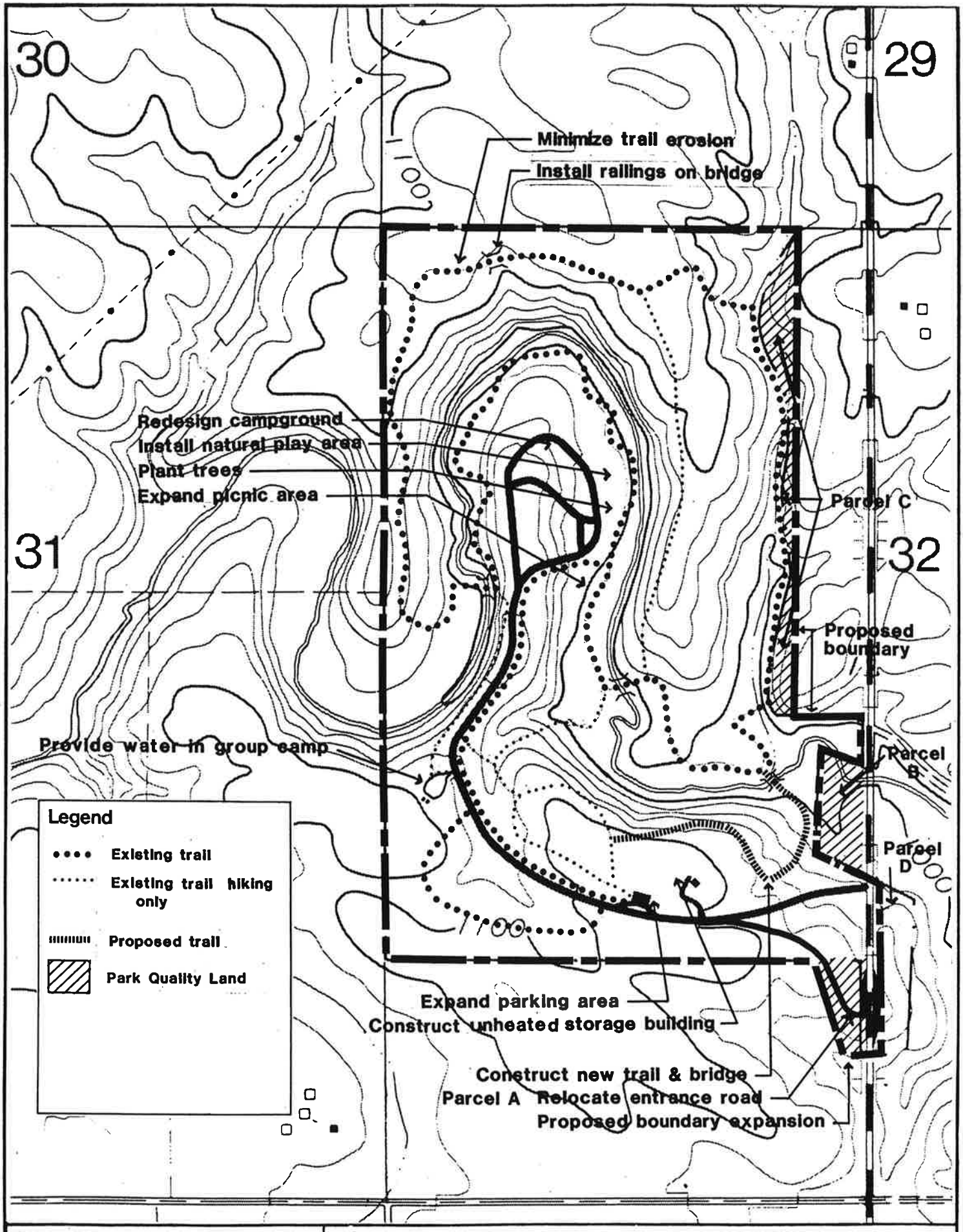
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
COST	Conditional			$20,000		$20,000

Action #4. Maintain a residence at this park.

The existing residence should be maintained until a determination can be made as to the best method for operations and maintenance of this park. No major structural repairs should be made to this house. This residence should not be remodeled or replaced unless providing housing in this park is justified in the Division of Parks and Recreation, Employee Housing Guidelines.

Should maintaining a residence in this park be undesirable for the Division of Parks and Recreation, then remodeling of the residence into equipment and vehicular storage or a contact/visitor center should be considered. Construction of an additional 24x36 ft. unheated storage building may not be required (also see Administrative Facilities, Action #3, p. 77).

No Cost



Carley State Park

Proposed Development/Trails

Park Boundary

PARK BOUNDARY

Carley State Park was established in 1949. At that time, 211 acres were included in the park's statutory boundary. No modification to the statutory boundary have been made since that time. All 211 acres are currently in state ownership.

Boundary Modification

The statutory boundary of a park is established by the state legislature and identifies those lands which have recreational and resource value for park purposes. The DNR is only authorized to purchase state park land located within a statutory boundary. It is important to note that when privately owned lands are included within a statutory boundary, the landowner still has the same rights to use and sell the land as do landowners outside the statutory boundary. Objectives which the DNR seeks to fulfill through recommending boundary modifications are:

- Delineation of lands with outstanding recreation and resource value for park development or protection which may be considered for acquisition from a willing seller when state funds are available.

- Delineate a land base that, if acquired, provides for protection of unique and valuable resources of statewide significance.

The resource and recreational value of the land adjacent to the park was evaluated. It was determined that some of the adjacent lands would enhance protection of park resources and benefit recreational facility improvements. See map, p. 79.

During the planning process, several comments were received supporting park boundary modifications for a variety of reasons. Comments received included; expansion of the park or its trail system to provide access to the Whitewater Wildlife Management Area and trout stream waters located less than two miles downstream from the park; expansion of the park upstream to allow an increase in trail mileage and improve management of trout stream waters; exchange of lands currently within the park for lands adjacent to but outside of the park boundary; and to acquire the land necessary to locate a safer park entrance road.

The park's statutory boundary should be expanded to include land for relocation of the park's entrance road and to maximize the protection of park resources and recreational experience. There are no farmsteads and minimal agricultural land within this proposed expansion.

Additional park quality lands, primarily for recreational use, do exist upstream from the park, however, further expansion is not recommended at this time.

Objectives:

To include lands adjacent to the park statutory boundary which have significant value for future development of park facilities

Action #1. Acquire Parcel A for relocation of park entrance road.

Acquisition of this land for park development requires expansion of the existing statutory boundary. Parcel A is an approximate area. An engineering study is required to determine the exact location of the proposed new entrance road to ensure necessary highway safety standards are met.

Cost to be determined.

Action #2. Parcel B provides an excellent buffer for the park.

This land is currently in private ownership being maintained as grasslands. Acquisition of this land would ensure land management which would enhance adjacent park lands and allow further expansion of park trails. Expansion of the parks statutory boundary to include this parcel could be considered in the future.

Action #3. Resolve boundary discrepancies along the east side of the park north of the creek (Parcel C).

Abandonment of a township road resulted in reversion of the land to the center of the right-of-way to adjacent landowners. Currently a park trail is located on the alignment of the abandoned roadbed. Relocation of this trail could be considered if use conflicts occur. This should be avoided if possible.

The township road abandonment order includes a vacated road description "as surveyed in 1873 and as surveyed in 1865." Surveying to relocate the center line of the abandoned road as it was surveyed in 1873 and 1865 is very costly and time consuming. This process would require deed research, documentation of the river channel changes over time, a complete history of the deed transfers, and creation of a new survey based on that data. Alternative methods should be considered to document and establish the park boundary in this area.

The following alternatives and others should be evaluated with adjacent landowners.

Alternative 1. This alternative if agreeable with adjacent landowners would require a legislative change to the park's statutory boundary. (see development map, p. 79).

Expand the park's statutory boundary east to include all lands disputed by the road abandonment. Select a new north-south park boundary approximately 500 feet west of and parallel with CSAH 4 and negotiate with adjacent landowners to purchase fee title to the narrow tracts of land between the existing and proposed park boundary. The total area proposed for purchase would be approximately six (6) acres. Negotiations and purchase of land in this manner, without requiring deed research or a field survey would result in a significant cost savings to the state and ensure use of the old roadbed for park trails.

New property deeds would be prepared based on the actual negotiations and sales.

Alternative 2. Request a new meets and bounds survey be prepared to document the center line of the existing alignment of the abandoned township road and compare with existing deeds.

Based on this new survey negotiate with adjacent landowners for purchase of adequate land for a trail and buffer.

New property deeds would be prepared based on the new survey. This may also require expansion of the park's statutory boundary.

Alternative 3. Purchase a trail easement from adjacent landowners through DNR, Trails Unit.

Expansion of the park's statutory boundary in this area of the park would not be required.

Cost: To be determined

Action #4. Review deed descriptions for park land east of CSAH 4.

The deed descriptions may be inaccurate for this parcel. In any event, adjoining parcels have incompatible deed descriptions resulting in a discrepancy in land ownership. Further study of the deed files will be required. However, the area of land in question is quite small and extensive research may not be cost effective for the state. If extensive research is required to resolve this issue, negotiation alternatives, including those listed in this section Action #3, should be considered to resolve ownership questions and to minimize the overall cost to the state.

Action #5. Exchange or sale of all park land east of CSAH 4 should be considered.

Exchange should be considered first.

Operations and Staffing

Maintenance and Operations

Maintenance is an essential responsibility of the DNR, Division of Parks and Recreation. It is a responsibility that often goes unnoticed by the park visitor in comparison with new developments. Yet, the park and the DNR are continually judged by the appearance of the park and its facilities.

The task of providing services to the public and security for park facilities and resources 24 hours a day, 12 months of the year is monumental. The current level of use which Carley is receiving does not require full-time operations (8:00 a.m. - 10:00 p.m.) seven days a week. The primary visitor use periods for Carley are from Friday afternoons until Sunday evenings and all holidays between Memorial Day and Labor Day weekends. Maintenance and repair of park facilities is required during and after heavy use periods. During all other seasons, this park requires only part-time operations to ensure adequate service to the public.

There are four basic aspects to maintenance and operations:

1. Maintaining resources
2. Maintaining facilities
3. Providing services to the park visitors
4. Enforcing rules and regulations which protect park visitors, resources, and facilities

One of the major maintenance problems in recreation areas is the heavy impact of large numbers of people concentrated in specific locations. These areas include: campsites, trails, riverbanks, areas around buildings and scenic points of interest. Foot traffic affects the ground cover and frequently exposes tree roots to damage. The eventual results may be erosion, slides, disfigured sites, and even danger to the visitor. Regular maintenance programs with trained personnel, and adequate supplies and equipment are essential to reduce damages, thereby avoiding major reconstruction expenditures.

Volunteer Programs

Community involvement and volunteer programs should be promoted for this park. The regional staff should encourage volunteers and coordinate programs for special construction projects, resource management programs, trail maintenance and interpretation. The sensitive nature of the soils and vegetation in this park will require approval of all park projects by the Regional Resource

Coordinator. Donations to the park of facilities and project-related labor must also be approved by the Division of Parks and Recreation, St. Paul office to ensure that they meet the programming goals for the park and do not duplicate facilities or programs funded through the state legislature (also see Classification discussion, p 41).

Staffing

A factor contributing to the current park operations problem statewide is the past reliance on federally funded work programs such as the Comprehensive Employment and Training Act (CETA) The Neighborhood Youth Corps (NYC), and Green Thumb. The low cost personnel provided by these programs makes it possible for parks to offer programs and services which would otherwise be impossible. However, these employees are hired on a short term basis, usually eight to ten weeks and often do not have the training and experience necessary to provide needed services without constant supervision. To avoid these problems, funding should be made available to hire trained personnel for major public service and maintenance programs. Temporary assistance program employees should be hired for minor maintenance and special projects.

The following staffing chart summarizes Carley State Park's existing staff.

1984 Staffing	Total Staff Months
Technician I	9
Building & Grounds Worker	5

The programs identified in this management plan are designed to enhance and promote a moderate increase in the use of the park. An increase in park use will require additional facility and resource maintenance. The following staffing alternatives for Carley State Park are based on the operations and maintenance of the existing and propose facilities identified in this management plan.

Alternative I - Contract for daily park operations and maintenance.

The purpose of contracting with a local resident would be to provide cost effective daily operations and maintenance of a minor use state park unit.

The contractor would operate the park to ensure that the park is open daily from 8:00 a.m. to 10:00 p.m. and open for overnight camping under the same rules and regulations governing all state parks. The contractor could provide sale of state park stickers, sale of firewood, visitor information, and monitoring of a self registration system for campers and day visitors. The contractor would be required to provide maintenance and minor repairs for the park such as: mowing grass only in designated areas; clean, paint or make minor repairs to park equipment, buildings and bridges; maintain park roads and plow in winter; maintain trails; and remove trash. All monies collected would be placed in the state wide park operations fund in the same manner other state parks do.

All operations, maintenance and development required to operate Carley State Park at a standard comparable to other state parks would be provided by contract, volunteers, or by the staff at Whitewater State Park. Staff from Whitewater will be responsible for monitoring the condition of the park operations, facilities, and resources.

Alternative II - Provide permanent DNR staff positions at Carley.

The purpose would be to provide optimal service to the public and maximum protection for park facilities and resources.

Establishing a Technician II position in this park would provide optimal park operations, maintenance, and resource management for the park. The Technician II would be fully responsible for year-round operations of Carley State Park. Supervision of the Carley's Technician II should be provided by the park manager at Whitewater State Park. Under this proposal, the park would be staffed full-time during peak park use periods of weekends and holidays between Memorial and Labor days. During the low use season, Carley's technician would work approximately 75 percent time at Whitewater. Special projects requiring additional laborers should be coordinated with the staff at Whitewater.

Alternative III - Operate Carley State Park as a satellite of Whitewater State Park using staff from Whitewater.

The purpose would be to minimize the cost of operating Carley State Park with park staff.

Staff would be assigned to Carley on a routine basis as maintenance and special projects required. A self-registration system would be adopted for the campground and day use visitors. Staffing of the park and services to the public would be limited to those determined to be necessary for the protection of park facilities and resources. Additional staff will be required at Whitewater State Park to provide operation and part-time staffing of Carley.

Recommendation:

Alternative I should be pursued under a pilot contract to determine if adequate services could be provided to the public and park facilities and resources protected. An evaluation process should be developed prior to preparing a maintenance and operation contract for this park. It is critical that the responsibilities and limits of the contractor be clearly defined. To ensure protection of the park's resources and recreation programs, the contract and any changes to the park (including widening of trails, planting or removal of trees, shrubs or flowers) must be reviewed by the regional resource coordinator, and regional park supervisor.

Until Alternative I can be initiated, the park may be operated in its present manner with necessary assistance from the Whitewater staff. If after a reasonable test period and appropriate contract modifications, Alternative I proves not to be cost effective or does not provide adequate public services or park protection, then Alternative II or III should be considered.

Ultimately, operations of all state park facilities is dependent on receipt of adequate funding from the state legislature.

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Implementation

The following cost estimates were generated in April, 1985. These cost estimates are based on current prices and available information. As information is made available and as new or modified programs are initiated, revised cost estimates will be prepared to more realistically represent costs at that time. This plan is intended to be implemented in ten years. All uncompleted recommendations should be reviewed after that time. The phases noted suggest the completion of all projects in phase one before implementing proposals in phase two, however, it is not always practical or economical to proceed in this manner. Also There is no guarantee that adequate funding would be received from the legislature within the ten years. Therefore, some change to these phases can be expected. The conditional column includes those actions which cannot be phased into the development schedule at this time. (See the individual actions in the text for justification.) Estimated costs are for individual projects. Costs for some projects may be reduced if they are done in conjunction with other projects.

ACTION #	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	TOTAL	Conditional
RESOURCE MANAGEMENT							
Vegetation							
1 Monitor native white pine stands.							X
DEVELOPMENT							
Picnicking							
1 Expand picnic area.	$4,500					$4,500	
2 Plant native trees.		$9,000		3,000		12,000	
3 Install a natural play area.			$5,000			5,000	
4 Allow donation of a picnic shelter.							X
Trails							
1 Ensure safety and control erosion on existing trails.	2,000			8,000		10,000	
2 Install railings on all bridges.	2,000					2,000	
3 Construct a new loop trail.			20,000			20,000	
4 Expand trail parking lot.	2,500					2,500	

ACTION #	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	TOTAL	Conditional
Interpretive Facilities							
1 Develop one self-guided interpretive trail.			2,500		1,000	3,500	
Vehicular Campground							
1 Redesign campground.		110,000				110,000	
2 Install 4 vault toilets.	15,000					15,000	
Group Camp							
1 Install 2 vault toilets.		7,000				7,000	
2 Provide water.					15,000	15,000	
Roads and Parking							
1 Relocate entrance road.	35,000 (Land not included)					35,000	X
2 Install a park entrance sign.	500					500	
3 Request county to pave shoulder of CSAH 4	No Cost						
4 Plow entrance road.	Cost covered by park operations						
Administrative Facilities							
1 Install 1 vault toilet.	4,000					4,000	
2 Remove abandoned fencing.		5,000				5,000	
3 Construct a 24x36 ft. unheated storage building.				20,000		20,000	X
4 Maintain a residence at this park.	No Cost						
Park Boundary							
1 Acquire parcel A for relocation of entrance road.	Cost to be determined						X
2 Acquire parcel B	Cost to be determined						X

ACTION #		PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	TOTAL	Conditional
3	Resolve boundary discrepancies along east side of park (parcel C).	Cost to be determined						
4	Review deed for land east of CSAH 4.	Cost to be determined						
5	Exchange or sell all land east of CSAH 4.							
	TOTAL	$65,500	131,000	27,500	31,000	16,000	271,000	

ACTION #		PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	TOTAL	Conditional
3	Resolve boundary discrepancies along east side of park (parcel C).	Cost to be determined						
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5	Exchange or sell all land east of CSAH 4.							
	TOTAL	$65,500	131,000	27,500	31,000	16,000	271,000	