

# Lake Minnewashta Regional Park Master Plan



Prepared For:  
Carver County Parks

October 2002

Prepared By:  
Brauer & Associates, Ltd.

# Acknowledgments

## Overview

In November of 2001, Carver County Board of Commissioners retained Brauer & Associates, Ltd. to work with county staff and local citizens to complete a comprehensive master plan for Lake Minnewashta Regional Park. This document represents the results of the planning process, which was completed in the fall of 2002.

## Acknowledgments

The consultant team would like to thank Carver County for undertaking an open and constructive public participation process for the project. This approach allowed for various perspectives to be considered on important planning issues that affected the master plan for the park. Through this process, it is believed that a responsible balance between human use of the park and its ecological protection was achieved.

The consultant team would also like to thank the Carver County Parks Commission and Carver County Board for participating in this project. Their individual and collective insights were instrumental in drawing conclusions that are reasonable and responsible.

The consultant team also extends a heartfelt thank you to the Carver County staff, especially Marty Walsh, County Parks Director and Roger Gustafson, County Engineer. The openness with which they approached this project paved the way for an open public process that considered all opinions to be of equal merit and worthy of due consideration. Their understanding of the larger regional context and pressing park needs and how Lake Minnewashta Park fits into the larger regional park picture was also of high value as final conclusions were drawn.

Finally, the consultant team extends a thank you to the citizens who took the time to attend meetings, write letters, and make phone calls so that we could understand the issues first hand and find solutions that seemed reasonable and workable.

Sincerely,



Jeff Schoenbauer, Principal-in-Charge  
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## Section I

# Introduction and Planning Framework

### Overview

The project focused on the preparation of a comprehensive master plan for Lake Minnewashta Regional Park. The planning process took into consideration past master plans for the site, the setting, recreational and educational needs of the region, and the natural and cultural resources of the park itself. The master plan establishes a vision for the park and provides the guidelines for its ecological management and physical development to accommodate public use. The plan is also a tool for public presentations and preparing funding applications.

Although comprehensive, the master plan still remains dynamic. It should be viewed as firm enough to guide park improvements, yet flexible enough to change based on increased knowledge, experience and changing public needs as the plan is implemented.

### Interrelationship with Past Master Plans

The last master plan for the park was completed in 1982, which was an update of a 1975 master plan. Although a number of the provisions of those master plans remain applicable today, after 20 years the plan was in need of updating. As of the date of adoption of this plan, the past plans are no longer valid except for historical reference.

### Planning Framework

The planning framework provided structure to the process of updating the previous master plan. The framework consisted of a number of components:

- ▶ Public involvement
- ▶ Carver County involvement
- ▶ Public agency involvement
- ▶ Planning process

## Public and Carver County Involvement

Given the notable interest in the future development and protection of Lake Minnewashta Regional Park, the general public and special interest groups were invited to participate in the planning process on a number of occasions. Through formal and informal meetings, members of the community had direct access to the consultant team and county staff. The public's input throughout the planning process proved very fruitful and strengthened the final plan. (Note that the overall project schedule of meetings is defined on page 2.13 in Section II.)

In addition to general public involvement, the Carver County Parks Commission worked directly with the consultant team throughout the planning process. Being familiar with local conditions, public demand for facilities, and the history of the park, Carver County Parks staff inherently played an instrumental role in the master planning process. Under the planning framework, the commission and staff specifically focused on the following key roles:

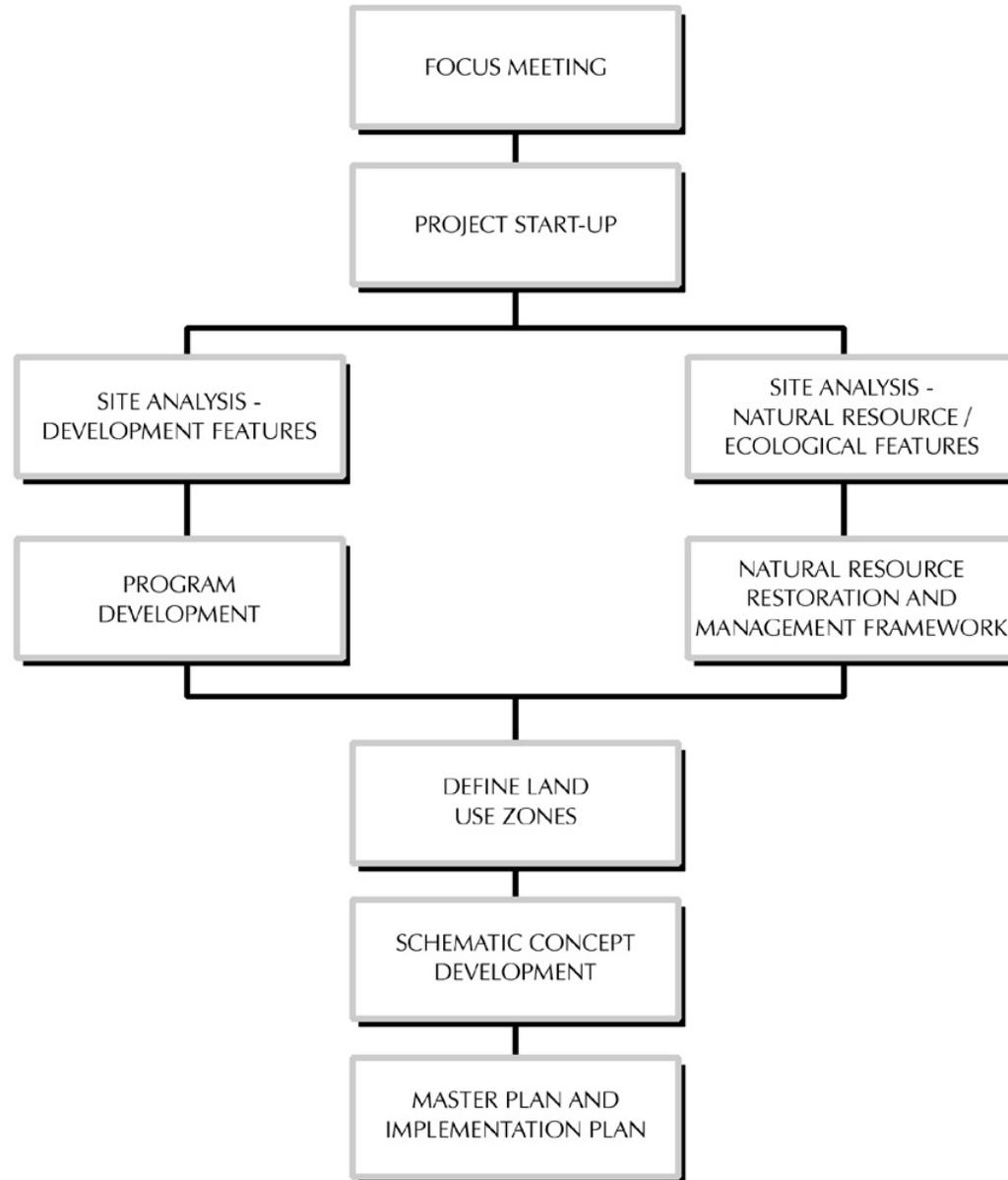
- ▶ Provide perspective and feedback on all planning issues.
- ▶ Review and comment on all findings and master plan outcomes.
- ▶ Reach consensus on a final master plan.

## Public Agency Involvement

To ensure congruency between agencies, Carver County invited representatives from Metropolitan Parks, Minnesota Department of Natural Resources, and the City of Chanhassen to participate in the planning process. The master plan takes into consideration the results of meetings with representatives from these agencies.

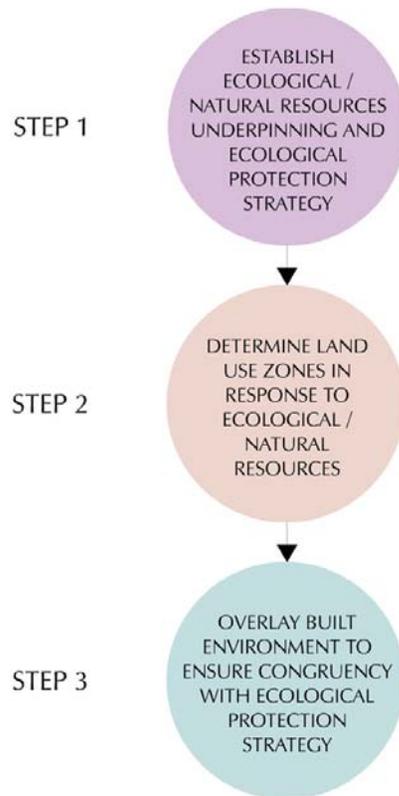
## Planning Process

The planning process followed a step-by-step procedure in which public participation was an integral part. The process was structured to allow for a series of internal checks and balances, which ensured that pertinent issues were considered and addressed in the proper sequence and with due diligence. It also ensured that ecological issues were kept at the forefront of all discussions and land use decisions. Figure 1.1 illustrates the key benchmark steps in the planning process.

*Figure 1.1 - Key benchmark steps in the planning process.*

*Inherent to this project was finding the right balance between human use of the park and its ecological preservation and protection.*

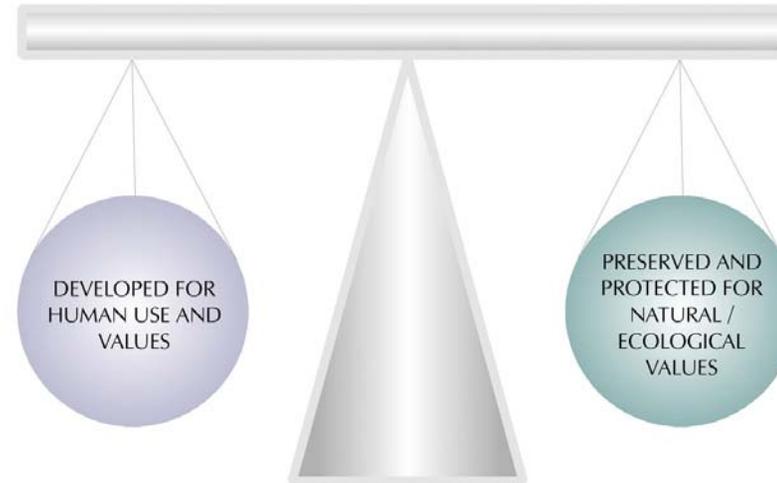
*Figure 1.3 – Ensuring that ecological values set the stage for human uses.*



## Balancing Human Use and Ecological Protection

Inherent to this project was finding the right balance between human use of the park and its ecological preservation and protection, as illustrated in figure 1.2.

*Figure 1.2 – Balancing human use and ecological preservation.*



Since regional parks place significant emphasis on preserving ecological values, the planning process went to extensive lengths to ensure that the natural qualities historically present within the park would be restored and maintained and become a major aspect of the final master plan. In addition to its intrinsic values, restoring the park's natural landscape will also enrich the human, or cultural, experience for those visiting the park – especially in light of the recreational trends defined in Section II.

Given that the land stewardship is central to the park's vision, establishing its ecological underpinnings was the first fundamental step in the planning process, as shown in figure 1.3. Once this was in place, the physical development of the park for recreational uses was considered, as defined by steps 2 and 3 in the illustration. Under this model, the planning strategy recognized the importance of the park in accommodating the public's expectation for pleasure, health, and well-being through the provision of recreational facilities. At the same time, the ecological values of the site would also be respected in determining the type, extent, and location of these facilities.

## Section II

# Setting / Trends / Public Process Findings

### Overview

This section of the master plan considers the setting for the park, regional trends affecting its future, and findings from the public process. Considered collectively, these variables played a major role in shaping the master plan and how the decisions made today will affect the park 10, 20, or even 50 years hence.

### Setting

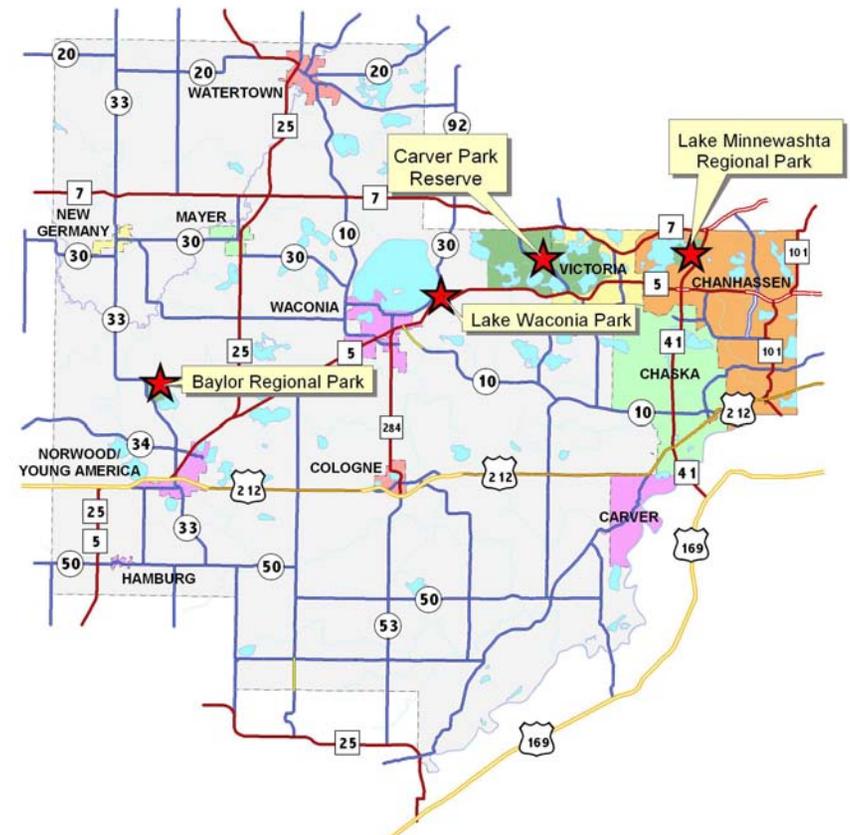
*At 341 acres, Minnewashta Regional Park is the largest park unit administered by Carver County.*

Carver County operates and maintains three major park units. The agency oversees approximately 552 acres of acquired park land throughout the County.

At 341 acres, Minnewashta Regional Park is the largest park unit administered by Carver County. As of 2002, the park offered a variety of recreational amenities, including beach facilities, nature and cross-country ski trails, picnic facilities, a large play area, and two boat launches. The park also exhibits an impressive cross-section of natural plant communities and ecological systems that provide respite from the burgeoning development occurring in the western suburbs.

Figure 2.1 illustrates the location of the park relative to the other parks within Carver County.

*Figure 2.1 – Location of Lake Minnewashta Regional Park within Carver County. (Note that Carver Park Reserve is administered by Three Rivers Park District.)*



## Regional Park Context

In 1975, the State Legislature passed the Metropolitan Parks Act that established the Regional Park System. Lake Minnewashta was defined at that time as a resource of metropolitan significance, which warranted it being designated as a regional park. The park's first formal master plan was completed in 1975 and adopted in 1976. As a regional park implementing agency, Carver County holds the responsibility to develop and implement plans for property acquisition and development of this park.

The master plan presented here updates the past master plans for the park. The update takes into consideration the recreational needs that were defined as part of the public process and regional trend information that is included in this section.

### Relationship with Other Regional Parks within Carver County

Within the regional context, Lake Minnewashta Regional Park interrelates with a number of other regional parks within Carver County, as identified in figure 2.1 on the previous page. Regional Parks within the regional system include:

- ▶ **Carver Park Reserve** – at 3,000 acres, the reserve focuses on preserving larger natural areas by limiting development to a maximum of 20% of the land area. The reserve features picnicking, swimming, family camping, and trails in a rural-type setting.
- ▶ **Lake Waconia Regional Park** – at 130 acres, this is the smallest park unit within the County's park system. Located on the shores of Lake Waconia, the park has a strong lake-related recreational focus. Although ultimately offering many of the same type of activities as Lake Minnewashta Regional Park, the character of the land and size of the park create two distinctly different, yet complementary, park opportunities for the regional population to enjoy.
- ▶ **Baylor Regional Park** – is located in the western side of the county in the rural countryside. This park features picnicking facilities, swimming, family camping and trails. The rural character of the park and the surrounding area complements the more urban surroundings associated with Lake Minnewashta and Lake Waconia Regional Parks.

*From an interrelationship perspective, the master plan for Lake Minnewashta Regional Park complements the recreational facilities and natural amenities found at the other parks within Carver County.*

From an interrelationship perspective, the master plan for Lake Minnewashta Regional Park complements the recreational facilities and natural amenities found at the other parks within Carver County. The design approach taken for the park – which focuses on maintaining a balance between human use of the park and preserving its natural characteristics – will provide a very appealing visitor experience that interrelates well with the experiences found in the other parks.

## Status of Land Acquisition and Implementation of the 1982 Master Plan Update

Since the 1982 Master Plan Update, there has been no additional land acquisition for the park. Although the 1982 update indicated that two additional properties on the east side of County Road 41 were scheduled for acquisition, that did not occur. BY mutual agreement between the City of Chanhassen, Carver County, and Metropolitan Council, the October 5, 1984 Amended Conditional Use permit for the park eliminated parcels C and D from being considered for park property. As of 2002, much of that land has been developed for residential subdivisions. With no additional land acquisitions actively being considered, the current park boundary line as illustrated in figure 2.2 is the expected extent of Lake Minnewashta Regional Park property.

Figure 2.2 – Aerial view of Lake Minnewashta Regional Park as it existed in 2002. (Approximate park boundary defined by gold line.)



From a development standpoint, the features and amenities found in the park as of 2002 generally reflect those that were defined in the 1982 Master Plan Update, although numerous aspects of that plan have not been implemented. To be sure, many of the park's current developed features and those defined in the 1982 plan still hold considerable merit in the context of contemporary recreational trends. However, after 20 years a general reevaluation of the previous plan was warranted to ensure that new trends and park use pressures not anticipated at that time are adequately addressed. The 2002 master plan update presented here carries forward those features from the old plan that have continued merit while at the same time eliminating those that are no longer viable.

## Current Use Patterns

A *Twin Cities Regional Parks Visitors Study* conducted in 1998 by the Metropolitan Council provided some valuable data for consideration as part of updating the master plan. The following considers the key points of that summary. (Note that the data is based on eight randomly selected site visits to the park during the summer of 1998.)

### Main Activity While in the Park:

43% – Swimming and wading	4% – Walking and hiking
16% – Fishing	4% – Relaxing
12% – Picnicking	4% – Sunbathing
7% – Motorboating	4% – Other
5% – Playground use	1% – Non-motorized boating

In terms of secondary activities while in the park, most park visitors surveyed do not participate in other activities during their visit to the park (37%). The higher ranked secondary activities include relaxing (16%), picnicking (14%), and swimming/wading (13%).

By a wide margin, most people first discovered the park through friends and family (51%) or the fact that the park was close to home (30%). In terms of what was most important in their decision to use the park, water quality (61%), restrooms (62%), swimming beach (62%), lifeguards at the beach (38%), places to sit (28%), picnic facilities (29%), play equipment (25%), and boat access (27%) were the highest ranked reasons. In terms of overall satisfaction with the park, the vast majority were very satisfied (87%) with their experience.

Note that the Visitors Study does not take into consideration the multitude of special uses and group gatherings that occur over the course of a year within the park that are equally important in defining overall park uses.

Examples include:

- ▶ Boy Scout Winter Camporee – 250 participants/day for two day event.
- ▶ Girl Scout Overnight camp – 300 participants/day for two day event.
- ▶ Girl Scout Group Day Camp – 300 participants/day for three day event.
- ▶ Girl Scout Jamboree – 500 participants/day for four day event.
- ▶ Fourth of July Fireworks.
- ▶ Picnic shelter group reservations – 63 separate reservations.

## Regional Trends Forecasting

*One of the more important trends is that the population in the metropolitan area is expected to continue to grow.*

*Carver County is expected to be near the top in terms of percentage increase in population.*

Whereas current use data provides insights in who the park has served in the past, trends forecasting is also critical to the master planning process to ensure that the park is well positioned to service future generations. Trends related to changes in the population along with evolving recreational trends were taken into consideration during the preparation of the master plan.

As defined by the Metropolitan Council, a variety of trends are expected to impact the use of the regional park system over the next fifty years. The following defines the overarching trends that had a direct impact on master plan outcomes for this park.

### Population Trends for the Twin Cities Metropolitan Area and Carver County

One of the more important trends is that the population in the metropolitan area is expected to continue to grow by a substantial amount over the next 20 and 50 years. As shown in figure 2.3, the population forecast reveals that the population in Carver County is expected to be near the top in terms of percentage increase in population over that time period. In addition, Lake Minnewashta Regional Park lies on the border of Hennepin County, which is the most populated of all counties in the metropolitan area.

Undoubtedly, this growth trend will put increasing pressure on developing Lake Minnewashta Regional Park to service an expanding population with a wide range of outdoor recreation pursuits and service expectations.

*Figure 2.3 – Population forecasts stratified by regional park agency jurisdiction. (Source: Metropolitan Council System Analysis of the Regional Recreation Open Space System)*

County/City	Preliminary Population estimates			Total increase from 2000		% increase from 2000	
	2000	2020	2050	2020	2050	2020	2050
Dakota County	351,240	456,160	579,436	104,920	228,196	30%	65%
Suburban Hennepin County	646,550	737,480	837,189	90,930	190,639	14%	29%
Washington County	203,120	288,670	377,082	85,550	173,962	42%	86%
Anoka County	295,910	350,410	440,575	54,500	144,665	18%	49%
Scott County	81,990	137,910	187,452	55,920	105,462	68%	129%
Carver County	66,160	104,420	145,144	38,260	78,984	58%	119%
Suburban Ramsey Co.	231,020	243,340	263,916	12,320	32,896	5%	14%
St. Paul	274,500	294,000	301,723	19,500	27,223	7%	10%
Minneapolis	370,000	388,000	392,656	18,000	22,656	5%	6%
Bloomington	88,500	91,000	92,978	2,500	4,478	3%	5%
<b>Total</b>	<b>2,608,990</b>	<b>3,091,390</b>	<b>3,618,151</b>	<b>482,400</b>	<b>1,009,162</b>	<b>18%</b>	<b>39%</b>

*Note: Suburban Hennepin County does not include Bloomington or Minneapolis*

*Note: Suburban Ramsey County does not include St. Paul*

## Trends in Park Visits

With an increasing population comes an increase in the number of park visits. When looking further into park visit trends, the numbers become even more telling as to the demands that will be placed on regional park resources such as Lake Minnewashta Regional Park.

Figure 2.4 provides an estimate in the number of visits to the regional system for 2020 and 2050, as projected by the Metropolitan Council. With an increase in visits comes a propensity for crowding, with fewer acres available on a per person basis than there are today. From a planning perspective, the challenge lies in developing the park to meet future demands without significantly diminishing the user experience.

Figure 2.4 – Trends in overall park visits to the regional park system. (Source: Metropolitan Council System Analysis of the Regional Recreation Open Space System)

	1999 Visits (1,000's)	2020 Visits (1,000's)	2050 Visits (1,000's)	2020 % increase	2050 % increase
Scott	187	249	308	33%	65%
Carver	175	225	280	29%	60%
Washington	586	743	908	27%	55%
Dakota	750	925	1,128	23%	50%
Anoka	1,843	2,165	2,610	17%	42%
Hennepin	3,235	3,715	4,240	15%	31%
Ramsey	1,577	1,771	2,004	12%	27%
Bloomington	807	902	1,003	12%	24%
St. Paul	4,588	5,136	5,665	12%	23%
Minneapolis	15,525	16,903	17,994	9%	16%
<b>TOTAL</b>	<b>29,273</b>	<b>32,733</b>	<b>36,140</b>	<b>12%</b>	<b>23%</b>

Of the estimated 175,000 visits to Carver County Regional Parks in 1999, 86,400 of those were to Lake Minnewashta Regional Park.

With an increase in visits comes a propensity for crowding.

From a planning perspective, the challenge lies in developing the park to meet future demands without significantly diminishing the user experience.

## Trends in Recreational Demands

Through review of a variety of studies undertaken by the Metropolitan Council, along with other sources, much can be learned about recreational trends influencing decisions about Lake Minnewashta Regional Park's future development. From a regional perspective on park needs, the following tables provide insight into the interests and perspectives that people have regarding various forms of recreational activities.

### Interest in an Outdoor-Based Activity

Source: "Leisure Trends in the Twin Cities" – University of Minnesota Survey Research Center (1996).

Outdoor-Based Activity (Ranked by Column 2, "Have Participated")	"I am not interested in this activity." (%)	"I am interested in this activity and have participated about as often as I wanted to in the last 12 months." (%)	"I am interested in this activity but I have NOT participated as often as I would have liked to in the last 12 months." (%)
Walking (around your neighborhood)	15	72	13
Walking (in natural area, large parks)	22	57	21
Picnicking	27	52	22
Attending sports events as a spectator	35	45	21
Casual sports (catch, frisbee, pickup games, etc.)	43	43	14
Gardening	37	41	22
Visiting playground areas outdoors	49	41	10
Visiting conservatory, arboretum, public gardens	33	39	29
Swimming or sunbathing at a beach	44	35	21
Informal birdwatching, nature study	52	35	14
Biking, 3 miles or less	48	34	19
Camping	42	33	25
Swimming or sunbathing at a pool	52	31	18
Fishing	44	29	27
Biking on paved trails in natural areas, large parks	51	26	23
Power boating, waterskiing, racing, jetskiing	60	23	17
Sledding	60	21	19
Other team sports (basketball, softball, soccer, etc.)	69	20	11
Jogging, running	70	20	10
Non-power boating (canoeing, sailing, sailboarding, etc.)	56	19	25
Biking on unpaved trails in natural areas, large parks	70	16	15
Inline skating, roller skating/skiing, skateboarding	75	14	11
Road biking	76	14	10

<b>Outdoor-Based Activity</b> (continued) (Ranked by Column 2, "Have Participated")	<b>"I am not interested in this activity." (%)</b>	<b>"I am interested in this activity and have participated about as often as I wanted to in the last 12 months." (%)</b>	<b>"I am interested in this activity but I have NOT participated as often as I would have liked to in the last 12 months." (%)</b>
Racquet sports (tennis, squash, racquetball, etc.)	72	13	15
Cross-country skiing	72	12	16
Snowmobiling	78	10	12
Ice skating (figure, speed, etc.)	79	10	11
Horseback riding	76	6	19
Playing ice hockey	89	6	5
Golf	90	6	5
Formal bird watching/nature study	86	5	9

### Various Perspectives on Parks

Source: "Leisure Trends in the Twin Cities" – University of Minnesota Survey Research Center (1996).

Statement	Percentage of residents indicating agreement/disagreement with the following:				
	Strongly Agree (%)	Agree (%)	Neither Agree nor Disagree (%)	Disagree (%)	Strongly Disagree (%)
"I think parks would be valuable even if I didn't actually use them very much."	60	34	5	1	1
"I think more park land will have to be acquired to serve the population of the Twin Cities Metropolitan Area <u>in the year 2010.</u> "	26	37	24	11	3
"I think we should improve the maintenance of existing parks before we develop any new ones."	18	38	29	13	2
"I think more park land should be acquired to serve the <u>present</u> population of the Twin Cities Metropolitan Area."	23	31	28	13	4
"I think we should develop the park land we have before we buy any more."	14	34	31	17	4

Whereas the last two tables provide a snapshot of people's preferences at a given point in time, looking into the future and forecasting trends in visits to the regional park system is also very telling and important to the master planning process. Figure 2.5 provides some insights regarding the estimated increase in activity visits.

Figure 2.5 – Trends in overall park visits to the regional park system. (Source: Metropolitan Council System Analysis of the Regional Recreation Open Space System)

Activity	Base <sup>1</sup> (1,000's)	Projected change for 2020 (%)	Projected change for 2050 (%)	Projected visits for 2020 (1,000's)	Projected Visits for 2050 (1,000's)
Walking/hiking	9,548	23%	48%	11,744	14,131
Biking	5,482	18%	54%	6,469	8,442
Non-pool swimming	4,280	12%	37%	4,794	5,864
Picnicking	3,240	16%	23%	3,759	3,985
Sightseeing	1,020	34%	76%	1,367	1,795
Fishing	1,160	11%	15%	1,288	1,334
Motorboating	540	7%	20%	578	648
Nonconsumptive wildlife activities	360	40%	72%	504	619
nonmotorized boating	300	33%	78%	399	534
Developed camping	280	19%	32%	333	369
Family gathering	220	14%	33%	251	293
Cross-country skiing	217	-1%	18%	215	256
Horseback riding	60	27%	100%	76	120
Snowmobiling	N/A	42%	121%	N/A	N/A
Visiting historic places	N/A	39%	76%	N/A	N/A
Visiting a beach or waterslide	N/A	14%	35%	N/A	N/A
Hiking	N/A	12%	24%	N/A	N/A
Backpacking	N/A	-2%	10%	N/A	N/A
primitive camping	N/A	-4%	-20%	N/A	N/A
<b>Metro Population increase</b>	<b>N/A</b>	<b>18%</b>	<b>39%</b>	<b>N/A</b>	<b>N/A</b>
<b>Total</b>	<b>26,707</b>	<b>19%</b>	<b>44%</b>	<b>31,775.5</b>	<b>38,391.3</b>

<sup>1</sup> Base number of visits were determined using the Metropolitan Council's 1999 Annual Use Estimate and 1998/99 Regional Parks Visitor Study. It was not possible to determine the base visits for 1999 for those activities labeled "N/A". For some activities such as "hiking" and "visiting a beach or waterslide", they are partially subsets of broader activity categories ("walking" and "nonpool swimming").

Looking into the future and forecasting trends in visits to the regional park system is also very telling and important to the master planning process.

## Other Regional Trends of Note

A number of other notable regional trends add insight into the long-term prospects for Lake Minnewashta Regional Park in terms of user base and challenges. As defined in the *Metropolitan Council System Analysis of the Regional Recreation Open Space System* study, these include:

- ▶ Current lower than expected use of the regional park system by teens and young adults will be reflected in lowered future use of the regional park system by these groups. Leisure research has shown that recreation habits are formed as children and teenagers. What this means is that if teens and young adults are currently not using the regional park system, it is probable that they will continue through their adult life to not use the regional system. Education at an early age about the values that regional parks can bring to one's life will be important to changing this trend.
- ▶ The baby boom generation will continue to have a large presence in the regional park system, but their needs will change. The baby boom generation is currently using the regional park system at rates that are higher than their actual share of the metropolitan area population. Visitation by people over the age of 60 is expected to increase as the baby boom generation ages and continues their use of the regional park system. Facilities will need to be kept up to Americans with Disabilities Act (ADA) standards, and more opportunities for low impact and educational learning opportunities should be provided to meet the needs of this growing user base.
- ▶ The regional park system will see the effects of an increase in population neutralized to a large degree by a major segment of the population that has not developed a leisure routine that includes visiting regional parks. This is a result of the current under-use by teens and young adults, who will also be less likely to take their children to regional parks, which could develop a downward trend in visitation over multiple generations. The Council and implementing agencies are aware of this issue and will be working on assessing potential barriers to participation and identifying ways to increase visitation to the regional park system by these age groups.
- ▶ Facilities in regional parks need to be assessed to ensure they help meet the needs of the growing ethnically-diverse segments of the population.
- ▶ Demand for mini-vacation opportunities in the local area will increase. Camping in regional parks may become more popular among local residents. Expect increased interest and markets for packages that combine camping with resource education programs or specific organized events such as bird banding, astronomy, walking or adventure recreation.
- ▶ Increasing oil prices may decrease automobile fuel consumption and long auto-trips to national or state parks may decrease in frequency. As such, demand for local recreation opportunities that involve less travel will increase, as will non-automobile access to regional park system units.
- ▶ Over the next ten years, the number of recreational vehicles (RVs) and proportion of households with an RV should rise moderately, to 3.1 % of all households. Regional park units will be challenged with the pressure to develop more RV-oriented sites while trying to meet the needs and desires of local residents.

*Education at an early age about the values that regional parks can bring to one's life will be important to changing this trend.*

*The baby boom generation will continue to have a large presence in the regional park system, but their needs will change.*

*Expect increased interest and markets for packages that combine camping with resource education programs or specific organized events.*

*"A new paradigm is emerging in the regional park system that focuses on the benefits obtained from visiting parks. This new approach focuses on providing quality benefits to individuals, social/community benefits, economic benefits and environmental benefits."*

*The regional trends clearly suggest that Lake Minnewashta Regional Park will play an important role in meeting future demands for parks and open spaces at the regional level.*

## Related Findings from Survey of Carver County Residents \_\_\_\_\_

### Park Management Trends \_\_\_\_\_

As defined by the Metropolitan Council, *"a new paradigm is emerging in the regional park system that focuses on the benefits obtained from visiting parks. This new approach focuses on providing quality benefits to individuals, social/community benefits, economic benefits and environmental benefits."* As stated by the Council, this approach takes on a more holistic attitude than previous management approaches.

Under this approach, the report makes the following points:

- ▶ The regional park system needs to have a stronger focus on identifying and quantifying the benefits provided by the system.
- ▶ Community and environmental benefits and costs will play an increasingly important role in decisions made about planning, managing and funding the regional park system.
- ▶ Quantifying the economic benefits of regional parks will strengthen the ability of the system to compete for funding and will allow for inclusion of parks in the economic models used in making decisions that affect the region.

### Affect of Regional Trends on Master Planning Lake Minnewashta Regional Park \_\_\_\_\_

The regional trends clearly suggest that Lake Minnewashta Regional Park will play an important role in meeting future demands for parks and open spaces at the regional level. When considering the type of recreation that people will be pursuing in future years, eleven of the top twelve recreational activities (as defined in figure 2.5 on page 2.9) will be accommodated at Lake Minnewashta Regional Park. As the population of the area continues to grow, yearly increases in park visits within the county can also be expected. In addition, the type of activities provided in the park need to appeal to both young and old age groups. This is important in that while the park must appeal to an aging population, it must also appeal to the leisure routines of younger age groups. The balance of recreational opportunities provided under the master plan attempts to bridge this gap.

In October, 1997, Carver County undertook a county-wide survey of residents to determine resident's attitudes on the planning issues facing the county. The following summarizes the findings of that survey as pertinent to this master plan.

#### Comprehensive planning issues:

- ▶ Very strong support for the statement "The identity of communities should be maintained by preserving agricultural and open space between neighboring communities. (89% agreement by respondents.)"
- ▶ Respondents in Carver County generally rate their quality of life as being very high. Parks play a role in the perception of quality of life.

**Environment-related issues:**

- ▶ Respondents were very positive in their response to the statement “The quality of surface water and ground water should be maintained or improved through land use regulation.” (97% agreement by respondents.)
- ▶ Positive response to the statement “Remaining wooded and natural habitat areas in Carver County should be managed to preserve their value” was very high. (95 % plus agreement by respondents.)
- ▶ Positive response to the statement “Public money should be used to buy, preserve, and protect wooded and natural habitat areas” was high. (80% agreement by respondents.)

**Parks and Recreational Needs:**

- ▶ While many of the respondents felt that the park facilities were adequate (91.1%), a majority (56.7 would also support additional park and recreation facilities in Carver County.
- ▶ The use of a combination of public funds and use fees was supported by a majority of respondents (55.6% and 67.3%, respectively).

**Trails and Recreational Needs:**

- ▶ The majority of respondents (71.9%) support the idea of a connected trail system within Carver County.
- ▶ As with parks, the use of a combination of public funds and use fees was supported by a majority of respondents (59.3% and 55.2%, respectively).

**Affect of Survey Results on Master Planning Lake Minnewashta Regional Park**

The survey results suggest that Carver County residents have a great appreciation for parks, trails, and natural resources and feel that they are intrinsically important to their quality of life. Residents also express a strong desire to protect open space and the ecological qualities of land and water. Survey results also suggest that residents feel that making public investments into parks and open spaces is of high value and important to maintaining a high quality of life in their communities.

The public process was structured to allow all interested parties ample opportunity to participate in developing the master plan. In addition to Park Commission meetings, numerous other public meetings were also held to give the public-at-large the chance to voice their opinions and critique planning and design ideas. The following table summarizes these formal points of contact with the public.

*Carver County residents have a great appreciation for parks, trails, and natural resources and feel that they are intrinsically important to their quality of life.*

**Findings from the Public Process**

*The public process was structured to allow all interested parties ample opportunity to participate in developing the master plan.*

Date	Group	Meeting Agenda
November 15, 2001	General open public meeting	Initial meeting with the public to introduce the master planning process and take comment on the value of the park, how well it functions, and issues of concern.
February 6, 2002	Public meeting	Working meeting with citizens to review project scope and consider planning issues in greater detail. Resulted in a written program statement. Included Parks Commission members.
March 13, 2002	Public meeting	Working meeting with citizens to review concept plans. Resulted in selection of a preferred concept that would guide the preparation of the preliminary master plan. Included Parks Commission members.
May 22, 2002	Public meeting	Working meeting with citizens to review the preliminary master plan for the park. Consensus support of the master plan by citizens was reached. Included Parks Commission members.
June 21, 2002	Metropolitan Parks and Open Space staff meeting	Preliminary meeting with staff to review preliminary master plan.
August 14, 2002	Public Open House	Final public meeting to allow citizens to review the master plan prior to formal adoption.
	City of Chanhassen	Review and approval of the master plan by local agency.
	Carver County Parks Commission	Final review and approval of the master plan by the Parks Commission.
	Carver County Board	Final review and approval of the master plan by the Carver County Board.
	Metropolitan Council	Final review and approval of the master plan by the Metropolitan Council.

Collectively, these meetings gave interested citizens ample opportunity to express their views, passions, and concerns about the park. In each case, fruitful information came out of the dialogue that helped shape the final master plan for the park.

## Findings from the Public Process

In general, the findings from the public process validated the recreational trends forecasts presented in this section. The initial public meetings were also fruitful in defining how well the current park functions and how new uses can best be accommodated. After consideration of a number of conceptual ideas, consensus was gained for the master plan presented in this report. The following summarizes the key points made during the initial public meetings as they relate to major development issues.

### Level of Development/Natural Resource Protection:

- ▶ Accommodate the recreational activities that address regional needs as defined by recreational trends and that are appropriate for this particular setting.
- ▶ Strong consensus that development footprint should be kept as small as possible in order to preserve natural open space areas.
- ▶ Ecological stewardship of the park was considered to be of critical importance.
- ▶ The park should complement, not duplicate, services provided in other County and local parks.

### Trails – General:

- ▶ Strong consensus that paved trails should be kept to a minimum and used primarily to link major use areas together and keep bicycles off the main road, which was considered hazardous. Maintaining an extensive network of natural-surfaced trails received very strong public support.
- ▶ The current trails are highly used, but generally the users feel uncrowded when using the trails and like the woody/isolated atmosphere.
- ▶ General consensus that there should be a safe way for pedestrians to enter the park from the trail that will be along the east side of hwy. 41. (Grade separated crossing thought to be needed.)
- ▶ The “conservation area” of the park (north portion) is highly used in the winter for cross-country skiing and is highly regarded for its trails. Improving connections was the primary concern.
- ▶ Limited snowmobile access to the park to a connection between the lake and County Road 41 was strongly supported.
- ▶ Walking with pets is a popular activity in the park and most like to keep it “pro-dog”, with possibly providing an off-leash area in an out-of-the-way area where conflicts would be minimal.

### Boat Launch and Boating Related:

- ▶ Providing boat access to the lake was considered a strong continuing need. Although opinion varied on the most advantageous location for the boat launch, keeping the total number of vehicle-trailer parking spaces to around the current 35 was highly supported.
- ▶ Designing the boat launch so that open spaces could be monitored for availability and safety was found to be a key consideration for boat launch users. Limiting the extent to which vehicles with boat trailers would have to travel through the park to get to the launch was also a key concern.
- ▶ Wind exposure and heavy wave action at the second boat launch was of concern to frequent users, as was concern that at lower water levels the ramp was much harder to use than the first launch, which is deeper.

**Group-Day Camp / Picnic Activities:**

- ▶ Individual groups, such as the Boy and Girls Scouts, currently use the park for group activities and camping. These groups can range in size from less than 100 people to nearly 500. During these visits, most of the park amenities are used, especially those associated with lake and beach activities.
- ▶ These larger groups use the individual picnic areas as well as the large open green space for activities.
- ▶ There are businesses who are in need of places for company picnics, as well as residents with reunions, etc.
- ▶ The new park shelter building is well liked, especially the fact that there are flush toilets located there, but needs more shade.
- ▶ Providing more “family-oriented” picnic areas was thought to be needed to augment the larger shelter structures which are often reserved during the summer season.

**Other Issues:**

- ▶ There are many people who felt that Carver Park, which is close by, provides a lot of paved trails, rentals, and more highly developed activities and the arboretum provides the garden type of atmosphere. As such, Minnewashta should remain a natural park to complement the others.
- ▶ It was felt by many that a better entrance sequence would be beneficial. They would like a friendlier entrance (currently there is a “warning” sign that you see first). Also, the entrance is hard to identify from County Road 41.
- ▶ Place significant emphasis on restoring the natural landscape to the park.
- ▶ Provide reasonable access to the park for vehicles and pedestrians. Limit vehicle access to one location to minimize the built infrastructure.
- ▶ Make trail connections to local and regional trails to expand visitor recreational opportunities.
- ▶ Create a master plan that is aesthetically appealing as viewed from within and outside the park, as well as from the lake.

## Conclusions

*It is clear that Lake Minnewashta Regional Park is an essential component of the regional park system.*

In consideration of the regional trends and findings of the public process, it is clear that Lake Minnewashta Regional Park is an essential component of the regional park system and will be vital to servicing the recreational needs of residents within Carver and adjoining Hennepin Counties and the larger region.

## Section III

# Existing Conditions of the Site and Ecological Resources

### Overview

As the aerial in figure 3.1 illustrates, Lake Minnewashta Regional Park displays an impressive assemblage of natural landscape features. The existing development provides access to the park and facilities that support common, in-demand recreational activities. Although there are many opportunities for continued enhancement, the innate quality of the site in combination with the existing development provides a strong foundation from which to work. This section provides an overview of the site and its ecological resources.

### Existing Site Conditions

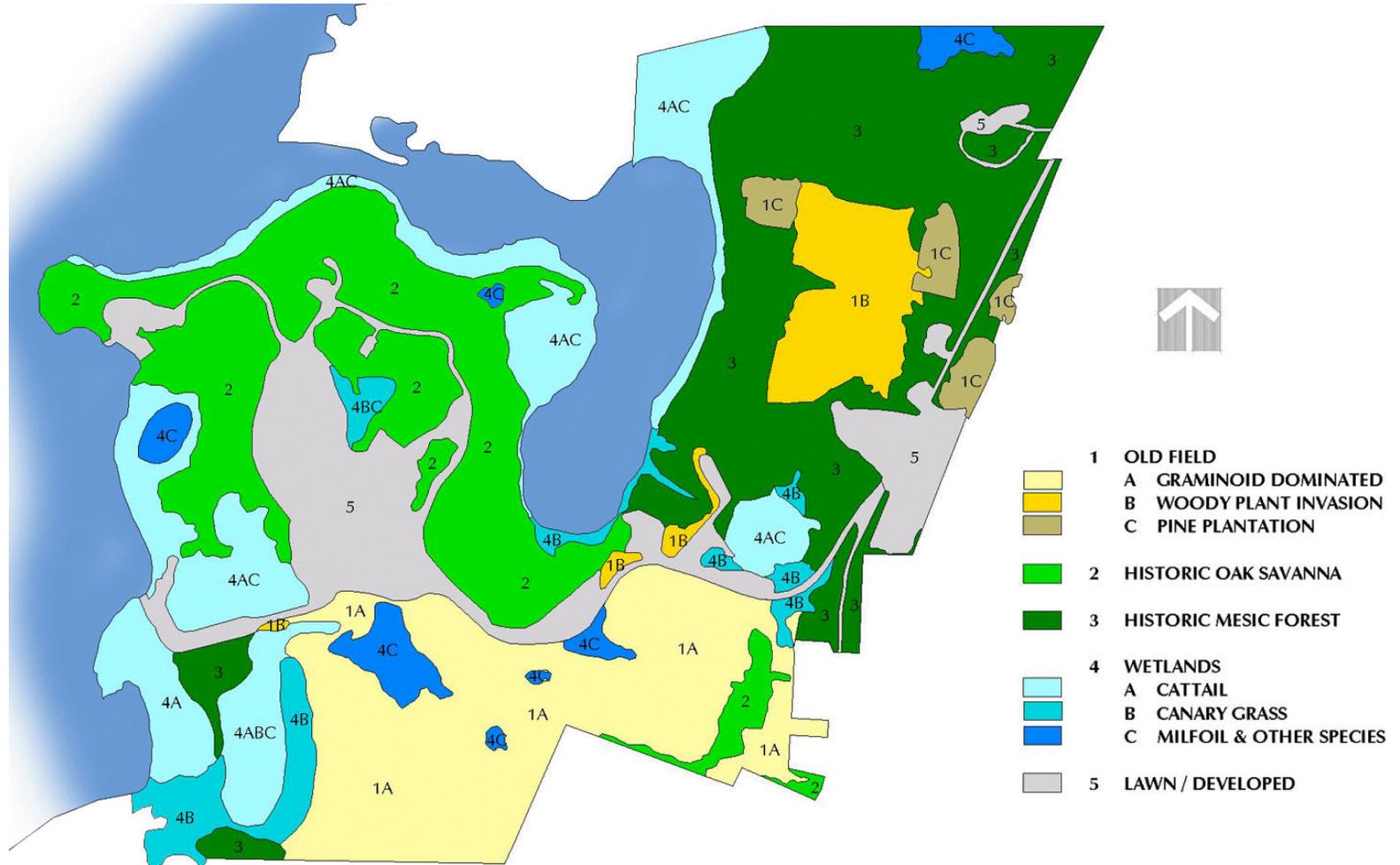
Figure 3.1 provides an overview of the existing conditions and developed uses within the park. As illustrated, the major development features are laid out in a linear fashion along the existing roadway system. Each of these developed uses are considered in greater detail in Section V - Development Master Plan.

Figure 3.1 – Aerial view of Lake Minnewashta Regional Park, with major developed features identified.



In concert with the analysis of development features as shown in figure 3.1, natural land cover types – which define the macro ecological systems found across the park – were also considered. As shown in figure 3.2, the ecological delineation mapping was divided into five general categories: old fields, historic oak savanna, historic mesic forest, wetlands, and lawn/developed area. Although remnants of historic native plants still remain, many of the natural systems have been either disturbed over the years or are becoming degraded due to lack of consistent stewardship.

Figure 3.2 – Ecological delineation map of the park.



*Although much has been learned about the park, much remains to be learned about its ecological systems.*

*Inland wetland systems are dominated by monocultures of reed canary grass, cattails, and bulrushes.*



The existing site conditions and land cover mapping shown in figures 3.1 and 3.2 represent the findings of field reconnaissance that was conducted in the fall of 2001 and spring of 2002 to discover the general condition of the park and define the native ecological communities that remain. This investigation proved fruitful in documenting the existing conditions found across the site and the ecological issues being faced. The information and mapping presented in this section was prepared for master planning purposes and to establish an underpinning for the ecological stewardship plan defined in Section IV.

Although much has been learned about the park, much remains to be learned about its ecological systems – especially in the context of restoring and managing these resources to more robust natural systems. Given this, the information presented here serves primarily as a primer for developing a stewardship program that is specifically tailored to the scientific nuances and challenges affecting the park.

The following considers the general condition of the predominant ecological systems/ vegetative communities found within the park as defined by the aforementioned categories.

## Wetland Systems

Most of the wetlands within the park have been significantly altered over the years since settlement has occurred. As shown in figure 3.2, many of these wetlands have transitioned from vibrant and diverse systems to monocultures of plant species that have adapted to changes in surrounding land uses and unnatural fluctuations in water levels. With the hydrological changes that have occurred over the years for various reasons, most of the park's wetlands have deteriorated to a substantial degree. This is especially true along the lake edges, where plant species diversity is very limited. Although remnants of native plants can be found, the wetlands and lake edges are dominated by bulrushes, cattails, reed canary grass, and, increasingly, purple loosestrife. In recent years, Carver County Parks has completed a wetland expansion project and restoration of wetland plant communities near the first boat launch, with mixed success. A long-term stewardship approach to managing these areas would help ensure that they would not degrade further over time.

Significant changes in nutrients and biogeochemical cycling in the park's wetlands and lake edges was also apparent. Changes to stormwater runoff patterns and flows along with fluctuations in lake levels are likely contributing sediments, nutrients, and other contaminants into the wetland systems. In areas where the groundwater level in wetlands may have been changed, decomposition and the liberation of nitrogen, phosphorus, and other nutrients into wetland systems is likely to be occurring. Although not investigated in this study, the ecological changes observed suggest that the surface water and perhaps shallow water and groundwater chemistry may have been altered by the addition of higher levels of macro-nutrients, resulting in the hypereutrophic conditions (i.e., reduced oxygen levels) of the wetlands.

In spite of the current conditions, there are tremendous opportunities for restoring the wetland systems within the park. Primary consideration needs to be given to long-term management of invasive species that have invaded the park's wetlands, along with addressing hydrological changes where possible.

*Lake edges are almost completely covered with monocultures of reed canary grass, cattails, and bulrushes. Purple loosestrife is also becoming a major concern.*



*Although disturbed, the wetland systems within the park are important aspects of its overall character and natural qualities.*



*The large open area south of the park drive offers a compelling landscape. Restoring these old field and pasture areas to a more diverse prairie community would add significantly to the park's biodiversity and natural aesthetic qualities.*



## Old Fields

Prior to the land being set aside for park purposes, much of the open land was cultivated for agriculture or used for pastures. Although there are notable areas where native plant species have come back over the years, most the old fields are now dominated by weedy species such as broom grass and other non-native grasses. In one instance, an attempt was made to restore an old field to a forest landscape. Unfortunately, the approach that was taken did not yield any meaningful success.

Invasion by woody plants is also occurring, especially in the open field areas of the north-eastern part of the park. Fortunately, in most cases, the open field areas can be restored to healthier native prairie systems or transitioned to savanna or mesic forest systems through a well-conceived stewardship program.

*The once open pasture land on the northeast side of the park is slowly being inundated with woody plants, many of which are non-native species.*



## Forest Systems

The following provides a summary of the natural forest systems that are found across the park.

*With the understory being dominated by invasive plants such as buckthorn, there is little opportunity for new oaks to take root and prosper. Unfortunately, as the older trees reach pathological maturity, they become susceptible to disease and wind blow.*



*The beautiful mature oaks scattered along the existing road are one of the compelling reasons to visit the park. Preserving these qualities is one of the key challenges facing the park.*



**Oak Savanna Systems:** These systems are typically dominated by bur oak, northern pin oak, northern red oak, white oak, and native and introduced forbs, grasses, sedges, and shrubs. These historic oak savannas exist in fairly broad areas of the park where topography is higher and drier with excessively- to well-drained sand to loam soils and on south and west exposed sites. In most instances, the historic character of the oak savannas has been lost to varying degrees due to the lack of natural disturbances (e.g., fire) and resource management. Oak savanna areas within the park are currently characterized by relatively isolated oaks within an often dense canopy of other tree and shrub species. Understory vegetation, formerly consisting of native prairie, has been invaded and replaced by species such as European buckthorn and boxelder. The resulting shade suppression has greatly reduced the existing ground cover and native understory vegetation. Scattered light gaps in the canopy enable patches of certain species to grow, including red maple saplings, cluster-leaf tick-trefoil, Pennsylvania and other upland sedges, common enchanter's nightshade, false Solomon's seal, and thimbleweed.

The oak savannas have experienced significant degradation to the point where substantial erosion of the topsoil is occurring due to lack of ground cover vegetation. Topsoil loss is associated with the loss of the long-lived seeds, roots, tubers, bulbs, and other plant stock from the soil. Significant dieback was also observed on lower branches of bur oaks from the dense shading caused by the associated overstocked canopy. However, in several areas oak regeneration was observed to be occurring, suggesting that through proper management, the oak savanna system can be reinvigorated within the park. Unfortunately, in the majority of cases, the oaks are not regenerating themselves, leaving only older trees that are nearing their pathological maturity that are more susceptible to disease and wind blow-down.

The deterioration of the park's oak savannas follows a process of degradation that has been documented by previous studies throughout the upper Midwest. The results of such trends include a precipitous decline in native vascular plant and breeding bird species richness, severe erosion, and reduced opportunity for restoring these savanna systems with increasing time since the onset of decline. Prompt attention should be given to halting and reversing this trend of degradation by implementing a well thought-out restoration and management program.

**Maple-Basswood Forest:** Although somewhat less dominant than the oak savannas, this forest system is also historically found within the park, primarily on the north-facing slopes and more protected areas. In contrast to the savanna systems, this system offers a more diverse assemblage of tree, shrub, and herbaceous plant species. The canopy is typified by 40 to over 100 year-old sugar maples, basswoods, green ash, and red oaks, as well as some ironwood and black cherry in the understory.

*Recently developed forest systems in degraded condition dominate areas adjacent to wetland systems and into the edges of mesic forests. Although naturally occurring, left unmanaged these systems can soon dominate and out-compete other native species.*



As with the savanna systems, European buckthorn and other aggressive species have invaded much of this forest type, resulting in areas of severe shade suppression. This phenomenon results in reduced ground cover vegetation and limits the potential for native plants to compete with invading species. The lack of healthy ground cover vegetation, combined with the moderate to steep slopes, creates conditions where mesic forest systems are often subject to severe erosion. This erosion not only exposes root systems and removes native seeds and other propagules, but also results in down slope deposition, which may either smother native upland soils or cause sedimentation in wetlands. A lack of tree regeneration was also observed in this forest type.

**Recently Developed Forest in Degraded Condition:** Although not specifically mapped, these systems are comprised of the early invading species such as box elder, green ash and red elm. These areas occupy fallow fields, former wetland soils that had been drained and fallowed from agricultural land uses for 20-50 years, spoil piles along ditches, and wetland margins where successional tree species have invaded and caused shade suppression of the native, soil-stabilizing vegetation. In almost all cases where the early successional forest trees have developed, the ground cover vegetation system has collapsed and is represented by only a few shade tolerant species. Often the canopy, which is usually closed, includes dense growths of European buckthorn and other shrubs that are semi- to completely shade tolerant. The influence of shading by young trees and buckthorn has contributed to the decline of the native, soil-stabilizing vegetation. These are typically depauperate (stunted), low diversity, unstable systems, whereby many of the early successional species found there have short life spans and are beginning to show major senescence or mortality, particularly red and Siberian elm and boxelder.

Where this vegetation occurs along the wetlands and along the shore of the lake, it will contribute substantial woody debris to the adjacent aquatic systems, which contributes to bank erosion, and other aquatic maintenance issues that are costly to restore.

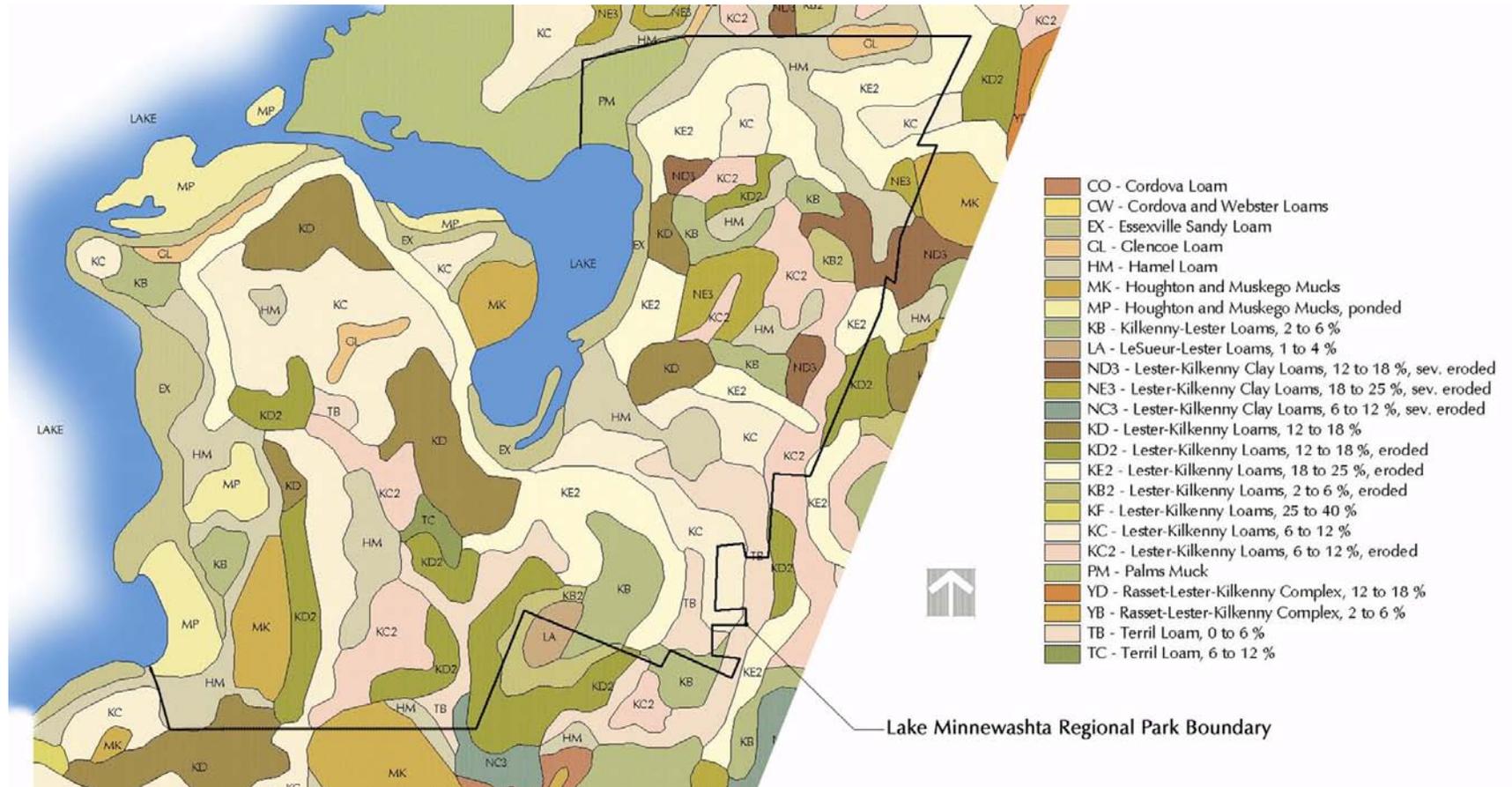
**Pine Plantations:** In several areas of the park, pine plantations were established 20 to 30 years ago. Managing these areas through thinning and removal should be part of the stewardship program for the park. Over time, removal of these pine stands and restoring these areas to plant communities that have a more historical context would be appropriate and desirable.

## Site Soils and Their Affect on Master Plan Outcomes

In concert with vegetative analysis, review of the soil conditions is important to discerning what the historic landscape would have looked like in terms of native plant communities and ecological systems. It also proves valuable in understanding the buildability of selected sites for developed uses. Figure 3.3 on the next page provides an overview of soil characteristics found across the park.

In general, the existing development footprint is located in areas where the soils are reasonably conducive to supporting built structures. Since the physical master plan for the park as presented in this document generally stays within the existing development envelope, the propensity for encountering severe soil conditions is more limited. The qualifier to this is that soils in this region are highly variable within relatively short distances. Therefore, evaluation of site-specific soil conditions at the time when specific developments are to occur will be an inherent and important aspect of development planning.

Figure 3.3 – Soil characteristics found across the park.



## Conclusions Regarding Existing Conditions

Although there are some significant ecological issues that must be addressed, the 341 acres of land that the park encompasses is truly impressive and an important respite from the built suburban form. Through a well thought-out restoration and management plan, many of the natural systems can be restored to more closely represent their historic character.

From a redevelopment standpoint, the existing development envelope generally provides the necessary space to accommodate new development for servicing emerging needs without compromising the park's natural qualities. As defined in *Section V – Development Master Plan*, transitioning some of the existing infrastructure (e.g., roadways) into new uses (e.g., trails) and consolidating other uses (e.g., boat launches) is instrumental in keeping the built footprint compact yet proficient at servicing the public demand for recreational activities.

## Section IV

# Ecological Stewardship and Water Resources Management

### Overview

*Ecological stewardship refers to the thoughtful care of ecological systems to preserve their natural qualities and character.*

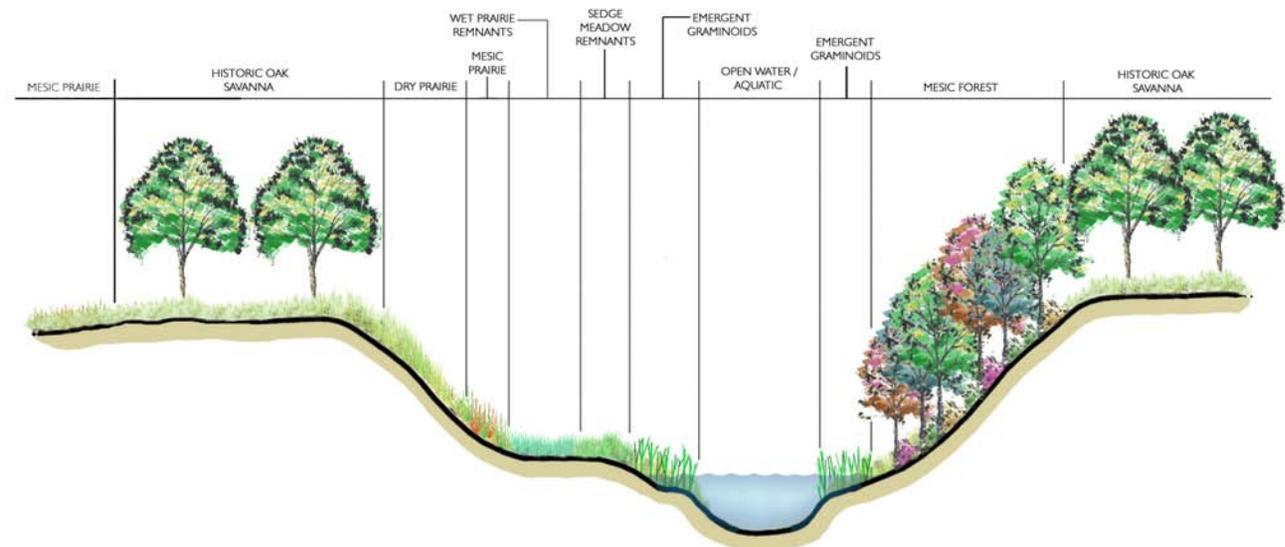
Ecological stewardship refers to the thoughtful care of ecological systems to preserve their natural qualities and character, which are intrinsic to the park's values as a place of natural beauty and respite from the built environment. For the long-term ecological health of the park, a well-defined, ongoing stewardship plan will be needed. This is especially true in this case, where much of the site has been used for agriculture and pasture land in the past and will require significant investment in ecological restoration as part of implementing the master plan.

The forthcoming stewardship plan provides a framework for restoring and managing the natural resources within Lake Minnewashta Regional Park. The plan relies heavily on human intervention as a surrogate for the natural cycles that no longer exist due to past human use of the land, introduction of invasive alien plants, and cessation of natural phenomenon (e.g., fire) since settlement first occurred. The plan also articulates a vision for water resources management that also relies on natural processes over engineered solutions.

### A Historically Diverse Landscape

Figure 4.1 illustrates the basic relationships between the ecological systems historically found across the park. As shown, the diversity of plant assemblages was very broad, ranging from aquatic zones along the lake to upland savanna and prairie systems.

*Figure 4.1 – Relationship between selected ecological systems common to the park.*



As defined in Section III, much of the park's landscape diversity has been compromised due to past land use decisions long before the park was created. Although challenging, realizing a more diverse and healthy natural landscape is achievable and is the focus of the remainder of this section.

## Achievability and Sustainability of Ecological Stewardship Programs

*It is important to recognize that restoring and managing ecological systems must be done in a manner that is both achievable and sustainable.*

*A successful program requires a full understanding of the ecological problems being faced and a defined course of action that is based on science.*

*From an economic perspective, what is achievable and sustainable is based on the amount of human and economic capital that Carver County and the Metropolitan Council can commit to ecological programs now and in the future.*

It is important to recognize that restoring and managing ecological systems must be done in a manner that is both achievable and sustainable. Achievable refers to what is scientifically *and* economically feasible. Sustainable refers to the level to which restoration and management programs can be scientifically *and* economically sustained over an extended period of time. The following considers achievability and sustainability from the two distinct but interrelated perspectives of ecology and economy (human/economic capital).

### Ecological Perspective

From an ecological perspective, what is achievable and sustainable is defined in scientific terms based on testing and research. Scientifically, human intervention through well thought-out programs that are carefully implemented over a period of time can help to reverse the current downward trend in the ecological quality of the park's natural systems (as measured by biodiversity and general ecological health). A successful program requires a full understanding of the ecological problems being faced and a defined course of action that is based on science. As defined in this section, human intervention will be required simply due to the fact that a substantial amount of the property has been altered over time.

Although dramatic improvements can be made in some cases, restoring the landscape to pre-settlement conditions is not realistic from a scientific perspective. Past impacts to the land since man first settled and introduction of invasive alien plants simply preclude this possibility. However, it is achievable to restore and manage ecosystems to sustainable and productive levels that result in considerable human and ecological value and that can be perpetuated for generations to come. The key point here is that Carver County and the regional community must set realistic goals and expectations as to what can be achieved through restoration and management programs.

### Economic (Human/Economic Capital) Perspective

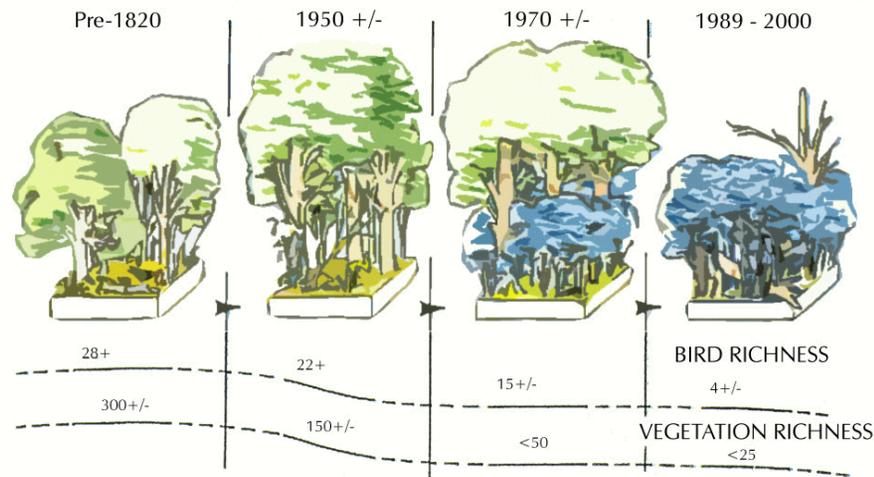
From an economic perspective, what is achievable and sustainable is based on the amount of human and economic capital that Carver County and the Metropolitan Council can commit to ecological programs now and in the future. The importance of this cannot be overstated in that the long-term viability of any ecological program undertaken is directly related to the long-term commitment made to it in terms of human and economic resources. Ultimately, how the collective community values land stewardship and ecological health relative to other quality of life issues will define the extent to which ecological programs can be successfully implemented. Recognizing this, it is critical that Carver County and the Metropolitan Council time ecological programs in a pragmatic and paced manner that keeps pace with available economic resources.

## Spectrum of Opportunity for Restoration of Ecological Systems

Without human intervention and conscientious ecological stewardship, it is expected that the overall trend of the ecological systems within the park will continue to decline, as measured by bio-diversity and general ecological health. Figure 4.2 graphically illustrates the ecological trend in a typical historic oak savanna system found in this and many other midwestern regions. This example is reflective of the type of trends that are apparent to varying degrees in all of the ecological systems found within the park. Figure 4.3 graphically illustrates the current overall trend in ecological quality. It also defines the spectrum of opportunity for reversing this trend.

Figure 4.2 – Ecological Trend in Typical Oak Savanna System

Presettlement savanna often had an open canopy of scattered oak, little to variable shrub understory, and rich biotic diversity. With fire exclusion, trees and shrubs soon invade and eliminate many of the herbaceous species. Eventual closure of the subcanopy prevents oak regeneration and leads to loss of most herbaceous species and a remarkable decline in breeding avifauna (bird) richness. The following illustrates this trend in a typical historic oak savanna system. (Note: Time is estimated)



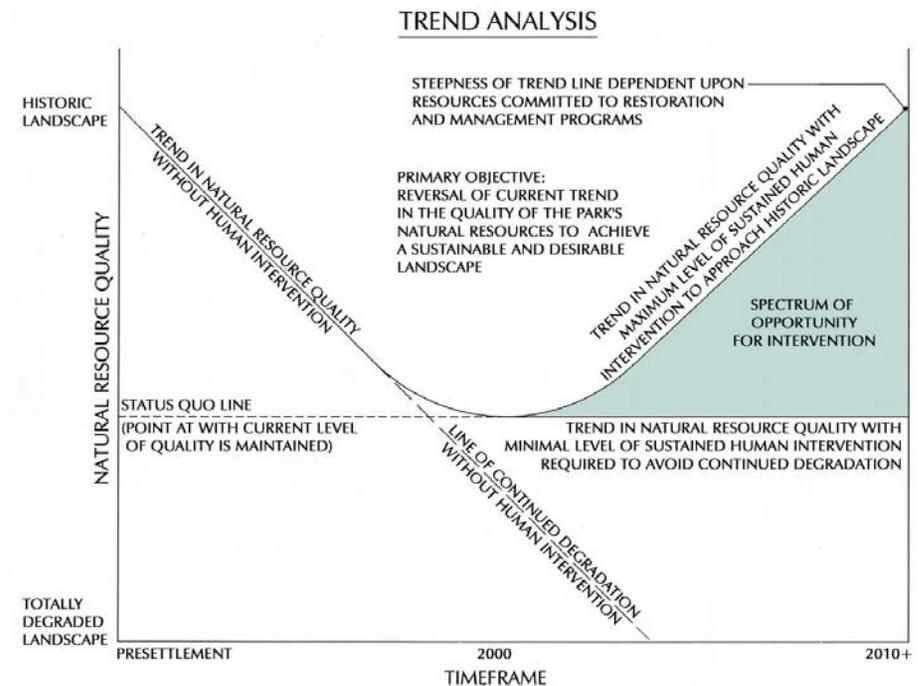
*The goal of the stewardship program is to identify restoration and management needs in scientific terms and define strategies that can reverse these trends.*

The impact of human activities since settlement coupled with the curtailment of naturally-occurring events (wildfires) have served to change the ecological balance and character of the park. Some of these impacts will have lasting affects, while others can be addressed to forestall further degradation and help ensure a sustainable and healthy landscape for future generations. Given this reality, the goal of the stewardship program is to identify restoration and management needs in scientific terms and define strategies that can reverse these trends.

The framework presented here suggests that Carver County seek to achieve a sustainable landscape quality, which is defined as the point at which the park district can indefinitely maintain a certain acceptable level of resource quality within the context of realistic limits. This sustainable level is contingent upon two primary factors:

- ▶ Public understanding of and commitment to land preservation and stewardship programs.
- ▶ Undertaking ecological restoration and management programs that are scientifically sound.

Figure 4.3 - Trend Analysis



## Ecological Stewardship Philosophy

*The plan outlined here promotes an ecological system-based approach to restoration and management.*

The plan outlined here promotes an ecological system-based approach to restoration and management. An ecosystem is essentially where things live and represents an interacting group of physical elements (soils, water, plants, animals, and human communities, etc.) that inhabit a particular place. All of these elements and their interactions need to be considered in developing goals and plans for management. Ecosystem-based management views people as part of the community, and that maintaining a healthy ecosystem is the best way to meet human needs as well as those of other organisms in the community. General goals of this philosophy are to:

- ▶ Protect or enhance the health of the ecosystems in Lake Minnewashta Regional Park.
- ▶ Enhance the biological diversity of its native habitats.
- ▶ Provide an appropriate balance between resource preservation and recreational use.

Through a well-defined stewardship program and a concerted, ongoing effort by Carver County, a certain level of confidence can be gained that the current ecological conditions and trends can be reversed and a more sustainable and higher quality landscape achieved. Note, however, that stewardship programs need to be flexible due to the changing nature of the ecological systems addressed by the plan. For these reasons, the framework presented here should be viewed as being neither conclusive nor absolute. It is a starting point in an ongoing process that relies on monitoring to provide feedback on program effectiveness and for evaluation of the need for any changes in approach.

## Ecological Prototypes for Unaltered and Altered Ecological Systems

*Ecological prototypes are defined along topographic, soil type and hydrological gradients from high-dry uplands to lowlands and wetlands.*

In this context, ecological prototypes refer to vegetative species models for the various ecological systems found within the park. Prototypes assist restoration and management efforts by helping compare existing conditions against measurable criteria for healthy ecological systems and in recognizing possible causative agents that result in ecological changes. By recognizing what a healthy ecological system looks like, specific targets or models for management and restoration programs can be developed and implemented.

Ecological prototypes are defined along topographic, soil type and hydrological gradients from high-dry uplands to lowlands and wetlands. Based on an initial review of the park, both unaltered and altered ecological prototypes can be found (although unaltered systems are limited to isolated pockets). In unaltered areas, depending on soil types and hydrology, different plant and animal communities have developed over long periods of time and have persisted even to present day under less than ideal circumstances. On these same soil types, alteration of hydrology through land drainage and wetland or lake margin filling along with cessation of natural processes have created changes in the plant (and animal) communities. Each of the unaltered and altered types of plant and animal communities fall within a definable ecological prototype.

The following descriptions define some of the *typical* prototypes for healthy (unaltered) and unhealthy (altered) ecological systems found within the park. Figure 4.1 on page 4.1 provided a character sketch of how these selected prototypes relate to each other. Lacking greater technical evaluation and in-field research, the prototypes presented here serve as a starting point as Carver County moves forward with its stewardship program. Although these prototypes are not exhaustive, they do articulate the fundamental qualities between healthy and unhealthy ecological systems found within the park.

## Historic Oak Savanna



### Healthy Systems

#### General Structure

- ▶ Semi-open to open tree canopy
- ▶ Multiple age classes of trees
- ▶ Dominant cover of native grasses, sedges, and forbs
- ▶ Natural oak regeneration
- ▶ Sporadic native shrub layer
- ▶ High light levels interspersed with partial/isolated shade

#### Soils Profile/Topography/Hydrology

- ▶ Well drained silt, clay and sand loams, gravelly sands, alluvium glacial features
- ▶ Higher and dry sites, and moist, well drained soils

#### Indicator Species of Healthy System

- ▶ Bur oak
- ▶ Northern pin oak
- ▶ White oak
- ▶ Savanna groundlayer species

#### Associated Species

- ▶ Pennsylvania sedge
- ▶ Silky and Virginia wild rye
- ▶ Bottlebrush grass
- ▶ Other sedges
- ▶ American hazelnut
- ▶ Little bluestem



### Unhealthy Systems

#### General Structure

- ▶ Continuous, closed canopy
- ▶ Dense layer of non-native shrubs
- ▶ Bare, eroding soil
- ▶ Low light levels, predominant dense shade
- ▶ No oak regeneration
- ▶ Few or no young age classes of trees
- ▶ Lack of native groundcover vegetation
- ▶ Encroachment by development or agriculture

#### Indicator Species of Unhealthy System

- ▶ European buckthorn
- ▶ Tartarian honeysuckle
- ▶ Black locust
- ▶ Boxelder
- ▶ European brome, Kentucky bluegrass, and other non-native grasses
- ▶ Agricultural weed species and brambles

## Protection and Management Considerations

### Causes of Change

- ▶ Cessation of historic fire regimes
- ▶ Destruction due to urban development
- ▶ Invasion of competing non-native shrubs
- ▶ Encroachment of adjacent development with associated pollutants
- ▶ Intensive grazing and agricultural practices
- ▶ Change in hydrologic regime (drier or wetter)

### Restorative Capacity

- ▶ Highly restorable under well-designed and implemented restoration and management program
- ▶ Highly disturbed sites may require replanting of native species, especially ground cover, if native seed bank is absent

### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection of this type of system (similar to the way that wetland ordinances protect wetland systems)
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Maple-Basswood Forest



### Healthy Systems

#### General Structure

- ▶ Mixed canopy of oaks, ash, maple, and basswood
- ▶ Predominated by cool season grass and sedge ground cover

#### Soils Profile/Topography/Hydrology

- ▶ Found in isolated or protected locations, steep draws, and on landscape islands
- ▶ Topography ranges from level ground to rolling and steep grades
- ▶ Loam and fine sandy loam

#### Indicator Species of Healthy System

- ▶ Basswood
- ▶ Sugar maple
- ▶ Red oak
- ▶ Green ash
- ▶ Ironwood
- ▶ Woodland sedges
- ▶ Spring wildflowers (trilliums and spring beauty)

#### Associated Species

- ▶ Sedges, such as Pennsylvania sedge
- ▶ Shrubs, such as pagoda dogwood



### Unhealthy Systems

#### General Structure

- ▶ Shift to even canopy, with limited age groups of trees
- ▶ Dense understory
- ▶ Bare soil after spring ephemerals die back
- ▶ Noticeable soil erosion

#### Indicator Species of Unhealthy System

- ▶ Boxelder
- ▶ European buckthorn
- ▶ Canary grass
- ▶ Motherwort
- ▶ Thistles
- ▶ Burdock
- ▶ Rough bedstraw
- ▶ Stinging nettles

## Protection and Management Considerations

#### Causes of Change

- ▶ Cessation of light ground fires
- ▶ Loss of seedbank and erosion
- ▶ Weed invasion and agricultural practices
- ▶ Altered hydrology, whether drier or wetter
- ▶ Logging disruption of composition, structure, light, and nutrient regimes
- ▶ Livestock grazing causing weeds and tree damage

#### Restorative Capacity

- ▶ Highly restorable under well-designed and implemented restoration and management program
- ▶ Highly disturbed sites may require replanting of native species if native seed bank is absent

#### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection of this type of system (similar to the way that wetland ordinances protect wetland systems)
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Upland Prairie Systems



### Healthy Systems

#### General Structure

- ▶ High biodiversity – plants, insects, birds, and other animals
- ▶ High diversity of native plant species
- ▶ Predominance of warm-season grass species
- ▶ Natural succession and progression toward conservative species
- ▶ Full to nearly full sun
- ▶ Drought tolerant

#### Soils Profile/Topography/Hydrology

- ▶ Moderate to well drained, fine textured sands and sandy loams
- ▶ Higher and dry sites, most often associated with flat terraces or gentle slopes

#### Indicator Species of Healthy System

- ▶ Big bluestem
- ▶ Little bluestem
- ▶ Side-oats grama
- ▶ Purple prairie clover
- ▶ Leadplant
- ▶ Sky blue aster
- ▶ Prairie coreopsis
- ▶ Partridge pea
- ▶ Flowering spurge
- ▶ Blue giant hyssop
- ▶ Compass plant
- ▶ Prairie dock

#### Associated Species

- ▶ Literally hundreds of associated species



### Unhealthy Systems

#### General Structure

- ▶ Low biodiversity – plants, insects, birds, other animals
- ▶ Predominance of weedy, non-native vegetation
- ▶ Absence of ecological functions
- ▶ Loss of water infiltration
- ▶ High soil erosion potential
- ▶ Invasion by woody species
- ▶ Nutrient enrichment
- ▶ Tile drained or ditched, resulting in altered hydrology

#### Indicator Species of Unhealthy System

- ▶ European brome and other non-native grasses
- ▶ Ragweed
- ▶ Mare's tail
- ▶ Queen Anne's lace
- ▶ Canada thistle
- ▶ Wild parsnip
- ▶ Woody species such as sumac, black cherry, boxelder, and Siberian elm

## Protection and Management Considerations

#### Causes of Change

- ▶ Introduction of post settlement agriculture practices and livestock grazing
- ▶ Soil disturbance from urban development
- ▶ Cessation of periodic fire
- ▶ Invasion of competitive, non-native plants
- ▶ Change in hydrologic regime (wetter or drier)

#### Restorative Capacity

- ▶ Highly restorable under well-designed and implemented restoration and management program
- ▶ Highly disturbed sites may require replanting of native species if native seed bank is absent

#### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection of this type of system (similar to the way that wetland ordinances protect wetland systems)
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Wet Prairie Remnants



### Healthy Systems

#### General Structure

- ▶ Patchy, patterned plant communities reflecting soil and hydrological gradients
- ▶ High biodiversity – plants, insects, birds, and animals
- ▶ High diversity of native grasses and forbs
- ▶ Predominance of native grass, sedge, and forb species of low, moist-to-wet soils
- ▶ Natural succession and progression toward conservative species
- ▶ High groundwater table and often groundwater-based hydrology
- ▶ Full to nearly full sun

#### Indicator Species of Healthy System

- ▶ Prairie cordgrass
- ▶ Canada bluejoint
- ▶ New England aster
- ▶ Virginia mountain-mint

#### Associated Species

- ▶ Extensive variety of other native grasses, sedges, and forbs

#### Soils Profile/Topography/Hydrology

- ▶ Shallow organic soils
- ▶ Soils are saturated in the spring and dry out as year progresses



### Unhealthy Systems

#### General Structure

- ▶ Altered hydrology due to de-watering
- ▶ Heavy invasion by woody growth
- ▶ Invasion by non-native reed canary grass
- ▶ Homogenous vegetation and low pattern of diversity

#### Indicator Species of Unhealthy System

- ▶ Reed canary grass
- ▶ European buckthorn
- ▶ Glossy buckthorn
- ▶ Overstocked dogwoods
- ▶ Purple loosestrife
- ▶ Stinging nettles
- ▶ Redtop

## Protection and Management Considerations

#### Causes of Change

- ▶ Draining of soils for agriculture tillage
- ▶ Cessation of wild fire and overgrazing
- ▶ Hydrologic changes due to urban development and a change to surface water rather than groundwater dependent hydrology
- ▶ Nutrient enrichment from dewatered substrates and offsite introduction
- ▶ Salt and fertilizer loading

#### Restorative Capacity

- ▶ Potential to be restorable under well-designed and implemented restoration and management program in cases where off-site factors can be controlled
- ▶ Highly disturbed sites may not be realistically restored due to extent of past degradation and uncontrollable off-site factors
- ▶ Restoration may require replanting of native species if native seed bank is absent

#### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection, with a particular focus on upland buffer systems and storm water treatment trains
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Sedge Meadow Remnants



### Healthy Systems

#### General Structure

- ▶ High biodiversity – plants, insects, birds, and animals
- ▶ High diversity of native sedges and forbs
- ▶ Domination by sedges, rushes, reeds and grasses

#### Soils Profile/Topography/Hydrology

- ▶ High groundwater table
- ▶ Shallow to moderate organic substrates

#### Indicator Species of Healthy System

- ▶ Tussock sedge
- ▶ Lake sedge
- ▶ Canada bluejoint
- ▶ Wool grass
- ▶ Marsh milkweed
- ▶ Swamp aster
- ▶ Sawtooth sunflower

#### Associated Species

- ▶ Swamp dock



### Unhealthy Systems

#### General Structure

- ▶ Altered hydrology due to de-watering or too much water
- ▶ Heavy invasion by woody growth
- ▶ Invasion by non-native reed canary grass

#### Indicator Species of Unhealthy System

- ▶ Glossy buckthorn
- ▶ Reed canary grass
- ▶ Overstocked dogwoods
- ▶ Purple loosestrife

## Protection and Management Considerations

### Causes of Change

- ▶ Sediment, nutrient and contaminant loading from disturbed uplands
- ▶ Soil disturbance from development
- ▶ Cessation of periodic fire
- ▶ Invasion of competitive, non-native plants
- ▶ Change in hydrologic regime (wetter or drier)

### Restorative Capacity

- ▶ Potential to be restorable under well-designed and implemented restoration and management program in cases where off-site factors can be controlled or mitigated
- ▶ Highly disturbed sites may not be realistically restored due to extent of past degradation and uncontrollable off-site factors
- ▶ Restoration may require replanting of native species if native seed bank is absent

### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection, with a particular focus on upland buffer systems and storm water treatment trains
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Emergent Graminoids (Sedges, Grasses, and Rushes)



### Healthy Systems

#### General Structure

- ▶ Shallow, open water communities
- ▶ Water depths less than 2 meters (6.6 feet)
- ▶ Emergent, submergent, floating and floating-leaved aquatic vegetation
- ▶ Presence of habitat and communities of waterfowl, amphibians, fish, furbearing mammals and invertebrates

#### Soils Profile/Topography/Hydrology

- ▶ Sand and gravels or shallow bedded organic matter

#### Indicator Species of Healthy System

- ▶ Bur-reed
- ▶ Arrowhead
- ▶ Bulrushes
- ▶ Water plantain
- ▶ Pondweeds
- ▶ Water lilies
- ▶ Coontail

#### Associated Species

- ▶ Various sedges and native shrubs



### Unhealthy Systems

#### General Structure

- ▶ Sustained high water levels or drastic level changes
- ▶ Nutrient, sediment and toxic chemical loading from uplands and roadways
- ▶ Dominance by cattail, giant reed grass, and reed canary grass

#### Indicator Species of Unhealthy System

- ▶ Purple loosestrife
- ▶ Cattail
- ▶ Giant reed grass
- ▶ Reed canary grass
- ▶ Eurasian water milfoil
- ▶ Duckweed
- ▶ Excessive bulrushes

## Protection and Management Considerations

### Causes of Change

- ▶ Increased runoff due to upland development
- ▶ Damming and impoundment of waters
- ▶ Industrial and agricultural runoff
- ▶ Nutrient enrichment

### Restorative Capacity

- ▶ Potential to be restorable under well-designed and implemented restoration and management program in cases where off-site factors can be controlled or mitigated
- ▶ Highly disturbed sites may not be realistically restored due to extent of past degradation and uncontrollable off-site factors
- ▶ Restoration may require replanting of native species if native seed bank is absent

### Protection Strategy

- ▶ Adopt land development practices that place a high priority on ecological protection, with a particular focus on upland buffer systems and storm water treatment trains
- ▶ Implement an annual, long-term restoration and management plan
- ▶ Protect historic hydrologic regime/systems

## Refinement of Ecological Prototypes

As part of the prototype refinement process, Carver County Parks is encouraged to utilize the Minnesota Department of Natural Resources' Minnesota Land Cover Classification System (MLCCS) where it has application as part of the stewardship program. This classification system, which is very extensive, is very useful for defining natural ecosystems (although it is a bit more limiting in addressing developed or agricultural systems). Whereas the classification system used for the master plan is comprehensible for the lay person to understand and provides needed guidance for planning purposes, additional refinement using the MNDNR system has merit as the master plan moves from planning to implementation.

## Effect of Healthy and Unhealthy Ecological Systems on Wildlife

*As would be expected, there is a marked effect on the species richness of wildlife when ecological systems become degraded.*

As would be expected, there is a marked effect on the species richness of wildlife when ecological systems become degraded. What is perhaps not expected is the degree of decline that can entail. To illustrate this point, the forthcoming table defines the decline of breeding bird species between healthy and unhealthy ecological systems.

### Breeding Bird Species Associated with Healthy Ecological Systems

Prairie	Sedge Meadow	Emergent	Savanna	Lakes
Bobolink	Yellow warbler	Hérons	Flicker	Tern
Blue bird	Willow fly catcher	Rails	Bluebird	Cormorant
Brown-headed cowbird	Yellow throat	Ducks, grebes	G. crested flycatcher	Merganser
Grasshopper sparrow	Red winged blackbird	Swamp sparrow	Robin	Duck
Vesper sparrow	Goldfinch	Red winged blackbird	Catbird	Grebe
Western meadow lark	Swamp sparrow	Sora rail	Cardinal	Coot
Song sparrow	Short/long billed marsh wren	Mallard	Blue jay	
Gold finch	Kingbird	Grackle	W. B. nuthatch	
King bird		Canada goose	Warbling vireo	
		Yellow headed blackbird		
		Kingbird		
<b>20-30 species</b>	<b>15-20 species</b>	<b>30-40 species</b>	<b>20-30 species</b>	<b>20-30 species</b>

### Breeding Bird Species Associated with Unhealthy Ecological Systems

Corn Field	Cattail and Canary Grass	Degraded Savanna	Lakes
Horned lark	Red winged blackbird	Robin	Mallard
House sparrow	Mallard	Cardinal	Canada goose
	Canada geese	Starling	Coot
	Hérons		
<b>4-6 species</b>	<b>15-30 species</b>	<b>5-10 species</b>	<b>5-10 species</b>

As the last table clearly illustrates, the decline in bird species can be quite steep as healthy ecological systems transition to unhealthy systems due to past land use decisions and the lack of ongoing restoration and management programs.

When considering the needs of wildlife, healthy natural ecological systems provide the essential components for wildlife to flourish. Unhealthy systems, on the other hand, do not provide for the basic needs of wildlife because many of these components are lacking. Figure 4.4 defines the essential components of wildlife habitat.

Figure 4.4 – Sixteen components of wildlife habitat. (Source: *Landscaping for Wildlife*, published by the MNDNR.)

*When these components are lacking or degraded relative to a healthy system, the diversity of wildlife found in the park will be diminished.*



## Ecological Stewardship Program Overview

*The ecological stewardship program is relatively straightforward and consists of three primary phases.*

*Developing test plots, pilot programs, and developing a comprehensive educational campaign are parallel first steps toward restoring balance to the park's ecological systems.*

When these components are lacking or degraded relative to a healthy system, the diversity of wildlife found in the park will diminish. While certain species of wildlife can flourish under degraded conditions, they do so at the expense of other species that historically would have frequented the park.

The ecological stewardship program is relatively straightforward and consists of three primary phases. Each phase has distinct objectives toward the realization of more diverse and healthy ecological systems within the park. A phased approach also ensures that needed checks and balances are built into the process to ensure that program objectives being sought are proved to be both achievable and sustainable from an ecological and economic perspective.

The typical phases of the program includes:

- ▶ **Phase I: Testing and Education Phase** – broadens understanding of restoration needs, options, and opportunities. Also increases local residents' knowledge and understanding of restoration issues.
- ▶ **Phase II: Remedial Phase** – involves the major restoration and management tasks and consequently is usually the more expensive phase. Its focus is on returning the land to the biological and structural conditions desired and sustainable.
- ▶ **Phase III: Maintenance Phase** – represents the long-term management restoration program tasks associated with this project. This should be viewed as a routine maintenance program conducted annually at strategic times to achieve and maintain specific ecological and biological objectives in the subject properties.

The following considers these in greater detail.

### Phase I - Testing and Education

Developing test plots, pilot programs, and a comprehensive educational campaign are parallel first steps toward restoring balance to the park's ecological systems. The former serves to help understand the needs, options, and opportunities for restoration and management of declining ecosystems within the park. The latter serves to increase local residents' and policy makers' knowledge and understanding of these issues and instill a sense of importance and urgency in undertaking stewardship programs. The following considers these issues in greater detail.

#### Testing and Pilot Programs

Small test or demonstration plots are the backbone of the initial testing program. Testing should occur in each ecological zone to test a cross-section of conditions found and to provide wider public exposure to the program. These tests will help determine which restoration practices are best suited for the setting. It is recommended that the testing scenarios be tested in small research plots within the park. A few may be tested in a greenhouse setting to control as many variables as possible. Plots can also be field located to provide an opportunity for testing multiple research possibilities.

There are a variety of testable scenarios and treatments that can be used. Selecting the most opportune of these would be done as the testing program is implemented. Likely test and demonstration plots encompass:

- ▶ Regeneration of oak forests -- to stimulate new growth.
- ▶ Reduction of shrub cover -- to increase light to the ground layer and stimulate growth.
- ▶ Reduction of cool season grasses (and associated duff) -- to stimulate native species soil seed banks.
- ▶ Reduction of noxious weeds and woody plants -- to give competitive edge to native plant species, instead of invasive, non-native plants (i.e., garlic mustard, buckthorn, tartarian honeysuckle, and reed canary grass).
- ▶ Reintroduction of ground cover plants and seed -- to reestablish native seeds.
- ▶ Establishment of native plant nurseries and gardens -- for educational purposes.
- ▶ Establishment of community outreach programs -- so residents establish a personal stake in the project.

### Education Programs

Education plays a key role in the successful implementation of stewardship programs. Although scientifically substantiated to vastly improve natural landscapes, implementing these programs will change the visible characteristics of the areas being restored. The public's understanding of what is happening becomes paramount to their support of complete implementation of stewardship programs. Although set up for research purposes, the testing and pilot programs also serve as in-the-field educational tools. Direct exposure to restoration practices and their impact on the surrounding environment will give park visitors working knowledge of stewardship programs. This approach sets the stage for Phases II and III of the restoration and management plan.

### Phase II - Remedial Phase

The remedial phase focuses on returning the land to the biological and structural conditions desired and sustainable. The period of time required to conduct the remedial restoration phase depends on the level of effort required, condition of the ecological systems, opportunities and constraints (e.g., access, weather, biological response), and level of funding available for the program.

The remedial phase employs a variety of restoration techniques in a major effort to restore vegetation and habitat structure and biological diversity and restore ecological and bio-geochemical functions. Tasks undertaken during this phase include reducing introduced nonnative and other undesirable trees and brush, removal of previous debris and substrate fill areas, addressing erosion and contamination problems, and other general tasks. In some cases, this phase may involve machine/mechanical planting of native plants, including larger trees and other plants.

### Phase III - Maintenance Phase

The maintenance phase focuses on long-term management tasks, which *must* be viewed as a routine maintenance function conducted annually at strategic times to achieve and maintain specific ecological and biological objectives. This phase will require an ongoing effort designed to achieve a desirable and sustainable ecological system within the context of available funding, other resources, and the public's commitment.

*Education plays a key role in the successful implementation of stewardship programs.*

*The remedial phase focuses on returning the land to the biological and structural conditions desired and sustainable.*

*The maintenance phase focuses on long-term management tasks.*

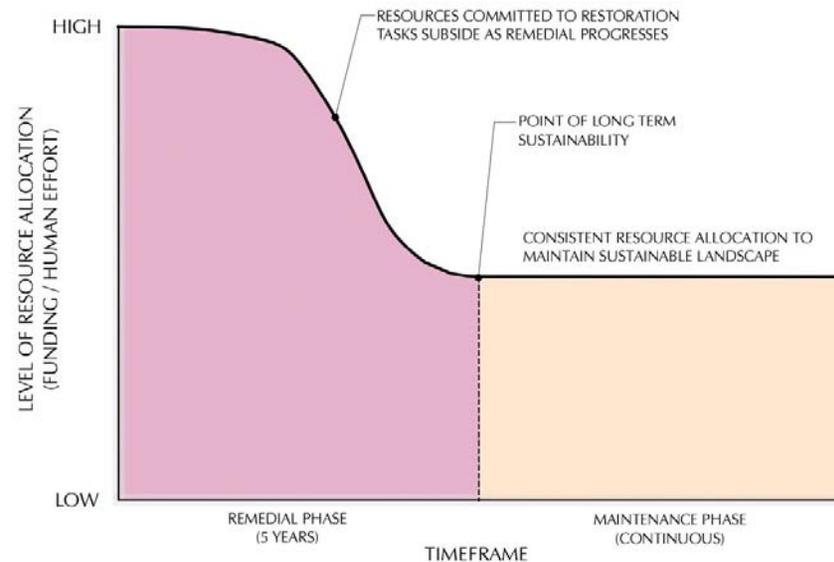
After significant investments in human energy and funding in Phase II, the stewardship program shifts to a lower level of intervention during the maintenance phase. This is inherently less costly and provides an excellent opportunity for long-term citizen and student involvement as volunteers.

Once established, the maintenance phase is guided by both regular management techniques and by strategies that are implemented on a rotational basis through identified subunits. Using Geographical Information System (GIS), Carver County would divide the park into ecological units and sub-units that are convenient to manage (e.g., prescribed burning units demarcated by existing and convenient hiking trails that serve as safe fire breaks). It is during the maintenance phase that the restoration plan would become part of the park's general operations and maintenance function. Along with this comes routine training and education of maintenance staff.

## Restoration and Management Work Effort and Timeframes

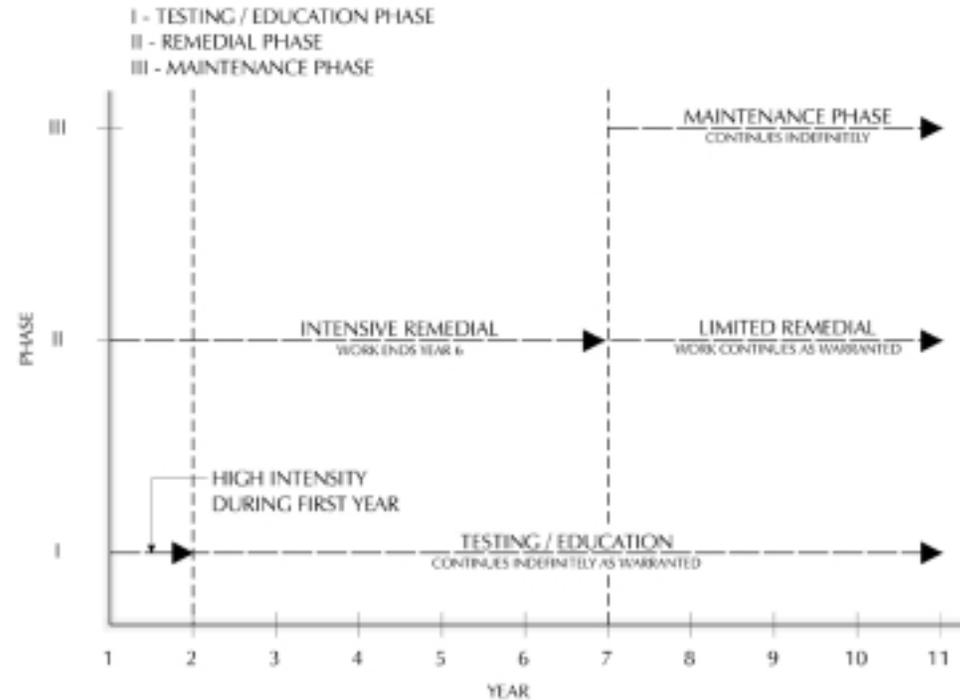
In general, the actual stewardship work tasks are relatively consistent between the remedial and maintenance phases. The primary distinction between the two phases lies in the intensity of the work involved to achieve a set of objectives, and the use of one restoration technique over that of another. For example, the initial removal of dense clusters of buckthorn in a given area may require substantial effort during the remedial phase. Under the maintenance phase, continued removal will still be necessary, but require substantially less effort. Figure 4.5 illustrates how the level of restoration effort lessens as the management plan moves from the remedial into the long term maintenance phase.

Figure 4.5 – Work effort required between phases.



As figure 4.6 illustrates, the remedial phase can take up to five years to complete. This timeframe is highly dependent upon the magnitude of the work involved to complete restoration tasks and the resources committed to this effort. The maintenance phase begins once remedial work is completed and continues on indefinitely at a sustainable level.

Figure 4.6 – Restoration and management timeframe.



## Overview of Restoration Techniques

*The restoration and management plan requires implementing specific tasks to meet performance criteria and achieve improvements to the ecological systems within the park.*

The restoration and management plan requires implementing specific tasks to meet performance criteria and achieve improvements to the ecological systems within the park. Forthcoming is an overview of specialized yet straight forward techniques used to carry out the specific restoration tasks. Of the techniques listed, prescribed burning is the single most useful and important management method required for restoration. The other restoration techniques and strategies are most often used to prepare a site for prescribed burning or as a means to reintroduce proper conditions and species into sites. It is important to underscore that these techniques are used as part of a well-thought out program that considers scientific practicality, costs, and safety.

## Prescribed Burning

Prescribed burning is generally defined as:

*"the highly controlled use of fire under optimal weather and environmental conditions to achieve specific ecological objectives"*

*It is now being realized just how essential the role of fire is in maintaining grasslands, wetlands, savannas, barrens, and numerous forest types.*

Wildfire and fires started by indigenous people and natural causes have played an important role in the evolution and maintenance of many biological systems throughout North America. It is now being realized just how essential the role of fire is in maintaining grasslands, wetlands, savannas, barrens, and numerous forest types. It is also now realized that fire suppression can result in gross changes in the aspect, appearance, and ecological functions of natural systems.

Fire suppression is often followed by a decline in the richness and diversity of native plants and animal species, increased litter, shading, phytotoxin build-up in substrates, decreased availability of essential nutrients and increased homogeneity in habitat structure and spatial heterogeneity. Reduced nutrient cycling and increasing domination by few species often results. In some ecosystems, shifts in wildlife and increases in shade tolerant and less flammable plant species accompany fire suppression.

Prescribed burning has been the primary prairie management tool, but only recently have efforts been made to use fire for the maintenance and restoration of other ecological systems. No other technique comes close to the impact that this naturally occurring phenomenon has on restoring and preserving natural ecological systems. It is a fundamental component of the restoration program to which there is no reasonable substitute. Conducted by trained personnel, prescribed burning has proven to be safe.

## Weeding and Brushing

*Weeding and brushing are the primary techniques used where there is dense brush and little combustible fuel.*

Preparation of the site so that prescribed burning can be introduced will be necessary in some locations given the extent to which invasive species have established themselves. Weeding and brushing are the primary techniques used where there is dense brush and little combustible fuel. Manual reduction of existing dense shrub growths will be required to open these areas. Once open, prescribed burning can be used. This will be especially successful if native ground cover vegetation regeneration responds directly to the reintroduction of fire.

If the use of fire is hampered in areas with non-native cool season grasses, alternatives to consider to facilitate eventual use of fire include:

- ▶ Very careful and discriminate use of herbicides -- used where the evergreen growth of cool season grasses do not carry fire. Direct plant contact with a wick applicator and the herbicide *Rodeo* or *Roundup* have provided quick and safe initial control of the grasses.
- ▶ Low mowing of the grasses (0.5 to 1 inch height) -- can reduce green foliage and, after drying, litter can be used as fuel to carry a fire.

Herbicide is generally applied to cool season grasses after they have reached a height of 5-8 inches and display a new flush of green, actively growing foliage. It is applied at prescribed rates by trained and licensed field specialists. On larger pieces of property, wick applicators with adjustable boom heights are very useful for "wicking" plants. The herbicides used, such as *Roundup*, have very low toxicity to humans and wildlife and will not present a threat when used properly. Prescribed fire usually follows 5-15 days after the herbicide treatment or after the mowed grasses are dry enough to burn, which varies depending on weather conditions.

### Seed Harvesting and Disbursement / Planting

Reintroduction of vegetative species will likely be required in areas where natural seed banks are lacking or in areas offering little opportunity for self-regeneration. In these instances, it is recommended that reintroduction be generally limited to species that have historically occurred in the area.

In some cases, the use of non-native vegetative species may be warranted. An example of this is display gardens with plant species that may or may not have historic relevance. Another example is the use of short lived non-native species (i.e., annual rye grass) which may assist in stabilizing badly eroding slopes. The key point is to understand the use of these plant species and their propensity for getting out of control, which is the case with buckthorn.

Plant propagation and the introduction of seeds and plants for local species should continue concurrently with other management and restoration strategies to achieve restoration objectives. Observations suggest some soil seed banks are present within the park and are vital to restoration programs. But to restore these and other areas, additional seeds from native species (either propagated and cultivated for seed production or wild harvested seeds) should be gathered or produced in ample quantity and quality to enable prompt introduction during the early years of restoration.

For species that are no longer present in the area, appropriate locations should be identified for seed harvesting, propagation, cultivation and eventual introduction purposes. In as much as possible, seeds should come from areas close to the site of introduction. The bounds for collection for any introduction program are typically limited to the physiographic province (i.e., natural area division) of the recipient location.

The restoration techniques listed above, as well as other appropriate practices, will be used to achieve specific improvements to natural resources within the park. The following table provides an overview of the restoration and management approaches as they relate to the ecological systems found within the park.

*Reintroduction of vegetative species will likely be required in areas where natural seed banks are lacking or in areas offering little opportunity for self-regeneration.*

### Overview of Restoration Approach Associated with Each Ecological System

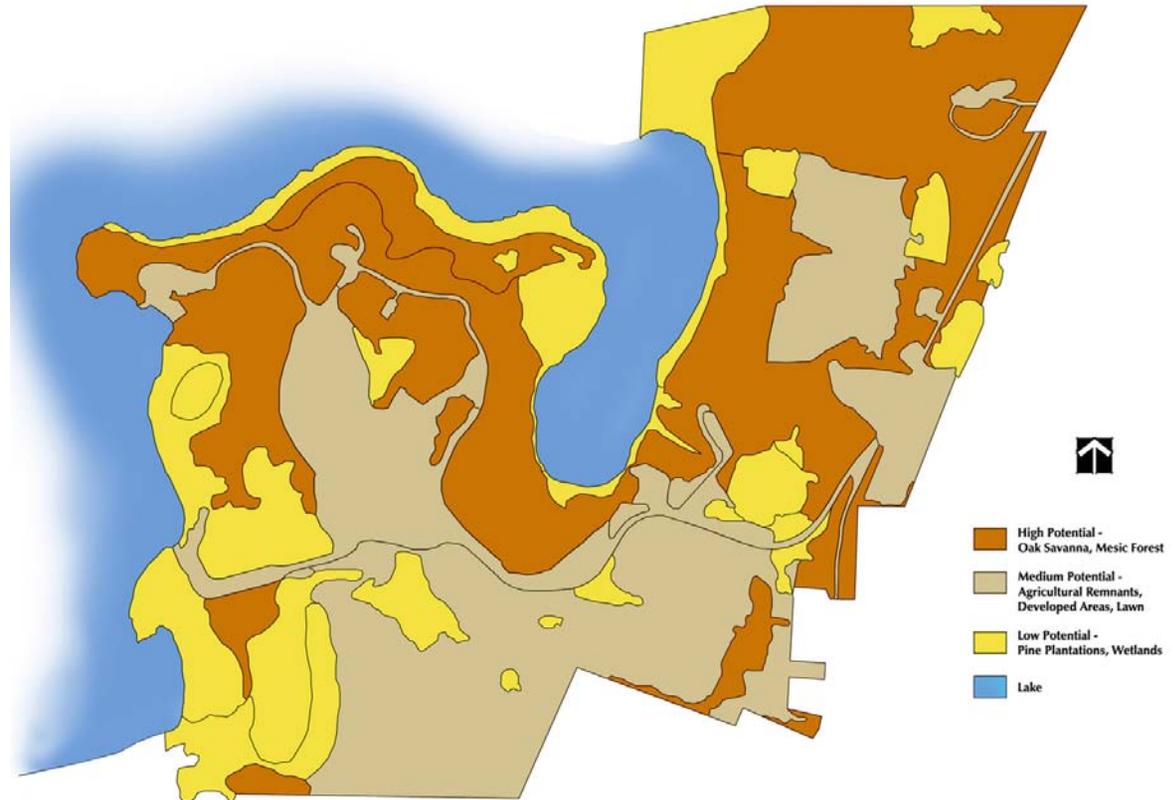
## Overview of Restoration Approaches to Various Ecological Systems

Ecological Type	Overview of Restoration and Management Approach
<b>Forested Communities</b>	<p>The ground cover vegetation system in many, if not most, of the forested communities has or is collapsing and as each year passes is represented by fewer and fewer shade tolerant species. Ground cover vegetation in these stands varies from shade suppressed areas with an overstocked canopy to areas where dense invasion by buckthorn has occurred. The combined influence of these factors has contributed to the decline of the native soil stabilizing vegetation. The oak savanna systems in particular have experienced degradation where erosion of the topsoil is occurring. Lack of tree regeneration and virtual dominance by older age classes of oaks, maples, and basswoods is a major ecological concern. The larger trees are beginning to reach pathological maturity and will begin to degenerate rapidly. This is very problematic because older trees do not regenerate vegetatively. The lack of ground cover due to the excessive canopy closure tends to accelerate overland flow of water, resulting in poorer water quality in the wetland areas.</p> <p><b>Generalized Management /Restoration Approach:</b></p> <ol style="list-style-type: none"> <li>1) Herbicide treatment and manual reduction of undesirable introduced shrubs.</li> <li>2) Removal of excessive litter and fallen trees to open up the understory and allow for prescribed burning to take place.</li> <li>3) Prescribed burning on a regular (1-3 year) rotation.</li> <li>4) Seeding with locally collected native plant seeds where native species seed banks are not present or do not respond to the above treatments.</li> <li>5) Stimulation of hardwood species regeneration through the introduction of acorns and seedlings.</li> <li>6) Monitoring and reporting of results</li> </ol>
<b>Wetlands</b>	<p>With respect to the wetlands, significant signs of deterioration caused by excessive nutrient loading and unnatural fluctuations in water levels from stormwater runoff have been found. Of equal importance, the lack of basic management, such as prescribed burning, reduces the diversity of plant life that can compete against more aggressive native and non-native species. Along lakeshore edges, invasive plants such as purple loosestrife are also becoming increasingly problematic and destined to become the dominant plant if not managed aggressively.</p> <p><b>Generalized Management /Restoration Approach:</b></p> <ol style="list-style-type: none"> <li>1) Complete a more in-depth water resources management plan to determine the best approach to managing on-site hydrology and stormwater.</li> <li>2) Undertake stewardship program, starting with prescribed burning on a regular (1-3 year) rotation.</li> <li>3) Spray herbicide treatment to reduce existing persistent non-native/undesirable grasses.</li> <li>4) Seeding with locally collected native plant seeds or plugs where native species seed banks are not present or do not respond to the above treatments.</li> <li>5) Monitoring and reporting of results.</li> </ol>
<b>Prairie/Old Fields</b>	<p>With the increasing dominance of non-native plant species grasses across the site, there is little opportunity for native ground cover species to reestablish, persist, flower, or reproduce. Although some remnant prairie species remain in some areas of the park, the majority of the open fields are covered with non-native and invading woody plant species. Under the current circumstances, reestablishing and spreading desirable native ground cover species will simply not occur without a well-conceived restoration and management strategy.</p> <p><b>Generalized Management /Restoration Approach:</b></p> <ol style="list-style-type: none"> <li>1) Remove shrubs and stumps and other non-burnable vegetation. Herbicide treatment to reduce existing persistent non-native grasses. Mowing will also be necessary.</li> <li>2) Prescribed burning on a regular (1-3 year) rotation.</li> <li>3) Seeding with locally collected native plant seeds where native species seed banks are not present or do not respond to the above treatments.</li> <li>4) Inter-seeding of native prairie grasses and forbs in existing old fields conducted by no-till drilling or scattered by hand after prescribed burning. Tillage is not desirable as this could stimulate weed species seeds.</li> <li>5) Monitoring and reporting of results.</li> </ol>

## Ecological Restoration Potential

While the potential for restoring the various ecological systems varies considerably across the park, and even within a given system, general conclusions can be made about restoring greater diversity and health to these systems. In doing so, the opportunities and challenges that are inherent with implementing a comprehensive stewardship program can be better understood. Figure 4.7 illustrates the restoration potential of the various ecological prototypes in very broad terms.

Figure 4.7 – Restoration potential of ecological systems within Lake Minnewashta Regional Park.



As the figure illustrates, the higher elevations tend to offer some of the highest potential for restoration since these areas are often less influenced by other factors, such as changes to localized hydrology. This is, however, a generalization and subject to extensive refinement as the stewardship program is implemented. What can be drawn from this is that implementation of the program will likely start with threatened systems that offer the highest potential for success and, coincidentally, are often the least costly to restore. As time passes, success in restoring systems offering the highest potential will pave the way for taking on the more challenging ones that follow. Also note that implementation of the stewardship program would also take into consideration where it would be most visible to the park visitor. This is important in that the need to educate the public about the benefits of a healthy ecology will go a long way toward gaining continued support.

## Water Resources Management

Water resources management refers to managing stormwater runoff within and adjacent to the park in an ecologically-sound manner that is consistent with the larger ecological vision for the park. Fundamentally, the main principle is to manage stormwater runoff using natural infiltration methods and restoration of native vegetation. Through such an approach, it is expected that stormwater runoff from parking lots, roads, buildings, and other built features can be very effectively captured and treated without degrading the wetland areas and lake. The following provides additional background on this issue.

### Stormwater Treatment Train as an Underpinning for an Ecologically-based Approach to Stormwater Management

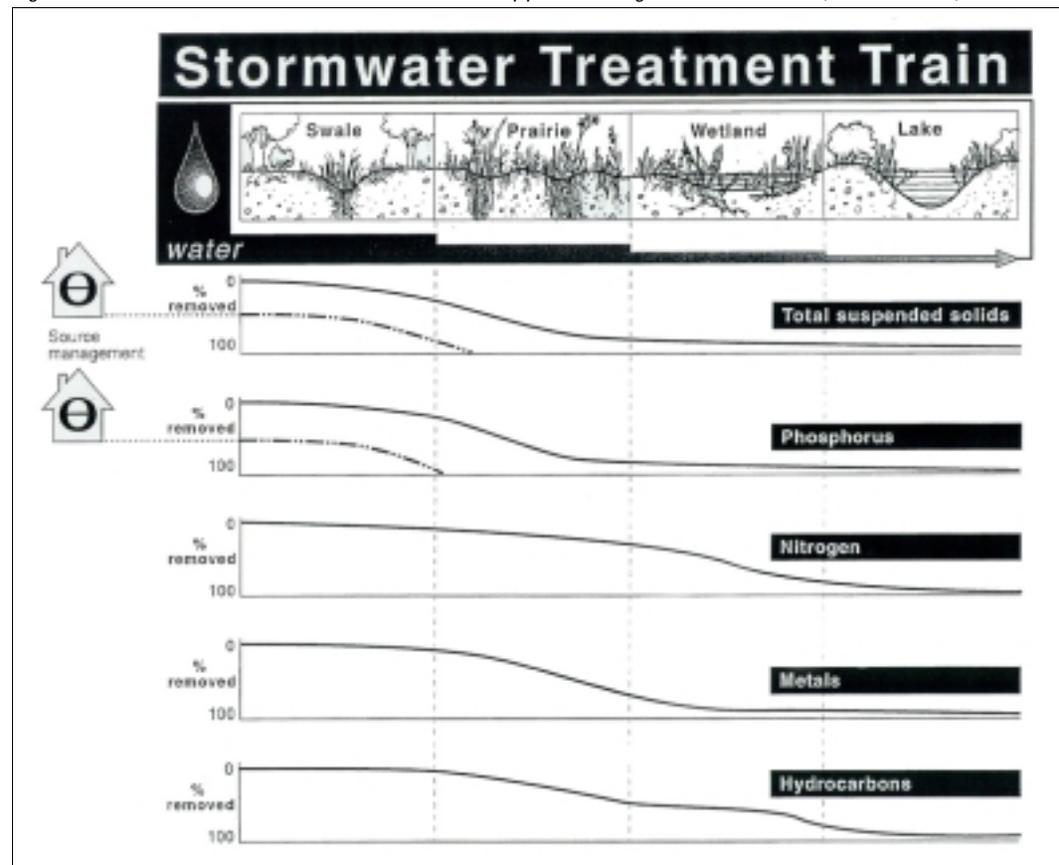
The stormwater treatment train is an approach to stormwater management that relies on passive, overland routing of runoff, as opposed to storm sewers and other built structures. This approach offers a couple of distinct advantages over conventional storm sewer systems:

- 1) Treatment of introduced contaminants picked up by runoff is removed at the initial stages of water flowage rather than being transported to downstream locations and accumulating in wetland and lake systems. This greatly reduces degradation to water quality and vegetative health in downstream systems.
- 2) Stormwater flow rates and volumes more closely emulate natural conditions. This greatly reduces unnatural fluctuations in water levels in downstream systems (wetlands and lakes) and therefore reduces impacts to the natural condition of water systems and vegetation.

Treatment train systems typically consist of four primary components, each of which perform in sequence to treat the water before it enters wetlands and lakes. Initially, stormwater runoff from the built environment is routed into swales planted with native prairie and wetland vegetation. These swales convey runoff from developed areas into prairie systems while also providing a modest amount of infiltration and settling of solids. The prairies are the second component of the treatment train, functioning to convey stormwater as diffused overland flow to the wetland systems bordering wetlands or lakes. The prairies infiltrate a substantial portion of the annual surface runoff volume due to their very deep root system. They also provide additional solids settling and biological treatment. The wetlands are the third component of the treatment train system and provide both stormwater detention and biological treatment prior to runoff entering the lake. The final treatment component is the lake, which provides stormwater detention, additional solids settling and biological treatment. Figure 4.6 illustrates the treatment train system.

*Treatment train systems typically consist of four primary components, each of which perform in sequence to treat the water before it enters central wetlands and lakes.*

Figure 4.6– Stormwater Treatment Train. Source: Applied Ecological Services, Inc. (Trademarked).

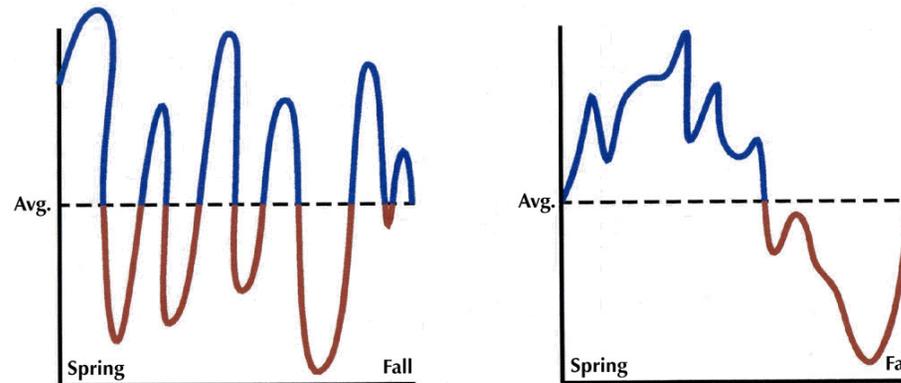


*With respect to stormwater flow rates and volumes, the use of a stormwater treatment train produces a much more natural hydrograph with lower peak flows and higher base flows relative to the hydrograph of a typical engineered approach.*

With respect to stormwater flow rates and volumes, the use of a stormwater treatment train produces a much more natural hydrograph with lower peak flows and higher base flows relative to the hydrograph of a typical approach engineered for flow rate control. Figure 4.7 is instructive in that it illustrates the difference between a flow rate control and ecological approach to stormwater management.

Figure 4.7 – Annual hydrograph comparison.

### Annual Hydrographs and Normal Average Water Levels for Restored Wetlands.



#### Flow-Control Approach to Hydrology

- Unpredictable Swings in Water Levels
- Creates Biological Instability
- Promotes Habitats for Weeds and Poor Aesthetics
- Promotes Poor Water Quality

#### Ecological Approach to Hydrology

- Annual Seasonal High and Low
- Predictable Hydraulics and Seasonal Trajectory
- Promotes Habitat for Stable yet Dynamic Plant Communities (Diversity of Plants and Animals)

With respect to stormwater flow rates and volumes, the use of a stormwater treatment train produces a much more natural hydrograph with lower peak flows and higher base flows relative to the hydrograph of a typical flow rate control approach.

The ecological approach to stormwater management and hydrology is desirable when ecological health is one of the principles being adhered to as part of the master planning process. An additional point about the treatment train approach is the potential it offers to recapture capital investment dollars by avoiding the costs of putting in storm sewer systems when a more ecologically-sound approach is achievable. The concept of the stormwater treatment train has particular application to Lake Minnewashta Regional Park in that this approach is an integral part of restoring natural systems within the park.

### Application of Best Management Practices for Managing Stormwater

Under the master plan, the ecological-based philosophy to managing stormwater is supported by the application of Best Management Practices that address common development circumstances likely to be encountered as the park is developed/redeveloped. These practices define specific techniques that can be applied to different development scenarios to achieve stated environmental protection objectives. The Metropolitan Council's *"Urban Small Sites Best Management Practice Manual"* provides the basic underpinning for many of the techniques that will be employed wherever applicable as the park is developed/redeveloped. Note also that newly emerging ecologically-based techniques will also be applied to achieve desired ecological benefits.

## Conclusions Related to Ecological Stewardship and Water Resources Management

Specific techniques envisioned to have application for the park include:

- ▶ Minimization of impervious surfacing for parking lots and roadways, including the use of naturally-surfaced areas for overflow/temporary parking.
- ▶ Use of infiltration systems (e.g., biofiltration systems, rain gardens, filter strips, swales, and slotted/flat curbs) as part of parking lot and hard surface designs.
- ▶ Use of infiltration techniques for managing roof runoff from buildings (e.g., downspout infiltration systems)
- ▶ Use of site grading techniques to achieve stormwater treatment train objectives (as defined in this section.)
- ▶ Use of contemporary erosion control techniques to prevent migration of soils during the construction process.
- ▶ Limiting the use of maintained turf to active use areas.

In addition to the Best Management practices, the master plan is also supported by the Metropolitan Council's *"Model Storm Water Management Ordinance"*, which defines specific approaches to protecting the site's ecological resources, especially wetland systems. The provisions of the model ordinance will be applied to the park's development/redevelopment as applicable.

As a regional park, preserving natural open space values is a vital aspect of the master plan for Lake Minnewashta Regional Park. Ensuring that these core values are protected, or even enhanced, in future years is of equal importance to developing the park for recreational uses.

The thoughtful development and implementation of ecological stewardship and water resources management programs is fundamentally important to restoring and preserving natural processes in this park and achieving the vision defined by the master plan.

## Section V

# Development Master Plan

### Overview

The Development Master Plan is an outgrowth of the public process in which all facets of the park's future development were considered. The master planning process strived to be exhaustive in its consideration of the issues that were raised during the public meetings. After much discussion and synthesis of public comment, the findings presented here represent the consensus reached by the Carver County Park Commission and supported by the County Board.

Note, however, that the master plan still remains a dynamic planning tool that will continue to evolve and be fine-tuned as it moves through implementation steps and benefits from management and operational experiences and a greater understanding of recreational trends in the years to come. It is also recommended that implementation decisions made in future years include additional opportunities for public input to have the greatest level of confidence that what is developed will be in line with public demand and expectations. Through an ongoing commitment to an open public process, it is believed that the true values that the park brings to the region will remain at the forefront of the decision making process.

### Balancing Human Use of the Park with Ecological Protection

The master plan is believed to represent a thoughtful and responsible balance between recreational uses and the ecological preservation of the park. One of the hallmarks of finding this balance was placing emphasis on restoring the ecological systems historically found within the park and in showing restraint in the size of the built footprint. Although restraint was shown, providing for a cross-section of recreational activities within the context of a regional park setting was also a fundamental planning objective. Even though space within the park is at a premium, the master plan is successful in accommodating the recreational activities that are expected to be in high demand and appropriate for this park (as defined in Section II).

### Land Use Zones

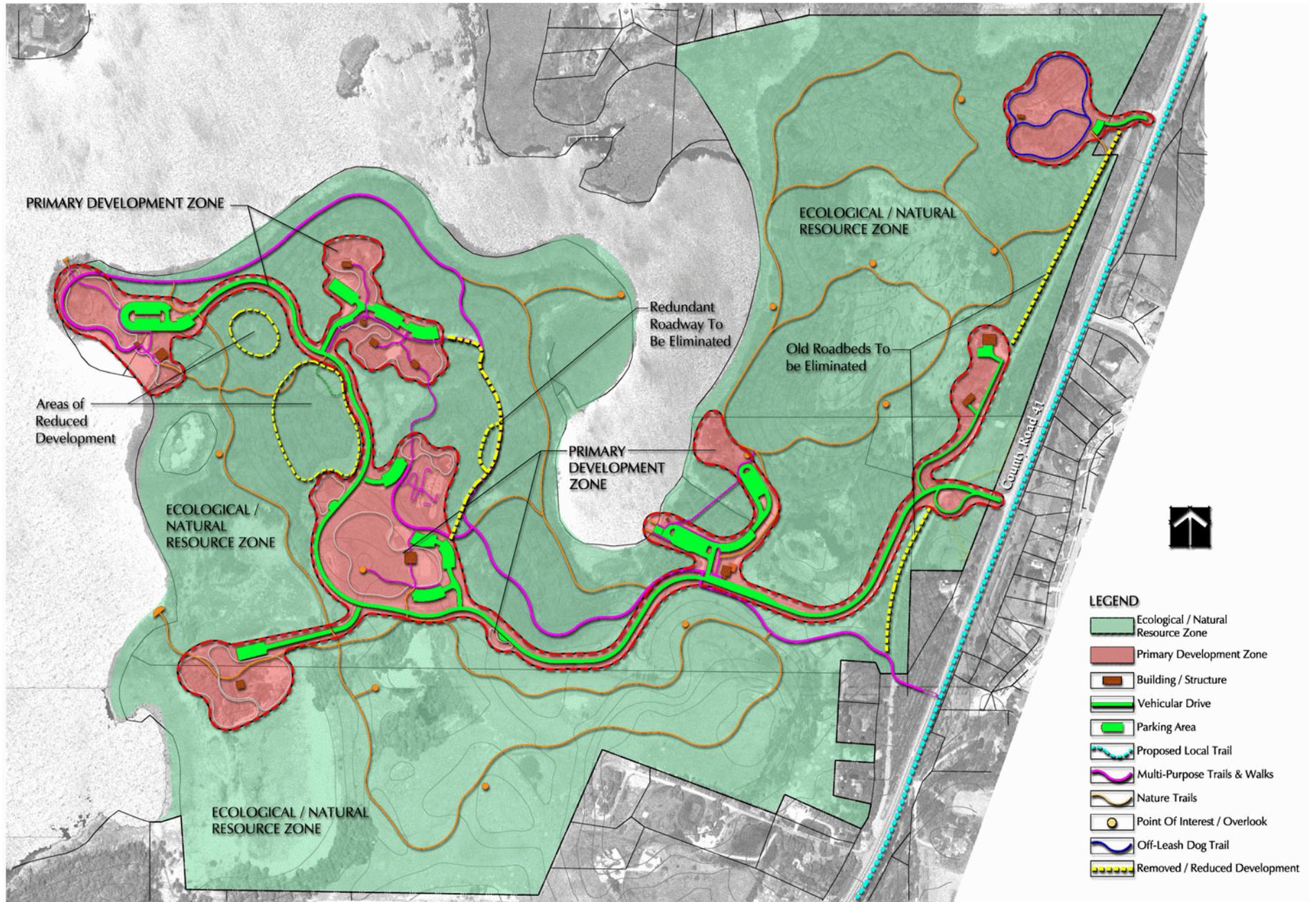
*Land use zones describe the park by functional uses and overarching ecological characteristics as they relate to the development program.*

Land use zones describe the park by functional uses and overarching ecological characteristics as they relate to the development program. By considering the park from this broader perspective, the most appropriate interrelationship between the ecological resources of the park and the proposed development program can be discovered. As figure 5.1 illustrates, two distinct land use zones were defined, which includes:

- ▶ Primary Development Land Use Zone
- ▶ Ecological and Natural Resource Land Use Zone

Note that the land use zones as defined in figure 5.1 relate specifically to the development program and are not meant to draw distinctions between which area of the park is more or less ecologically valuable or of higher stewardship priority. (These issues are considered in greater detail in Section IV.)

Figure 5.1 – Land Use Zones.



The following considers each of the defined zones.

### Primary Development Land Use Zone

This zone relates to the areas of the park where development is concentrated to service specific infrastructural needs. As illustrated in figure 5.1, the proposed development zone is very closely associated in size and form with the existing development envelope. Although the new master plan provides additional facilities to support public demand, the overall development footprint remains nearly the same, and in some cases even downsized. This was accomplished by reorganizing and consolidating some of the existing uses. Examples include removing a redundant roadway and parking area, eliminating the old County Road 41 roadbed, restoring an open play field to a prairie, relocation of a picnic shelter, and consolidating boat launch facilities (as illustrated in figure 5.1).

### Ecological and Natural Resource Land Use Zone

This zone encompasses the largest area of the park and focuses on preservation of natural open space and ecological diversity. Although development within this zone is not precluded, it is generally limited to trails, overlooks, sitting areas, and nature interpretive signage. With walking/hiking in a natural area coupled with nature observation as some of the highest ranked recreational activities (as defined in Section II), it is expected that the use of this zone for recreation will be fairly high even though most of it is simply natural open space.

## Development Program

*The development program defines the recreational uses of the park and the facilities to support those uses.*

The development program defines the recreational uses of the park and the facilities to support those uses. The program is an outgrowth of research on recreational trends, the findings of the public process, and the development parameters established as part of the previous master plan for the park.

### Development Master Plan

The development master plan provides for a cross-section of recreational activities to meet recreational demands. The mix of facilities included in the master plan provides an opportunity for day-long stays at the park where one can enjoy a variety of complementary recreational activities in a naturalized setting.

The *Master Plan* graphic provided in the front cover sleeve illustrates the overall master plan for the park. The following provides an overview of each element of that plan.

## Park Drive

*The entrance to the park will be redesigned and improved to make the area more visible and appealing from County Road 41.*

*The existing road will be paved to control dust, reduce wash-boarding, and avoid mud and erosion.*



As illustrated on the *Master Plan* graphic, vehicular access into the park will continue to be limited to one entrance from County Road 41. This maintains a singular entrance point and minimizes the extent of roadways within the park. As illustrated, the park drive generally follows its existing alignment, although in several areas the road will be realigned to address grade issues and geometric design considerations.

As illustrated in figure 5.2 on the next page, the entrance to the park will be redesigned and improved to make the area more visible and appealing from County Road 41. The turnaround provides an opportunity for visitors to exit the park when the gate is closed. The fencing serves two purposes: One is to keep vehicles from leaving the road and cutting across open areas to get into the park. The other is to provide a visual cue from County Road 41 so visitors can see the entrance location coming up before it is too late to turn, which is a current problem.

The remainder of the improvements focus on landscape enhancements. This includes creating more interesting land forms and wildflower displays that add visual appeal and interest to the entrance. These improvements will also create a more natural character to the area, versus the mowed turf that currently exists. A new entrance sign plus a couple of entrance identification signs are also proposed to alert visitors to the entrance location.

Once past the park entrance, the park drive generally follows the existing alignment through the remainder of the park – although there are several areas where realignment is necessary to improve grades lines and roadway geometry. A number of pull-off parking areas will also be provided to service small picnic areas, park overlooks, and trail access points. The park drive terminates at the beach parking lot, which was improved in 2000.

*(Aerial of entrance location off of County Road 42.) Improving its function and aesthetics are key master plan objectives. (The caretaker residence and maintenance facility are shown at the top of the photo.)*



Aerial (looking north) illustrating the existing roadway on the east side of the photo that will be transitioned to a multipurpose trail.



The park drive would be designed to be 22' wide with a rural cross-section. Asphalt pavement is proposed to control dust, reduce wash-boarding, avoid mud and erosion, and minimize ongoing maintenance costs – all of which have been ongoing concerns given the extensive use of the road.

As illustrated in figure 5.1, there is one section of existing roadway that will be eliminated to avoid redundancies in roadway infrastructure. Once eliminated, the existing roadbed will be used for a new paved trail corridor as shown on the *Master Plan* graphic and defined later in this section.

Figure 5.2 – Character sketch of entrance redesign.



## Boat Launch Facilities

It was determined that consolidation of the two existing boat launches into one convenient location achieves a number of important objectives.

Much of the public discussion about the park's development centered around the optimal location for the boat launch. After consideration of a number of options, it was determined that consolidating the two existing boat launches into one convenient location achieves a number of important objectives, including:

- ▶ Reducing the need for boaters to travel to different areas of the park to determine if a space is available.
- ▶ Reducing the extent to which vehicles with trailers will have to travel through the park to get to a boat launch facility.
- ▶ Consolidating all parking spaces into a location that can be more readily observed from the Visitor Contact Station.
- ▶ Reducing the maintenance cost associated with maintaining two instead of one boat launch.
- ▶ Providing an opportunity to use the area of the second boat launch for an alternative use.
- ▶ Ensuring that there will be adequate water depth to launch boats during lower water cycles.
- ▶ Providing a greater level of protection from the wind during launching operations.

Although consolidation of the two launches to the proposed location introduces more boat traffic into the bay area, the advantages of this location ultimately outweighed the other options being considered. By limiting vehicle/trailer parking to 35 spaces, it is anticipated that increased boat traffic in the bay will be manageable.

*The boat launch under the new master plan would remain in the same location as the existing boat launch #1.*



*The existing drives and parking areas are used to the extent possible for development of new boat launch facilities.*

Figure 5.3 on the next page provides a character sketch of the boat launch and Visitor Contact Station area.

As illustrated, the existing drives and parking areas are used to the extent possible for development of new boat launch facilities. This design approach also spreads out the parking lot so that it is a less imposing facility. As previously defined, a total of 35 vehicle/trailer parking spaces will be provided, which equals the capacity of the park's two existing launches.

The small, informal picnic area/outdoor classroom overlooking the bay would be retained for boaters, trail users, and interpretive programs.

As figure 5.3 illustrates, the boat launch includes two side-by-side ramps to increase its efficiency. Input from local boaters and the MNDNR should be solicited when the launch is developed to ensure that all functional issues are appropriately addressed.

The parking lot for the launch would be paved with asphalt with some form of curbing to control vehicles and minimize maintenance. Stormwater runoff from the parking area would be managed in an ecologically-sound manner in keeping with the ecologically sustainable philosophy of the park.

Aside from the ramp and associated parking, the amenities to support the boat launch facility are purposefully simple and limited. This includes convenient trails to connect each parking area to the boat launch. As illustrated in figure 5.3, boardwalks may be needed to traverse a small lowland area. A small picnic shelter with a couple of picnic tables is also shown near the boat launch. If the boat launch is developed before the Visitor Contact Station, this location could be used for pit toilets on an interim basis. Boarding docks along the side of the boat launch are also provided to ease the trailering operation. These would be wood decked and similar in design to the boardwalks. A pull-off area near the boat launch for removing weeds from boats and trailers would be provided as well.

*Aerial (looking north) illustrating the existing boat launch #1, which will be retained and expanded under the new master plan.*



The small picnic area (as shown in figure 5.3) will be retained.



A temporary stopping lane is also provided along the park drive in front of the Contact Station to allow vehicles with and without boat trailers to stop.

A temporary stopping lane is also provided along the park drive in front of the Contact Station to allow vehicles with and without boat trailers to stop. This lane also provides an area for vehicles with trailers to temporarily stack while waiting for a parking space to open up. In busier times, stacking could also occur within the boat launch parking lot, assuming that the attendant can adequately monitor and control use of the launch facility. The extent to which space is required for stacking either along the road or within the parking lot will require additional design consideration at the time of development, with a greater level of input from parks staff and boaters.

Figure 5.3 – Character sketch of boat launch and Visitor Contact Station.



## Visitor Contact Station

*The photo illustrates the proposed location for the Visitor Contact Station. The existing boat launch is in the background near the large tree.*



*By keeping the building to a relative small size, day-to-day staffing along with operational and maintenance costs can be kept to a minimum while still providing quality service.*

As illustrated in figure 5.3 on the previous page, the Visitor Contact Station is located where it can serve a number of functions, including providing:

- ▶ A single point of control for park operations and oversight. This will help ensure that essential visitor services can be provided with minimal staff.
- ▶ A high level of security for the boat launch facility, where minor theft and vandalism has occasionally occurred. It also allows the park attendant to more directly monitor parking space availability at the boat launch during busier periods.
- ▶ Common point of orientation for all park visitors.

The overall size of the building is expected to be under 2,000 square feet and accommodate the following:

- ▶ Visitor contact – related to orientation and collection of park fees
- ▶ Administration – related to activities within this park.
- ▶ Restrooms
- ▶ Vending
- ▶ Station for Park Rangers
- ▶ Small meeting room – with adjoining outdoor terrace area
- ▶ Ski rental/warming house (future potential)

By keeping the building to a relative small size, day-to-day staffing along with operational and maintenance costs can be kept to a minimum while still providing quality service. Although the architectural theme for the building has not been established, the strong natural open space character of the park will be a major influence on its design. The principles of sustainable architecture, which emphasizes reducing the short and long-term impacts of buildings on the environment, would also be applied to the design of the building.

Also as shown in figure 5.3, there are approximately 20 parking spaces to support the contact station and provide some trailhead parking. Several additional spaces are provided near the turnaround of the north parking lot for those using the trails or picnic area. During the winter, it is also expected that at least some of the boat launch parking would be made available for cross-country skiers. Note also that some form of a turnaround would be integrated into the plan near the visitor center for those that do not want to enter the park. As shown in figure 5.3, one option is to simply use the boat launch parking lot as the turnaround.

## Beach Facilities

*The beach area is one of the most fully developed areas within the park, as well as one of the most popular.*

The beach area is one of the most fully developed areas within the park, as well as one of the most popular. As illustrated in the aerial photo on the next page, amenities provided at the beach include:

- ▶ Bathhouse (largest building) – with restrooms, changing area, storage and mechanical room.
- ▶ Vending/picnic structure (smallest building) – with vending machines and several picnic tables.
- ▶ 400 lineal feet of beach with a capacity of 250 people.
- ▶ Mowed turf area with shade trees.
- ▶ Parking lot with nearly 100 spaces. (Overflow parking is provided to the east. See figure 5.1)
- ▶ Lifeguard stations.
- ▶ Picnic area with tables and grills.

*The existing beach functions very well in servicing the public.*



*The bathhouse has proven to be a well received amenity, as is the nearby vending/picnic shelter structure.*



A children's sand-water play structure and boat beaching area are also planned, but yet to be developed. (Although a desired facility, the boat beaching area would likely impact protected shoreline vegetation and thus require permits from various agencies before development would be allowed to occur.) If needed, an irrigation system may also be added at some point to improve the durability of the turf areas during high use periods.

Note also that northwest of the beach is a family/group picnic area and fishing pier. In addition, the beach will be the terminus point for the multi-use paved trail that traverses through the park. Each of these are considered later in this section.

*Aerial (looking north) illustrating the existing beach facility. The northwest corner of the image is used for picnicking. A fishing pier is also provided on the northwest point.*



## Group and Family Picnic Areas

*With such a wide range of groups to accommodate, picnic facilities are purposefully arranged to function independently to service several smaller groups or collectively to service the occasional very larger group.*

*The existing large group picnic shelter has proven successful in meeting the needs of larger groups.*



Group gatherings are a very popular activity within the park. These gatherings range in size from family get-togethers of a couple dozen people to large, organized events by the Boy or Girl Scouts that draw nearly 500 people to the park for an overnight stay. There is also increasing demand for corporate picnics during the summer months. With such a wide range of groups to accommodate, picnic facilities are purposefully arranged to function independently (to service several smaller groups) or collectively (to service the occasional very larger group). In all, there are a total of five group picnic areas included in the master plan, as illustrated on the *Master Plan* graphic. The following considers each of these in greater detail.

### Picnic Area #5 – Group Picnic Shelter with Restrooms

This existing picnic area was developed in 2000 and has an under-roof capacity of 135. With the large capacity, restrooms, proximity to the children's play structure and open field area, and nice views across the park, this shelter has quickly become very popular with larger groups. When not in use, it serves as a casual meeting place and family picnic area.

As shown on the *Master Plan* graphic, the only significant improvements envisioned within this picnic area is redesigning and paving the gravel-surfaced parking lot to improve its function and make it easier to maintain and adding more landscaping. With the removal of the road to the east of the shelter, there is an opportunity to relocate a portion of the existing lot to that area. This would tie the parking areas together more effectively and remove part of it from the viewshed of the picnic area. Note that the eastern half or so of the existing lot would likely remain in the same general location since it ties into a primary pedestrian access route to the shelter.

*Aerial (looking north) illustrating Picnic Area #5. Under the master plan, a portion of the existing gravel parking lot would be relocated to the east where the roadway is currently located.*



As with all others, this parking lot would be paved with asphalt with some form of curbing to control parking and minimize maintenance. Stormwater runoff from the lot would be managed in an ecologically-sound manner. Naturally landscaped islands and naturalized land forms could also be used to breakup the parking lot form and reduce its perceived scale. Note that overflow parking in nearby prairie areas could also be provided if demand warrants. However, this would only be considered after a clear demand has manifested and ecological impacts assessed.

The only other improvements envisioned for this area includes development of games areas such as shuffleboard and horseshoes.

### Picnic Areas #2, #3, and #4 – Group Picnic Shelters with Central Restroom

Located in an appealing wooded area, these three group picnic areas function both independently and collectively to service a wide range of group sizes. Of the three shelters in this area, two already exist. The aerial on this page illustrates the current level of development. Figure 5.4 on the next page provides a character sketch of the functional relationship between the three group picnic areas and related facilities under the master plan.

*Aerial (looking north) illustrating Picnic Area #2, #3, and #4. Under the master plan, the large gravel parking could be restored to native prairie, but remain available for periodic overflow parking.*

*Located in an appealing wooded area, these three group picnic areas function both independently and collectively to service a wide range of group sizes.*

*The existing picnic structures in this area are wood framed with a concrete base. A maintained turf area is provided around each structure for group activities and volleyball.*



Within each picnic area, a common set of amenities are anticipated, including:

- ▶ Open shelter structure with picnic tables.
- ▶ Grills, trash receptacles, benches, and other related site amenities.
- ▶ Grass or sand volleyball court.
- ▶ Maintained green space among the mature trees.
- ▶ Games areas such as horseshoes and shuffleboard.
- ▶ Water and electrical service (as available).



The under-roof capacity of the three shelters are anticipated to be:

- ▶ Shelter #2 – 80 people (this new shelter replaces the shelter that will be eliminated as shown in figure 5.1)
- ▶ Shelter #3 – 100 people
- ▶ Shelter #4 – 80 people

As shown in figure 5.4, the three shelters will be supported by a common restroom facility, which is an upgrade to the existing pit toilets now provided at the two existing sites. While this upgrade is needed to respond to public demand, limiting it to one common, centrally located facility is the most cost-effective approach in terms of initial development and long-term maintenance costs.

As shown in figure 5.4, parking would also be upgraded to better serve each of the existing and the proposed shelters. To minimize site disruption and maximize convenience, a linear parking lot arrangement following the old roadbed is envisioned. As shown, the parking bays within the lot are arranged to either service an individual picnic shelter or function collectively to service a large group event where all of the shelters are used at one time. In terms of capacity, the overall parking lot as shown provides approximately 100 parking spaces, which affords 40 spaces for the larger shelter and 30 each for the two smaller ones.

The parking lot would again be paved with asphalt with some form of curbing to control parking and minimize maintenance. Stormwater runoff from the lot would be managed in an ecologically-sound manner.

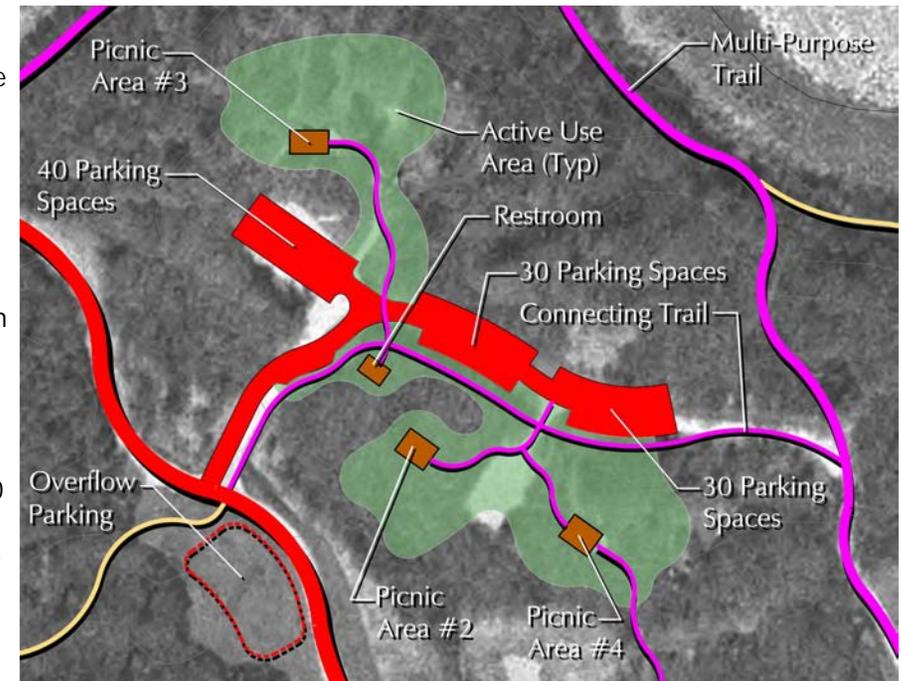
As shown on the *Master Plan* graphic, An overflow parking area on a restored prairie would also be provided for the occasional larger event. This provides the needed flexibility to support larger groups while at the same time minimizing the extent of impervious surfacing within the park. When not in use for event parking, the area would simply be preserved as natural open space that would be very similar to the surrounding landscape. (Note that sub-base stabilization using ecologically-based techniques may be required.)

*The three shelters will be supported by a common restroom facility, which is an upgrade to the existing pit toilets now provided at the two existing sites.*

*The existing road corridor will be used for a linear parking lot to minimize disruption to the surrounding natural areas.*



Figure 5.4 – Character sketch of the layout for the group picnic area.



*(View of existing picnic area #1 from the beach parking lot to toward the fishing pier.) Ultimately, this trail spur from the parking lot will connect with the multipurpose trail proposed for the park.*



*(View from the first family picnic area identified on the Master Plan.) Careful placement of family picnic areas will allow visitors to enjoy the views across the park.*



## Picnic Area #1 – Family and Small Group Picnicking near Beach Area

Located on a point directly adjacent to the beach facility is an area designated for family and small group picnicking. Pragmatically, this area mostly serves as an adjunct to the beach facility. Amenities provided in this area are simple and purposefully limited due to the extent of other uses in the area and limited space for parking. Amenities include free-standing picnic tables, grills, pit toilets, open lawn area, and a volleyball court. A fishing pier is also provided on the point for casual use by any park visitor. As illustrated on the *Master Plan* graphic, the multipurpose trail will traverse through this area on its way to connecting up with the beach facility. This trail will also improve pedestrian accessibility of this area between the beach, parking lot, fishing pier, and picnic facilities.

## Independent Family Picnic Areas

In addition to the group picnic facilities, several small family-oriented picnic areas are provided, as illustrated on the *Master Plan* graphic. The locations as shown provide scenic views, ease of access, and proximity to other activity areas.

The family picnic areas that are adjacent the park drive would include a small parallel parking area. Two to three parking spaces are envisioned for each. Parking for the picnic area adjacent to play area would be provided in the larger parking lot.

Amenities at family picnic areas would be limited to a few picnic tables and grill. A small shelter that accommodates two or three tables could also be provided if demand warrants at the family picnic area near the play area. Note that a restroom facility is not envisioned for these sites.

Maintained green space around the picnic area would vary to some degree at the two pull-off sites. At the first site along the park drive, a relatively small area is envisioned so that this use does not dominate the landscape scene. At the second site west of the play area, a larger green space is envisioned to allow a small group to recreate – e.g., play catch, frisbee, badminton, etc. Note that development of these sites is purposefully limited so that they do not become visual distractions as one travels along the park road.

The third family picnic area is located north of the play area. This location provides family picnic opportunities when the larger picnic structure is being used by a group. The amenities provided at this location would be similar to those provided at the other two sites as previously defined.

From an aesthetic perspective, the physical layout of each of these areas will be important to making sure that they fit into the landscape. The master plan provides some flexibility as to where these facilities are ultimately located along the park drive and relative to other park features to achieve this objective.

## Children's Play Area

*(View of play area from the parking lot on its west side.) The first photo shows the northern half of the structure, with the second photo showing the southern half.*



The children's play area located near the large picnic shelter has proven to be quite popular on a day-to-day basis, especially when larger groups are using the nearby picnic shelters. As shown in the aerial, the play area is fairly large and consists of several play containers for various age groups. The existing pathway system from the west parking lot is necessary to provide an accessible route to the structures.

Expansion of facilities in this area is expected to be relatively limited given the current level of development. Amenities that could be added if demand warrants include games areas (e.g, four squares and hopscotch) and adding select pieces of play equipment to augment what already exists. Redesigning and paving the parking lot is also envisioned to be consistent with other parking lots previously described for other use areas. Adding additional overstory trees in this area is also envisioned to provide more shade and improve the aesthetic qualities of the area. Planting of select species of oaks is recommended to be consistent with the nearby oak savanna systems.

As illustrated on the *Master Plan* graphic, linking this use area to the proposed multipurpose trail is also envisioned to improve ease of access from the greater park area. Creating more direct connections between the play area and the various nearby picnic areas is especially important since these facilities are most often used by families with children.

*Aerial (looking north) illustrating the existing play area and its immediate surroundings. The roadway on the east (right) side of the play area will be transitioned to a multipurpose trail corridor, which will greatly increase the ease of access to the play area.*



## Group Camping/Activity Area (with Adventure Course)

*The group camping and activity area is a new facility proposed for the park under the updated master plan.*

*The primary development feature within this use area would be a shelter structure with restrooms and limited kitchen facilities.*

The group camping and activity area is a new facility proposed for the park under the updated master plan. As shown in the aerial, this functional use area would be located where the second boat launch currently exists (once that is combined with the other boat launch as previously defined in this section). From a group-use standpoint, this location provides a high degree of privacy and site security for activities that range from youth day camps to overnight group camping and other similar youth and adult group uses that are allowed under Carver County's park policies. Scheduled group picnics could also be accommodated at this location under a permit system if demand warrants.

*Aerial (looking north) illustrating the proposed location for the group camping/activity area. As shown, this facility would replace the boat launch, which has been consolidated with the other boat launch as previously defined in this section.*

As illustrated in figure 5.5 on the next page, the primary development feature within this use area would be a shelter structure with restrooms and limited kitchen facilities. The shelter area could be either enclosed or open air, depending on the final architectural program.



The group camping and outdoor use area consists of an acre or two of open maintained turf area within the trees and in the adjoining open area to accommodate groups of up to 60 people. This size of an area would allow for some rotation of use for turf maintenance purposes.

Other amenities in this area would be limited and simple in design. This includes drinking fountains (as water service is available), picnic tables, trash containers, and a group fire ring/small outdoor theater with grass or bench seating. As shown on the *Master Plan* graphic, a lake overlook is also proposed for this area.

As illustrated in figure 5.5, a controlled entrance drive and parking lot are provided to support the group use facilities. The parking lot would be sized to accommodate approximately 30 vehicles, with some capacity for overflow parking on grass or prairie areas. Given the light traffic, the entrance drive is kept to 18 feet in width. With the more limited use of this area, the parking lot and entrance drive could remain gravel surfaced.

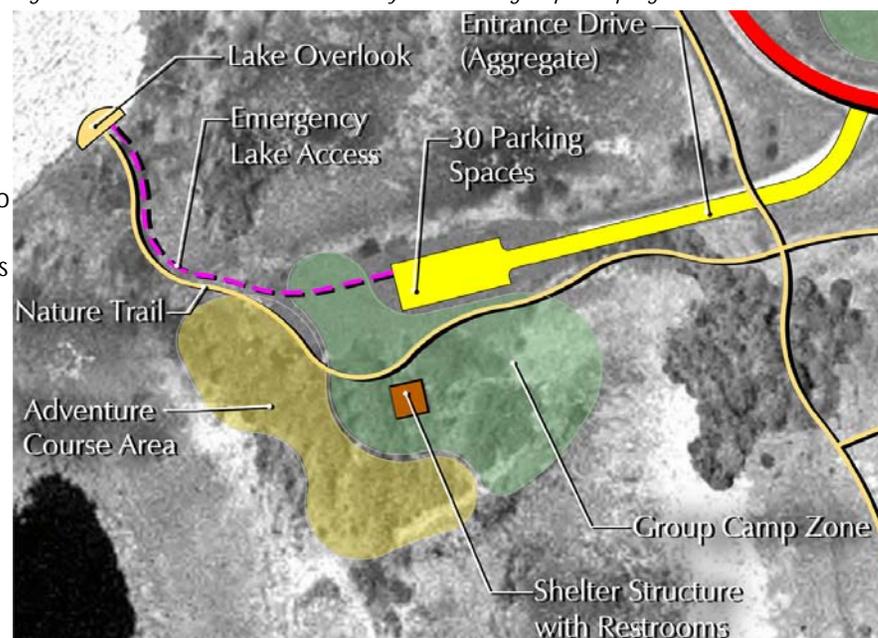
(View of parking area for the existing boat launch.) This area would be converted to a parking area and open use area under the new master plan.



With respect to trail access, a direct connection to the internal trail system is provided via the access road.

As illustrated on the *Master Plan* graphic, an Adventure Course is also proposed in the group camp area. This facility would support programs that help build participant's aptitudes in a variety of outdoor activities and skills. Although these facilities will ultimately be designed to support specific programs, potential features include a ropes course and climbing apparatus. Along with practical layout considerations, blending these facilities into the natural surroundings is also an important design consideration.

Figure 5.5 – Character sketch of the layout for the group camping area.



## Internal Trail System

The trail system that exists and is planned for within the park is expected to remain one of the most highly regarded development features.

Consistent with regional recreational trend data, the trail system that exists and is planned for within the park is expected to remain one of the most highly regarded development features. The natural landscapes, overall setting, diversity of trail character, and overall trail length add up to a very compelling experience for the trail user. As the population grows in this region, it is expected that trail use numbers will continue to grow as well. Preserving the overall quality of the trail experience while accommodating more trail users becomes the overriding challenge. Fortunately, the land forms of the park coupled with a variety of vegetation types minimizes the extent of visual overlap between trail segments.

The *Master Plan* graphic highlights the proposed general alignment of the two trail types proposed for the park, which include:

- ▶ Natural trails – soft-surfaced trails that traverse through the natural areas of the park.
- ▶ Multipurpose trails – hard-surfaced trails that connect the major park features together internal to the park and the park to the local and regional trail system.

The following considers each of these trail types in greater detail.

## Nature (Cross-Country Ski) Trails

*(View of existing nature trail.) The nature trail system in the park is one of its most popular features.*



*(View of existing nature trail.) Increasing use of the nature trails brings with it a higher propensity for erosion. Although grass trails are preferred by many, some trail surfaces will likely require more aggressive approaches to maintaining a stable trail bed.*



One of the hallmarks of the park is the diversity of experience that can be gained by simply walking through the different sections, each of which having its own unique qualities. If the past is an indication of the future, the nature trail system will continue to be one of the cornerstones of the park's development. The master plan simply builds upon the established trail network where opportunity presents itself.

The nature trail network defined under the master plan closely approximates the existing trail system. Overall, approximately 4.5 miles of nature trails are anticipated. For the most part, the existing nature trail system functions very well in terms of spreading out use and providing a variety of experiences for trail users. The degree of difficulty of the trails will vary considerably to appeal to the varying expectations of trail users. In some cases, universal accessibility will be achievable. On the other end of the spectrum, some of the trails will be steeper and narrower to appeal to the more adventurous and able-bodied individual. The intent is to maintain the diversity of experience to which park users have become accustomed.

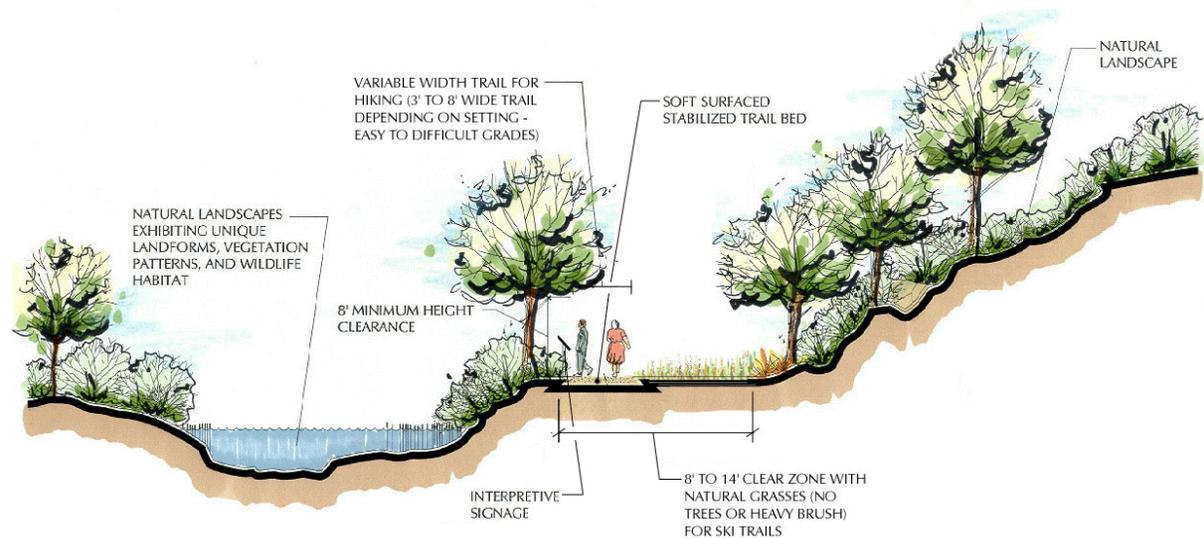
In terms of improvements, adding some length to several trails to either gain additional mileage or realign trail segments that are prone to erosion or present unacceptable grades is the primary focus. In some cases, changing alignments to bring trail users closer to a particular interpretive feature or scenic vista may also be warranted as the trails are reviewed in greater detail in future years.

From a design perspective, the natural trails will continue to be soft-surfaced. Where feasible, grass or compacted native soils remains desirable, especially in areas of less use. Pragmatically, increasing levels of use will undoubtedly require a more aggressive approach to trail stabilization as time goes on. This will likely include the use of compacted aggregate in heavily used areas or areas prone to erosion. Although this may seem quite undesirable to many trail users, the careful selection of surfacing materials (color, texture, etc.) and the use of organic-based stabilizers can substantially avoid many of the visual characteristics often associated with a more "developed" trail while still reaping the benefits. A more stabilized trail can actually result in *reduced* ecological and visual impacts by reducing erosion, keeping the trailway narrower, and helping to prevent trail "creep" and trampling of adjacent plant life.

In terms of width, the overall clear zone will have to be wide enough to accommodate cross-country skiing, which ranges from an eight foot minimum to 14 foot for double-tracked or skate-ski trails. For summer use, a stable trail bed of as little as three or four feet on up to about eight feet is anticipated. Figure 5.6 illustrates these design concerns.

From a cross-country skiing perspective, the existing trail experience is held in very high regard by skiers. Whereas the new master plan suggests some functional improvements, maintaining the essence of the current system is an important underpinning to the winter trail system.

Figure 5.6 – Character sketch of nature trail setting.



The nature trails connect to virtually every major facility within the park.

As illustrated on the *Master Plan* graphic, the nature trails connect to virtually every major facility within the park. This approach serves two primary purposes:

- ▶ Provide easy access to the nature trail system from other popular facilities.
- ▶ It creates a more dispersed approach to trailhead parking. This increases the propensity for spreading out the trail use to more areas of the park. (Although this has not been an issue in the past, there is a greater likelihood of this occurring as trail use increases in future years.) Dispersed trailheads where parking lots are shared with other functions is also a more efficient, less space-consuming, and a less imposing design approach than creating single-purpose parking lots.

## Multipurpose Trails

The primary function of the multipurpose trail is to link major development areas together into a cohesive whole.

The primary function of the multipurpose trail is to link major development areas together into a cohesive whole. While the natural setting for these trails remains very important, emphasis is also placed on providing a higher degree of accessibility for the less ambulatory with greater consistency in terms of grades, trail width, and surfacing. By design, these trails will provide a higher level of service to those that still desire a “walk in the woods”, but prefer to do so on a less physically challenging trail. In addition, multipurpose trails expand the user base to include other user groups, like recreational bicyclists, whose opportunity in the past to enjoy the park has been very limited. These trails will also serve the needs of families, small groups, and older individuals that want to enjoy the park, but are less inclined or unable to use the inherently more difficult and less consistent nature trails.

*(View of existing roadway.) Transitioning redundant roadways into multipurpose trail corridors creates a compelling trail experience with minimal disruption to the surrounding landscape.*



*From a design perspective, the multipurpose trail will be hard-surfaced to accommodate a variety of users, including walkers, bicyclists, and in-line skaters.*

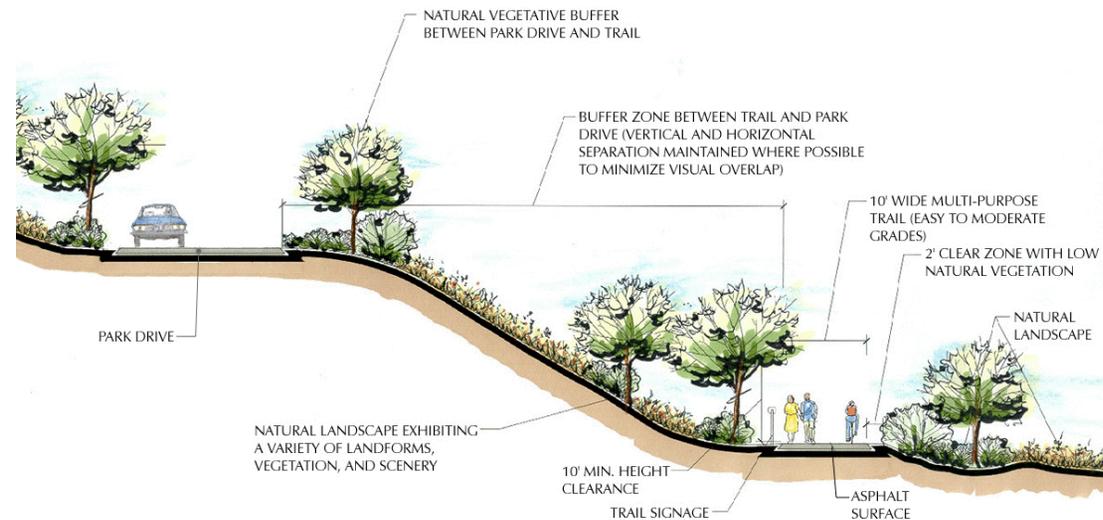
As illustrated on the *Master Plan* graphic, the multipurpose trail provides a linear connection through the park that begins at County Road 41— where a local trail corridor is proposed – and terminates at the beach, with direct connections to the major development areas along the way. Overall, approximately 1.4 miles of *primary* multipurpose trails are anticipated. Approximately 0.80 miles of *secondary* trails that connect various development areas to the primary trail are also anticipated. In as much as possible, these trails will traverse through natural areas to provide a pleasant experience for the user similar to that found along the nature trails.

As illustrated on the *Master Plan* graphic, the trail connects to County Road 41 south of the park entrance. This location allows for a grade-separated crossing in order to safely link up with the proposed local trail on the east side of the road. Note that the location as shown is conceptual and that additional engineering evaluation will be needed to determine the optimal location for a crossing. Given the existing road grades, an underpass would be the most likely design approach.

From a design perspective, the multipurpose trail will be hard-surfaced to accommodate a variety of users, including walkers, bicyclists, and in-line skaters. In terms of width, a ten foot tread width is proposed, which is consistent with generally accepted standards in regional parks. As illustrated in the *Master Plan* graphic, the only crossing of the park drive is near the Contact Station. This crossing is purposefully located where traffic is expected to be moving slower and stopping to check in with the attendant.

As illustrated on the *Master Plan* graphic and in figure 5.7, the multipurpose trail is separated from the park drive wherever feasible to provide a buffer between pedestrians and vehicular traffic. This separation makes it both a safer and more enjoyable experience for the trail user.

*Figure 5.7 – Character sketch of connector trail setting.*

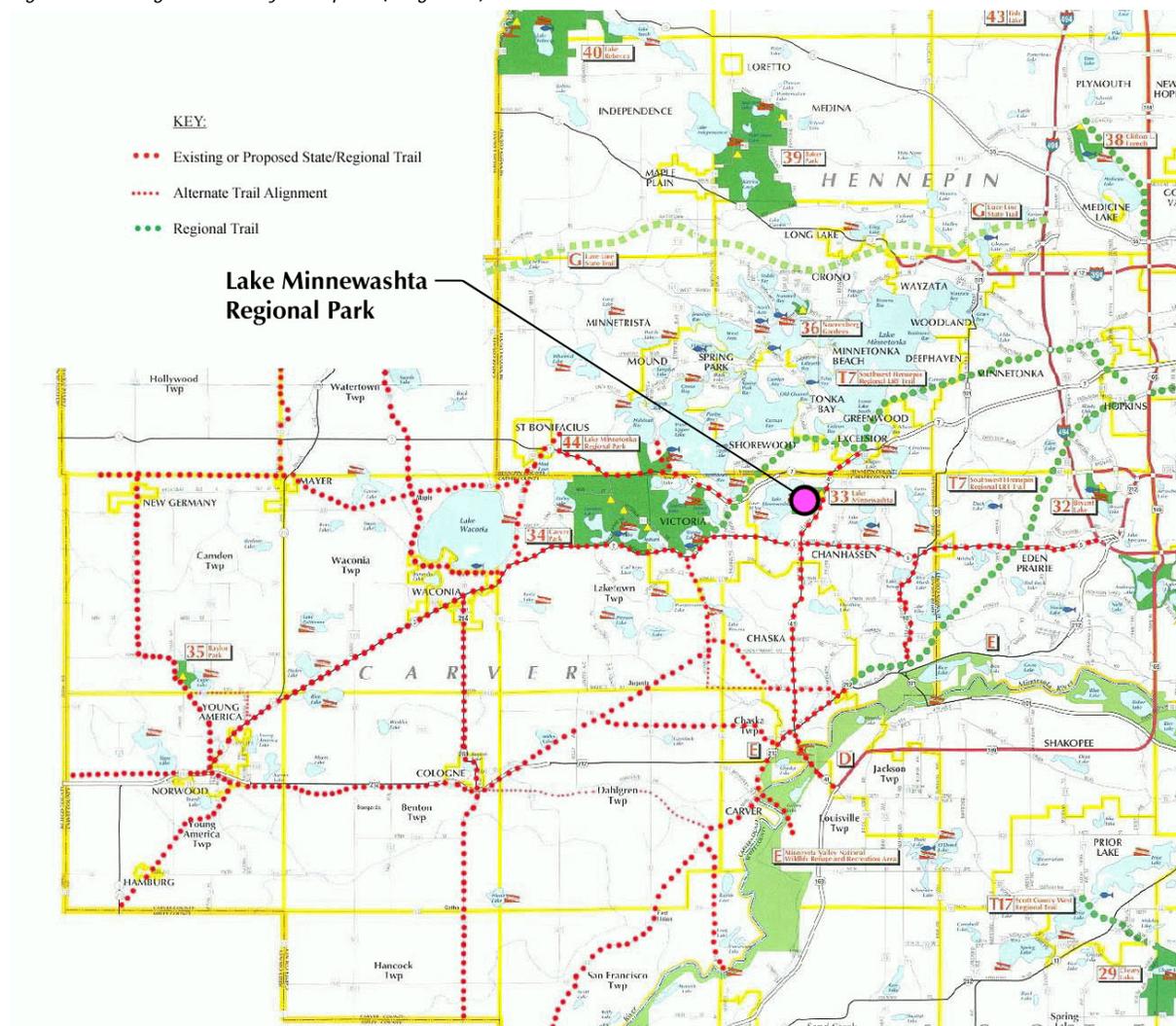


## Regional and Local Trail Interface

As defined in Section II, making connections to regional and local trail systems was an important master planning consideration in order to expand trail opportunities for park visitors and to provide opportunities for alternative forms of transportation to the park. Figure 5.8 provides an overview of the regional system within the area.

Figure 5.8 – Regional trail system plan (long-term).

Making connections to regional and local trail systems was an important master planning consideration.



As illustrated in figure 5.8, Lake Minnewashta Regional park is advantageously located when it comes to local and regional trail interconnections.

*The Visitor Contact Station is the primary trailhead facility within the park, although secondary trailheads will also be provided at each of the parking lots within the park.*

## Trailhead and Trailside Amenities, Points of Interest, Overlooks, and Fishing Piers

The Visitor Contact Station is the primary trailhead facility within the park, although secondary trailheads will also be provided at each of the parking lots within the park. An information kiosk, restrooms, vending, and resting area will be provided for trail users at the Contact Station location. Additional trailhead information will be provided where the multipurpose and nature trails interconnect with development areas, parking lots, and points of entrance into open space areas.

With respect to trailside amenities, the park's location along the lakeshore and the highly variable terrain and vegetation provide numerous points of interest and overlook opportunities. The *Master Plan* graphic illustrates a number of potential locations for overlooks and observation areas based on field review. Note, however, that these are preliminary only and will need to be field adjusted at the time of actual implementation – with the objective being to use the trails, trailside amenities, and overlooks to put people in a position to enjoy the beauty of the park.

To avoid taking away from the experience itself, the design for all of trailside amenities will be simple in keeping with the natural landscape. Important to siting these features is controlling the field of view from specific points of interest to preserve the aesthetic value of what is being observed. The careful placement of trails and trailside amenities is critical to preserving the experience that the park visitor is seeking. The master plan also includes maintaining the existing fishing pier near the beach facilities.

## Caretaker Residence

*Carver County Parks has had good success with providing an on-site caretaker to oversee some of the day-to-day operations and activities within the park.*

Over the years, Carver County Parks has had good success with providing an on-site caretaker to oversee some of the day-to-day operations and activities within the park. A residential home is provided near the park entrance for the caretaker, as illustrated on the *Master Plan* graphic.

For the foreseeable future, Carver County Parks anticipates that this practice will continue, although the role of the caretaker position may change as determined appropriate by Carver County Parks and the County Board. At some point in the future, the caretaker responsibilities may be shifted to other parks staff and/or park rangers if doing so is determined to be a more effective and efficient. Should that occur, the residential home would be removed from the park, unless another appropriate use is found in the interim.

## Maintenance Building

*This facility will continue to support the maintenance function as part of the master plan.*

As illustrated on the *Master Plan* graphic, an on-site maintenance facility currently exists within the park. This facility will continue to support the maintenance function as part of the master plan. If used only for upkeep of this park, the facility would be limited to that which is specifically needed for day-to-day functions. Facilities anticipated for this level of service include:

- ▶ 3,000 square foot building with vehicle bays, small office, adjoining meeting/lunch room, mechanical room, and restroom.
- ▶ Small parking lot and outside storage yard.

Although a storage yard is needed for storing materials, its size would be limited and positioned out of sight. The storage area would be fenced for security purposes. Upgrades to the existing facilities could be undertaken on an as-needed basis. It is expected that the current facilities will be suitable for a number of years.

Note that the master plan provides the flexibility to expand the maintenance facility to service regional trails in addition to the park should that be considered advantageous by Carver County Parks as part of its overall maintenance function. Although the extent to which the facility would have to be expanded has yet to be defined under this scenario, expectations are that it would be modest. Note also that if this expansion of maintenance service did occur, the access drive location and connection to County Road 41 may require a different design approach than that illustrated on the *Master Plan* graphic to accommodate a higher level of use from vehicles outside of the park.

## Off-Leash Pet Areas

*Determining whether Lake Minnewashta or some other park(s) are suitable locations for this type of use should be part of a broader discussion in which all options are carefully considered.*

One of the emerging park use trends is the demand for designated off-leash pet exercise and training areas and off-leash pet trails. Input gained from citizens interested in this issue, along with technical review of what other agencies are doing in this regard suggests that there is a demand for the development of these facilities within regional parks such as Lake Minnewashta (as well as parks in the surrounding communities).

With respect to how others are addressing this issue, a number of the regional park agencies have established or are testing off-leash areas or trails using a variety of design approaches. In some cases, marked successes have been realized. In others, success is more limited and new approaches may be needed to address the issue. The most common problems cited in the latter cases are that the areas are too small or there is a need for more trails within the designated space for people to walk along with their pet.

From a needs assessment standpoint, establishing legitimate off-leash pet exercise areas within the regional and local park systems within this geographic area seems to have merit and warrants further investigation by Carver County in concert with the local municipalities. Determining whether Lake Minnewashta or some other park(s) are suitable locations for this type of use should be part of a broader discussion in which all options are carefully considered. Since this evaluation has yet to occur, determining whether or not off-leash dog areas or trails are appropriate within this park has also yet to be fully assessed. Given this, the master plan allows some flexibility on whether or not this type of facility is ultimately appropriate for Lake Minnewashta Regional Park.

Based on anecdotal evidence, it can be surmised that responsible pet owners pose few concerns to the safety of the general public. It is also clear that establishing off-leash pet areas and/or trails would offer numerous benefits to pet owners. On the other hand, a number of concerns were cited during the public process that warrant consideration as Carver County addresses this issue in the future, including:

- ▶ Impact to natural resources – as a park with a strong ecological underpinning, impacts to wildlife was of concern to many of those that participated in the public process.
- ▶ Personal safety – anecdotal evidence suggests a real concern about personal safety when encountering off-leash pets in the park that are threatening to other trail users (perceived or actual).
- ▶ Management – concern was expressed that by “inviting” pet owners to the park by providing off-leash areas the propensity for people having their pets off-leash in non-designated areas is increased.

Based on public comment, allowing *on-leash* pets in the park that are under the direct control of the owner remains appropriate.

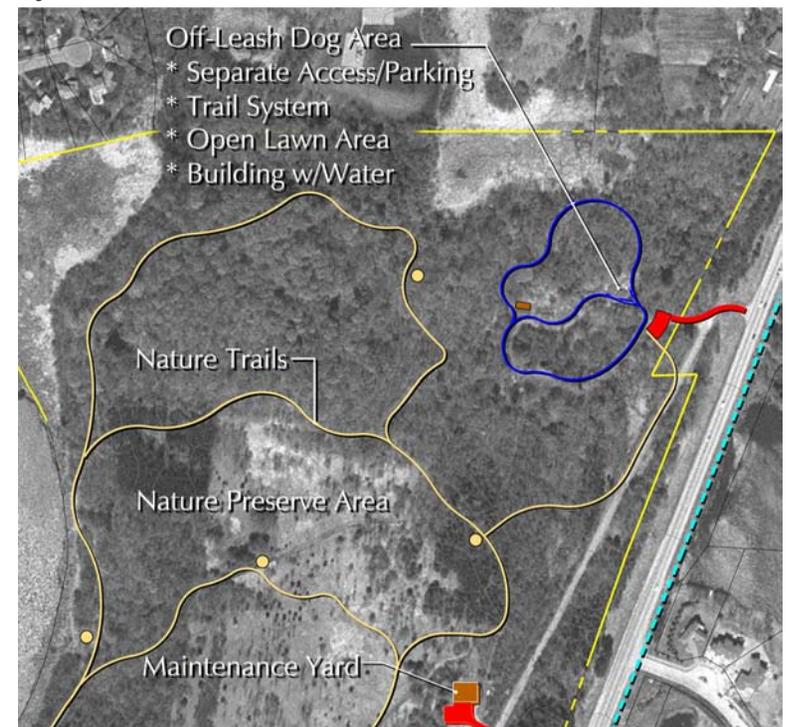
Although the master plan does not draw any final conclusions, consideration was given to where such a facility could be located if found to be appropriate. As illustrated on the *Master Plan* graphic and figure 5.9, the northeast corner of the park offers a very appealing location.

At between 15 and 20 acres, this location provides a cross-section of physical settings ranging from woodlands and open fields to wetlands and a few small ponds.

Typical amenities recommended for this area include:

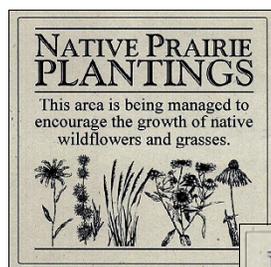
- ▶ Perimeter fence – simple woven wire “farm” fence to define the limits of the pet area.
- ▶ Parking lot – as illustrated, the parking area would have its own access from County 41 to limit conflicts with other park users and control fee collection.
- ▶ Internal trails – some formalized with woodchip or aggregate surface, others simple grass paths through the woods.
- ▶ Picnic tables and small shelter structure.
- ▶ Well for drinking water.
- ▶ Waste containers and dog-bag dispensers.
- ▶ Pay box, signage, and information kiosk.

Figure 5.9 – Off-Leash Pet Area of Master Plan.

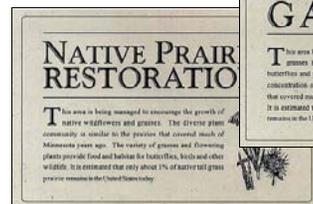


## Park and Trail Signage Program

*One of the more important communications tools is a comprehensive signage program that is carried uniformly throughout the park.*



*Examples of signage related to nature interpretation and education. (Source: Vacker Inc.)*



One of the more important communication tools is a comprehensive signage program that is carried uniformly throughout the park. The signage should provide a consistent message to park and trail users and provide information related to facility locations, trail routes, park rules and regulations, and other pertinent information.

The signage program is of particular value with respect to the ecological stewardship program, where providing interpretive information to park and trail users at the point of contact has proven to be one of the most effective forms of education. The main benefit is that the park user can apply new knowledge immediately and begin to internalize its significance based on first hand experience.

### Key Components of a Comprehensive Signage Program

The park signage program consists of a hierarchy of signs that give the park visitor needed information in an unobtrusive manner. From a design standpoint, a strong overall theme that is consistent with the natural qualities of the park is important. As with the buildings, signage should be considered an architectural element that adds to the aesthetic qualities of the park.

Key components of the signage program include:

- ▶ Park identification sign – located at the main point of entry. This sign sets the design theme for the entire signage program.
- ▶ Park directional signage – located along the entrance drive and provides basic directional information.
- ▶ Main information signs/kiosks – located at the major use area. This sign provides a park map, general information and rules, and an overview of the ecological stewardship program.
- ▶ Trailhead sign – located at the start of a trail and provides a trail map and ecological stewardship program overview.
- ▶ Trailside exhibit sign – located along trails and provides information on ecological restoration and management activities and plant identifications.
- ▶ Trail intersection sign – located at trail intersections and provides a map of the trail system and “you are here” designation. Given the size of the park, intersection signs will be most advantageous where the park trails interlink with the local and regional trails outside of the park.

Although many of these components are commonplace, giving greater attention to ecological stewardship as part of the signage program is recommended to raise visitor’s consciousness about this important issue.

## Informal Sliding Hill

As the *Master Plan* graphic illustrates, an informal sliding hill is proposed on the south side of the park drive south of the Visitor Center. The hill takes advantage of a north facing slope that is well suited for this use.

The design of the sliding hill will need to take into account any potential conflicts with cross country skiing, the multi-purpose trail and park road. If these potential conflicts can not be overcome, an alternate location will be considered or the sliding hill would be eliminated from the master plan.

## Control of Borders

With respect to control of the park boundary from encroachment and unauthorized access, the master plan relies on enforcement of Carver County ordinances over physical barriers, such as fences. From a practical standpoint, fencing the entire site would be costly and unnecessary. To control abuses of the park's boundary, periodic border patrol by park rangers is recommended, with violators being reprimanded in accordance with County ordinances and laws.

In select situations, Carver County, at its discretion, may determine that a physical barrier, such as a fence, may be warranted to prevent encroachment into the park or to curtail "informal" foot paths or four-wheel tracks from becoming maintenance and access control concerns.

With respect to pedestrian-level access, the trail access points defined by the park master plan will be the established points of entry into the park. These represent the locations that currently exist or are planned. Beyond these, no additional defined entry points are being proposed at this time.

The one issue that an open border approach cannot be successful in controlling is free-roaming domestic animals. Here too, enforcement of animal control laws is the most reasonable approach in spite of its inherent limitations. Consistency in applying ordinances and public education about the County's responsibilities to take action where abuses are found will be important to controlling this often unnoticed, but certainly destructive, occurrence from becoming a problem.

## Public Services/Utilities

Carver County will service the park with sewer and water through on-site facilities approved by the Minnesota State Board of Health, state and other local regulatory agencies where applicable. Placement scheduling of on-site facilities (wells, septic systems, water pipes) will be ongoing, and determined by park usage and funding availability as development of the park progresses. If in the future sewer and water easements are requested by the City of Chanhassen to run through the park, those easements will be provided at no cost to the City. However, no easement will be located where it could materially affect the character of the park. Heating fuels for the buildings requiring heat will be stored on site. Electrical service has been provided by Excel Energy. A private trash hauler is contracted to remove refuse from the park.

## Development Conflicts

As a well-established park, the level of existing or potential conflict encountered during the planning process was very minimal. From a land area perspective, there are no remaining property boundary issues facing the park given that land has already been acquired as part of previous master plans that date back to the mid 1970's early 1980's. There are also no notable conflicts related to the park's boundary and adjoining land uses.

From a development perspective, conflicts between user groups were minimal and not considered a significant issue for the future. The development program defined in this section is considered by the public to represent a reasonable balance between recreational use and natural area preservation. Based on the results of the public process, no notable conflicts are anticipated.

## Universal Design/Special Needs Framework

In recent years, extensive public debate has been focused on equal access to indoor and outdoor public spaces for all individuals. The Americans with Disabilities Act of 1991 (ADA) turned past guidelines and standards into law, forever changing the way accessibility issues are to be addressed. But the ADA is not an end unto itself. It is simply another step toward a design philosophy that ensures accessibility for all. The challenge is to move beyond the ADA to a more encompassing approach to design. The following defines how that challenge will be addressed in this park setting.

### The Principle of Universal Design

As stated in the published design guide *Universal Access to Outdoor Recreation* (PLAE, Inc. 1993), past criteria for barrier-free design (elimination of barriers to access) were based upon the needs of average human beings or the needs of the wheelchair user (which was often thought to represent the broadest spectrum of disabling conditions). In reality, the range of abilities and disabilities goes well beyond that limited definition. It has become evident that design philosophy must continue to evolve if a barrier-free environment is to be realized in the design of parks.

Universal design is an approach to design that achieves this philosophy by combining the basic principles of barrier-free design with a more comprehensive view of human beings. Under this paradigm, universal design attempts to consider all degrees of sensory awareness, all types of locomotion, and all levels of physical and intellectual function. By doing so, the needs of individuals with varying desires, abilities, and expectations can be reasonably accommodated.

The philosophical underpinnings of universal design as defined by *Universal Access to Outdoor Recreation* includes:

- ▶ People purposely choose settings for their recreation activities.
- ▶ Choices are made with the expectation of achieving specific recreational experiences.
- ▶ Desire is to provide as broad of a spectrum of activities and recreational settings as practical for a given site.

The recreation opportunity spectrum (ROS) classifications serve as a means to achieve this end. These are flexible guidelines that set the framework for making appropriate accessibility decisions that permit universal access within the context of the public's expectation for a certain type of setting.

### Recreation Opportunity Spectrum (ROS)

The ROS is a recreation management approach used by the USDA Forest Service that is in keeping with the principles of universal design. The ROS framework is based on a continuum of possible combinations of recreation settings, activities, and experiential opportunities, as well as the resulting benefits that can accrue to the individual (by improving physical and mental well-being) and society.

To be manageable, the recreation opportunity spectrum is divided into four classifications that cover the full spectrum of outdoor recreation environments. These classifications are divided primarily in terms of perceivable modifications to the natural environment and the related influences these modifications have upon visitor expectations. The following briefly defines the four ROS classifications:

- ▶ **Urban/rural areas** – are highly developed and evoke expectations of easy access.
- ▶ **Roaded natural areas** – are less developed than urban settings, but still contain a relatively high number of modifications to the environment. These areas evoke an expectation for a moderate level of accessibility and a reasonable expectation for “like” experiences.
- ▶ **Semi-primitive areas** – are rarely developed, and evoke an expectation of difficult access.
- ▶ **Primitive areas** – have few, if any, modifications. These evoke expectations for the most difficult access that require specific skills and capabilities.

Under the ROS framework, it is not necessary, nor even desirable, to develop all recreation equally. From the ROS perspective, each site should be developed or modified in a manner that achieves harmony between recreation expectations and the environmental setting. What is important is that the level of access be in line with what is expected by the public – whether they are able-bodied or disabled – for a particular setting

### Application of Universal Design Principles

The objective with universal design is to consciously apply the principles to this park setting to determine what is most appropriate given the circumstances. At the very least, the outcome would be that more people of different levels of ability will have life-enriching experiences in the park. At the very most, the park will serve as an example for others to follow, ultimately furthering the cause of making universal access an integral part of all park designs.

Of the four ROS classifications defined above, the urban/rural classification has the most utility for the following reasons:

- ▶ The park is situated directly adjacent to a growing community and a popular lake. As such, there will be an expectation that the park will be reasonably accessible to all populations.
- ▶ The character of the land is such that a high degree of accessibility can be provided without compromising the experience of those that are more capable and are seeking a more adventurous outing in a nature setting.

### Involvement of Representative Populations in the Design Process

Since universal design is still an evolving approach to design, achieving universal access is often simpler in concept than in practice. Anticipating the needs of people with varying degrees of abilities is a formidable task since it is often very difficult to understand the specific needs of individuals with certain disabilities when one does not share those limitations. Therefore, it is imperative that the design process include individuals that represent a cross-section of people with and without disabilities. As the project moves into design implementation phases, efforts should be made to involve representatives of divergent populations in the detail design of specific facilities. This approach helps to ensure that the design for any given facility will actually serve the intended populations.

## Section VI

# Implementation, Operations, and Management Plan

### Overview

*The implementation of the master plan for Lake Minnewashta Regional Park will require significant initial and long-term capital investments.*

The implementation of the master plan for Lake Minnewashta Regional Park will require significant initial and long-term capital investments for physical development, ecological stewardship, operations, and maintenance. Undoubtedly, implementation will occur over a number of years as funding and other resources become available and plans become refined and ready for implementation. The following considers an overall strategy for implementation of the plan. This section also considers Carver County's approach to operations and management as it pertains to this park.

### Implementation Cost Projections

*The cost analysis is based on a combination of site-specific development requirements and projects of similar size and complexity.*

### Site Preparation and Development Program Cost Projections

The following cost analysis defines the potential costs associated with each development component of the master plan. It is based on a combination of site-specific development requirements and projects of similar size and complexity. The costs are also based on having the work completed by private contractors and specialists. It does not take into consideration work that could be performed by County staff, volunteer groups or other means.

The cost figures are intended to be used for budgeting purposes, project phasing, and comparing the relative cost of one item to that of another. The costs are in 2002 dollars. Although intended to be conservative, it should be recognized that actual costs will vary depending on the year that each aspect of the master plan is implemented, economic conditions affecting bidding, and the actual site conditions found in the field during construction.

*The cost analysis defines the potential costs associated with each development component of the master plan.*

<b>Development Program Cost Projections</b>		
<b>Master Plan Component</b>	<b>General Description of Cost Items Included in Estimate</b>	<b>Cost Estimate (In Dollars)</b>
Park Entrance Drive and Entrance Area Enhancements	<ol style="list-style-type: none"> <li>1) Removals and grading (includes removal of old County Road 41 corridors)</li> <li>2) Development of stormwater convenience systems – natural systems and built systems (culverts, storm sewer, etc.)</li> <li>3) Rural-section asphalt entrance road, turn lanes and pull-off areas</li> <li>4) Realigned of gravel road to maintenance facilities</li> <li>5) Gate at entrance and general roadway signage</li> <li>6) Entrance area enhancements (fencing, etc.)</li> <li>7) Miscellaneous roadway-related site amenities</li> <li>8) Restoration &amp; landscape enhancements</li> </ol>	500,000
Boat Launch Facilities (Includes Car-Only Parking Spaces)	<ol style="list-style-type: none"> <li>1) Removals and grading (including removal of old launch)</li> <li>2) Parking lot development (asphalt with curb)</li> <li>3) Development of stormwater convenience systems – natural systems and built systems (culverts, storm sewer, etc.)</li> <li>4) Pedestrian asphalt connector trails and walks</li> <li>5) Boardwalk between parking lots</li> <li>6) Double boat launch with two boarding docks</li> <li>7) Small shelter structure</li> <li>8) Picnic area amenities and signage</li> <li>9) Restoration &amp; landscape enhancements</li> <li>10) Security lighting</li> </ol>	355,000
Visitor Contact Station	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Building structure (1750 s.f. basis) (does not include pilings)</li> <li>3) Adjoining walkways and patios</li> <li>4) Restoration &amp; landscape enhancements</li> <li>5) Utilities (well, septic system, electric, etc.)</li> <li>6) Miscellaneous site improvements.</li> <li>7) Security lighting.</li> </ol>	545,000
Picnic Area # 5 Improvements	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Parking lot redevelopment (asphalt with curb)</li> <li>3) Development of stormwater convenience systems – natural systems and built systems (culverts, storm sewer, etc.)</li> <li>4) Pedestrian asphalt connector trails</li> <li>5) Overlook area development</li> <li>6) Restoration &amp; landscape enhancements</li> <li>7) Security lighting</li> </ol>	130,000
Beach Facilities Improvements	<ol style="list-style-type: none"> <li>1) Sand-based play equipment for beach area</li> <li>2) Upgrade picnic facilities and misc. site amenities</li> </ol>	45,000

Master Plan Component	General Description of Cost Items Included in Estimate	Cost Estimate (In Dollars)
Group Picnic Areas #2, #3, and #4 (with Centralized Restroom)	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Parking lot development (asphalt with curb)</li> <li>3) Development of stormwater convenience systems – natural systems and built systems (culverts, storm sewer, etc.)</li> <li>4) Overflow parking area (prairie)</li> <li>5) Asphalt connector trails / walks</li> <li>6) New shelter structure (80 capacity)</li> <li>7) Miscellaneous site amenities</li> <li>8) Centralized restroom facility</li> <li>9) Utilities (well, septic system, electric, etc.)</li> <li>10) Restoration &amp; landscape enhancements</li> <li>11) Security lighting</li> </ol>	615,000
Independent Family Picnic Areas	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Misc. improvements (picnic tables, grills, etc.)</li> <li>3) Restoration &amp; landscape enhancements</li> </ol>	50,000
Play Area Improvements	<ol style="list-style-type: none"> <li>1) Removals and grading for parking lot</li> <li>2) Parking lot improvements (asphalt with curb)</li> <li>3) Development of stormwater convenience systems – natural systems and built systems (culverts, storm sewer, etc.)</li> <li>4) General improvements to the play structure and misc. site amenities</li> <li>5) Asphalt connector trails</li> <li>6) Miscellaneous site amenities</li> <li>7) Restoration &amp; landscape enhancements</li> </ol>	105,000
Group Camp Area (with Adventure Course)	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Upgrade aggregate entrance drive and parking area (with gated access)</li> <li>3) Shelter structure with restrooms (does not include pilings)</li> <li>4) Utilities (well, septic system, and electric)</li> <li>5) Adventure course</li> <li>6) Restoration &amp; landscape enhancements</li> <li>7) Misc. improvements (picnic tables, grills, trash containers, etc.)</li> <li>8) Security lighting</li> </ol>	440,000
Nature Trails	<ol style="list-style-type: none"> <li>1) Removals required for building new trails.</li> <li>2) Grading and trailbed preparation for new trails</li> <li>3) Trail development/improvements</li> <li>4) Trailhead and trailside amenities (overlooks, benches, decks, etc.)</li> <li>5) Storm sewer systems (culverts, diversions).</li> <li>6) Misc. improvements (retaining walls, etc.)</li> </ol>	90,000

Master Plan Component	General Description of Cost Items Included in Estimate	Cost Estimate (In Dollars)
Multipurpose Trails	<ol style="list-style-type: none"> <li>1) Removals required for building new trails.</li> <li>2) Grading, and trailbed preparation, including some soils corrections.</li> <li>3) Trail development (asphalt surfaced)</li> <li>4) Trailhead and trailside amenities – (benches, kiosks, etc.)</li> <li>5) Storm sewer systems (culverts, diversions).</li> <li>6) Misc. improvements (retaining walls, etc.)</li> </ol>	230,000
Off-Leash Dog Area Development	<ol style="list-style-type: none"> <li>1) Removals and grading</li> <li>2) Parking lot and entrance drive construction</li> <li>3) Miscellaneous amenities</li> <li>4) Perimeter fencing</li> <li>5) Landscape restoration and buffer enhancements</li> </ol>	85,000
Maintenance Building	<ol style="list-style-type: none"> <li>1) General maintenance building upgrades</li> <li>2) Landscape screening</li> </ol>	105,000
Signage Program	<ol style="list-style-type: none"> <li>1) Internal park signage program.</li> </ol>	50,000
<b>Total Master Plan Cost Estimate</b>		<b>3,345,000</b>
Construction Contingency (15%)		501,750
<b>Total Master Plan Cost Estimate with Contingency</b>		<b>3,846,750</b>
Professional Fees and Charges (Surveying, Design, Engineering, Etc.) (15%)		577,013
<b>Total Master Plan Cost Estimate with Contingency and Professional Fees and Charges</b>		<b>4,423,763</b>

*Restoration and management of the ecological resources within the park will be a significant cost factor as the master plan is implemented.*

### Ecological Stewardship Program Cost Projections

Restoration and management of the ecological resources within the park will be a significant cost factor as the master plan is implemented. Since the ecological stewardship program is in its infancy, Carver County Parks does not have any data that could be used for projecting costs associated with ecological restoration and management. Under these circumstances, projecting these costs offers certain practical limitations, especially given the fact that a living environment has many nuances that will take years to completely understand.

Lacking baseline data, a unit-basis cost projection was completed to define the potential cost magnitude of restoring and managing the park's ecological resources. The following provides a breakdown of potential costs for both initial restoration and long-term stewardship. The unit costs were derived from past projects in this region of a similar nature. The cover type categories are limited to those that represent a cross-section of the plant communities that would be restored within the park. The critical difference between each category is the propensity for trees versus grasses, upland versus lowland, and hydrologic and soil variables that affect restoration efforts, timeframes, and costs.

Potential Initial Restoration Costs					
Cover Type	Acres*	Range of Cost/Acre		Total Cost	
Upland Forest Communities (Mesic Forest, Oak Savanna, Etc.)	140.00	2,500	to	5,000	350,000 to 700,000
Upland Prairie	80.00	1,500	to	3,000	120,000 to 240,000
Wetland Systems	75.00	1,500	to	5,000	112,500 to 375,000
Total Potential Cost for Remedial Work				582,500	to 1,315,000

Potential Yearly Long-Term Maintenance and Management Costs					
Cover Type	Acres*	Range of Cost/Acre		Total Cost	
Upland Forest Communities (Mesic Forest, Oak Savanna, Etc.)	140.00	150	to	200	21,000 to 28,000
Upland Prairie	80.00	150	to	200	12,000 to 16,000
Wetland	75.00	200	to	250	15,000 to 18,750
Total Potential Cost for <u>Yearly</u> Maintenance Work				48,000	to 62,750

\* Acreage does not include developed areas.

As the tables define, the range of potential costs at this level of evaluation is quite broad simply due to the uncertainties of what will be encountered. Since restoration will be extensive, costs are likely to be at the higher range. Note that these cost projections relate to the actual restoration of the native plant communities and do not include any grading and site preparation that may be necessary prior to that activity.

## Implementation Strategy and Priorities

*It is anticipated that implementation of the master plan will be phased in over a period of time to coincide with funding opportunities.*

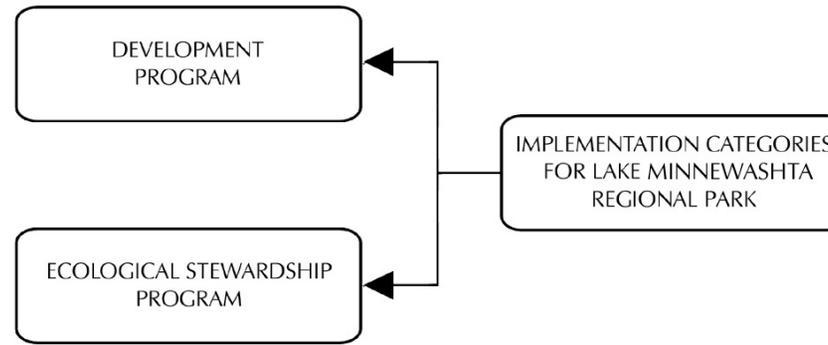
*Taking a balanced approach to implementing the development plan and stewardship program is preferred to ensure that both cultural and ecological values are realized as implementation occurs in forthcoming years.*

Given the magnitude of potential costs, it is anticipated that implementation of the master plan will be phased in over a period of time to coincide with funding opportunities. The following defines the overall strategy and priorities for master plan implementation.

### Implementation Categories

As shown in figure 6.1, the implementation plan is broken down into four categories, which reflect the major implementation challenges facing the park.

*Figure 6.1 – Implementation categories for Lake Minnewashta Regional Park.*



### Implementation Priorities Between Categories

Assuming funding availability, taking a balanced approach to implementing the development plan and stewardship program is preferred to ensure that both cultural *and* ecological values are realized as implementation occurs in forthcoming years. Under this approach, ecological and physical development are considered to be of equal priority as decisions are made regarding implementation strategies, funding packages, and maintenance and operations budget allocations.

Recognizing that funding programs for all of the elements of the plan may not in place, the master plan inherently does provide Carver County with the discretion to pursue funding for any element of the plan when funding for that specific purpose is made available. This flexibility is especially important with respect to the ecological component, where the on-going stewardship program defined by the plan is not supported by an established funding program. Until that occurs, the primary funding opportunities available to Carver County will relate to development-based initiatives.

Irrespective of funding availability, some flexibility in setting priorities and implementation strategies will also be needed in order for Carver County to react to the real conditions, circumstances, and opportunities that present themselves. In this light, the greatest utility of the implementation plan is that it provides a framework and starting point for Carver County to develop funding packages and grant applications to achieve the commonly held vision defined by the master plan.

### Strategy for Implementing the Development Program

The implementation strategy for the development program follows more traditional routes. For the most part, future capital improvements for development within the park will be funded through grants secured through the Metropolitan Council.

The following table lists the line items defined in the previous cost estimate table in order of priority relative to each other. Note that these priorities are not linked to specific implementation timeframes since actual project phasing will be a function of demand, opportunity, and funding availability. Note also that these priorities are subject to change in future years.

Priority	Development Component (as defined in Cost Projections)	Implementation Focus	Total Costs (In Dollars)
1	Park Entrance Drive and Entrance Area Enhancements	Focus in on improving the entrance sequence and park drive function to better serve visitors.	500,000
2	Boat Launch Facilities	Focus is on consolidating this function within the park, improving service to the visitor, and setting the stage for future developments.	355,000
3	Visitor Contact Station	Focus is on improving visitor services and control of the park site.	545,000
4	Group Camp Area (w/Adventure Course)	Focus is on developing a new facility to augment the existing facilities to serve various user groups.	440,000
5	Multipurpose Trails	Focus is on providing greater pedestrian-level access to key park facilities.	230,000
6	Nature Trails	Focus is on general improvements/expansion to the current successful system.	90,000
7	Signage Program	Focus is on providing a higher level of park and educational information to the visitor throughout the park.	50,000
8	Off-Leash Dog Area Development	Focus is on providing a greater level of service to this emerging park use.	85,000

*The implementation strategy for the development program follows more traditional routes.*

9	Group Picnic Areas #2, #3, and #4 (w/Centralized Restroom)	Focus is on expanding the function of this development to accommodate more visitors and to provide a greater level of service, especially in regard to improved restroom facilities.	615,000
10	Independent Family Picnic Areas	Focus is on expanding family picnic opportunities.	50,000
11	Beach Facilities Improvements	Focus is on simple improvements to this successful development.	45,000
12	Picnic Area #5 Improvements	Focus is on general improvements – especially parking – to this successful development.	130,000
13	Play Area Improvements	Focus is on basic improvements to this successful facility.	105,000
14	Maintenance Building	Focus is on expanding the capacity of the existing facility to service an expanded level of service within the park.	105,000
<b>Total Project Costs - All Phases</b>			<b>3,345,000</b>
15% Contingency (not factored into above)			501,750
<b>Total Project Costs - All Phase with Continuity</b>			<b>3,846,750</b>
15% Project Fees and Charges			577,013
<b>Total Project Costs, including Fees and Continuity</b>			<b>4,423,763</b>

With respect to long-term maintenance of buildings in the park, Carver County Parks has an established operation and maintenance fund that is funded through Carver County. Critical to this funding approach is making sure that the funds needed to maintain development initiatives is provided at the time that a new development occurs.

### Strategy for Ecological Stewardship Program

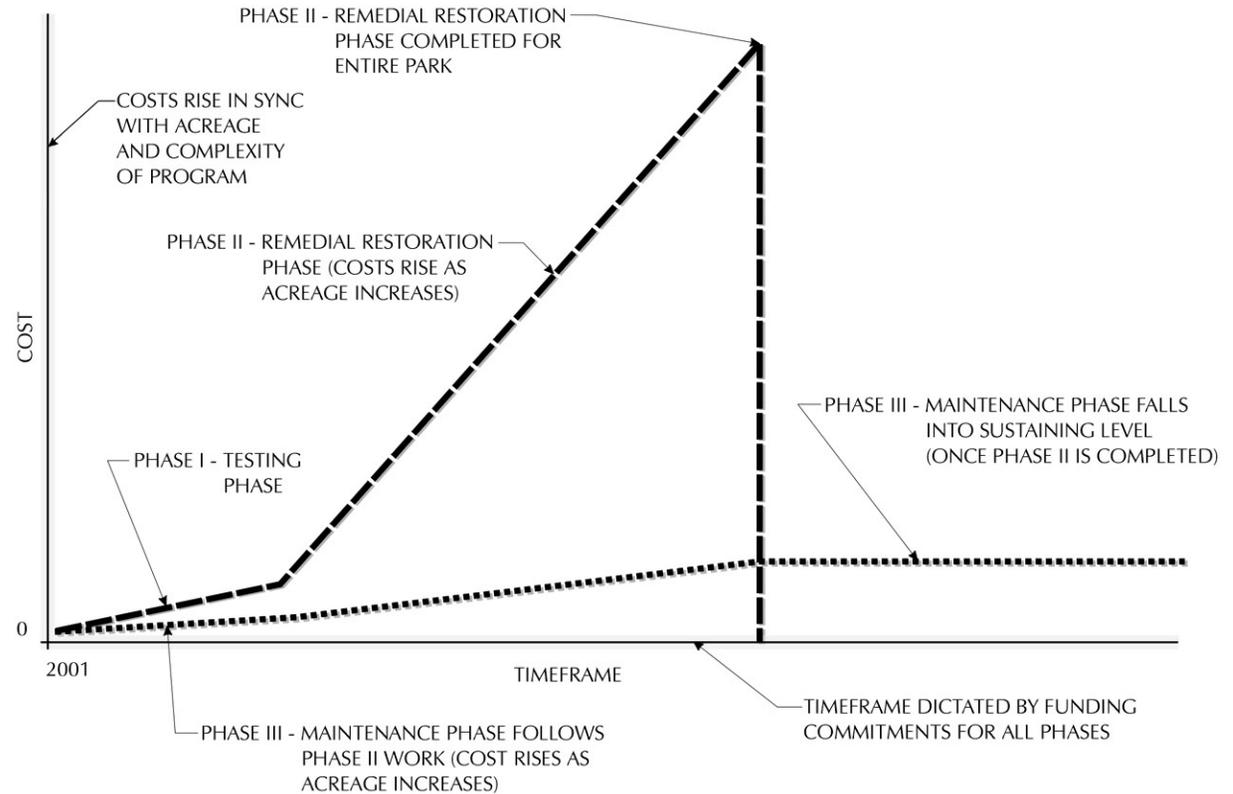
Developing and implementing an ecological stewardship program for the park is a top priority that emerged from the planning process. Although there are numerous development initiatives that are of a high priority, there is also a sense of urgency to move forward with the stewardship program in order to start the process of restoring and managing the ecological systems found within the park.

From a funding strategy perspective, the most critical factor is having a perpetual funding source in place for long-term management prior to undertaking the initial restoration activities. Lacking this funding source, gains made during initial restoration could easily be lost if not followed by prudent management in future years. In essence, the park is a living environment that can only be sustained through the careful acts of man replicating (as best one can) the natural cycles once present. This very notion gets to the core of a land ethic that takes on the responsibility today for the natural environment that Carver County hopes to foster in this park 10, 20, 50 years hence.

*There is a sense of urgency to move forward with the stewardship program in order to start the process of restoring and managing the ecological systems found within the park.*

With respect to a specific strategy, the funding program for initial restoration needs to be lock-stepped with the Phase I (testing phase) and Phase II (remedial phase) of the stewardship program as defined in Section IV. Of equal importance, the funding program for long-term stewardship needs to be lock-stepped with Phase III (maintenance phase) of the program. Figure 6.2 provides an overview of how the three phases relate to each other in terms of funding levels needed to support them.

Figure 6.2 – Shifts in funding levels in support of stewardship programs.



The cost for restoring the park's ecological systems far outpaces the costs of taking care of it once that is completed.

As figure 6.2 illustrates, the cost for restoring the park's ecological systems far outpaces the costs of taking care of it once that is completed. What this means is that if the park is managed carefully, the extraordinary costs associated with restoring it can be largely controlled in the future *as long as the maintenance phase continues indefinitely*. Also, the longer that the park's ecological systems remain in a state of decline before efforts are made to manage it, the more expensive (and scientifically challenging) it will be to restore them. The bottom line is that restoring the park's natural systems to a sustainable level of quality should be done sooner rather than later. The following table provides an overview of the key funding phases associated with the ecological stewardship program.

Implementation Priority	Implementation Focus Recommended Under this Phase	Total Costs (In Dollars)
Priority 1 – Preparation of Stewardship Program	Focus is on building upon the framework presented under this master plan to prepare a detailed stewardship program defining each phase of implementation. This includes detailed land cover classifications, refining prototypes, and developing restoration and management strategies for each condition that is found.	40,000 to 50,000
Priority 2 – Controlled Roll-Out of Restoration Program	Focus is on rolling-out the program in a controlled fashion that is supported by funding and scientific know-how.	Increases year-to-year as more acreage is restored (see table on page 6.2 for per acre cost projections)

From a funding strategy standpoint, a fairly typical capital improvement fund would suffice for funding of the *first two phases of the stewardship program* (testing and remedial phases) because it provides an infusion of dollars to complete a given task. With respect to the third phase (maintenance phase), consideration of other approaches is needed in that the demand is for consistent and long-term funding. Two examples of approaches that can serve this need are defined in the following table.

Funding Option	Overview	Advantages	Disadvantages
<b>Ecological Management Fund</b>	Establishment of a fund similar to a building upkeep or maintenance fund that is used for ongoing maintenance of buildings, trails, and so forth within the park. Funding is typically on a year to year appropriation basis as dictated by the County Board in concert with the Metropolitan Council.	Establishes a stand-alone fund for this purpose.	Only as secure as the political will to contribute to the fund. Hard economic times and uncertain ability to maintain funding levels from year to year can make this approach vulnerable. (Whereas future development initiatives and even building upkeep can be put off during hard times, stewardship of resources requires a year to year commitment.)
<b>Ecological Stewardship Endowment Fund</b>	Establishment of an endowment fund for the perpetual maintenance of ecological systems within the park.	Principle investment that is put into the fund is “locked away” and cannot be used for any other purpose. Program is actually supported by the interest generated by the fund in a secure market as dictated by County policy. The great advantage is that the stream of funding available is much more assured and predictable. Also, seed money is a one-time investment that keeps on working for the County indefinitely.	Current enabling laws governing the Metropolitan Council may preclude the use of grant dollars for creating an endowment fund. County may also have governing policies that could affect utilization of this approach. Reconsideration of any current limitations would require state-level legislative action.

As the table indicates, the endowment fund offers the greatest long-term security in ensuring that funding levels would be sustained year after year.

As the table indicates, the endowment fund offers the greatest long-term security in ensuring that funding levels would be sustained year after year. In addition, the endowment could be set up so that a certain percentage of the interest earned each year would be used to build principal so that the fund grows as time goes on. Figure 6.3 illustrates this relationship. The distinct advantage of this is that the fund itself (and the interest it generates) grows as the stewardship program expands and requires more funding. Figure 6.3 illustrates this point.

Figure 6.3 – Growth of endowment fund as a percentage of interest is reinvested.

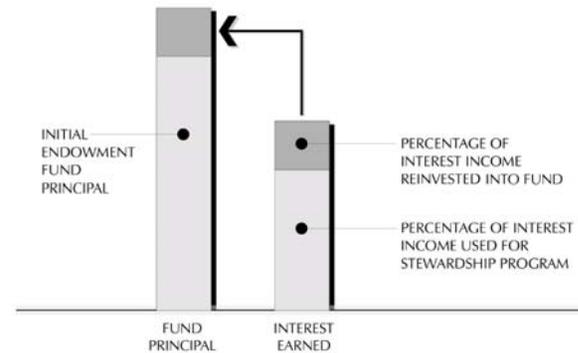
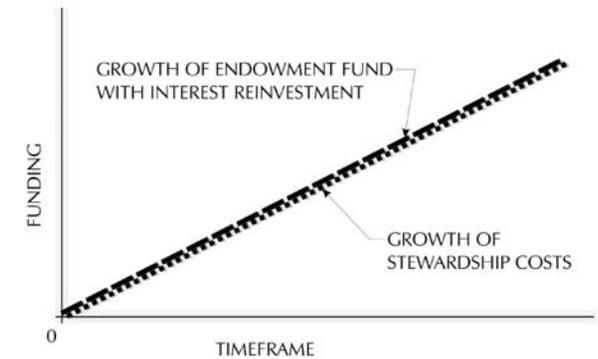


Figure 6.3 – Growth of endowment fund relative to expansion of stewardship program.



Under the framework of the endowment fund as presented, the long-term capital costs for the stewardship program could be *substantially reduced over a pay-as-you-go approach* since the fund generates interest income to support the program as well as a reinvestment back into the fund itself.

For the reasons defined above, the endowment fund option offers a number of distinct advantages and therefore should be considered in concert with more traditional funding programs.

## Public Involvement in Implementing the Master Plan

Carver County is committed to continuing public involvement through the implementation of the master plan.

Carver County is committed to continuing public involvement through the implementation of the master plan. The degree to which this will occur will vary depending on what aspect of the plan is being implemented. For larger scale projects, public involvement in the actual design process will be fairly extensive and involve representation from key stakeholders. In addition, forums for broader public input (e.g., open houses and presentations) would also be used as needed to communicate and exchange ideas with interested citizens. For smaller scale projects, such as tree planting and ecological restoration initiatives, notifications of interested parties or advocates would be a more appropriate approach.

The objectives associated with involving citizens in the implementation process include:

- ▶ Determine who the stakeholders are and their interest in a particular development initiative.
- ▶ Understand their needs and unique perspectives.
- ▶ Identify and understand concerns and problems.
- ▶ Develop alternatives and find appropriate solutions with input from stakeholders.

## Operations Plan and Maintenance Plan

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*The Carver County Parks Department is charged with the operation of the County's park system, including Lake Minnewashta Regional Park.*

In addition to formalized processes for particular projects, Carver County has an established Parks Commission that advises the County Board on development initiatives within the park. The public is welcome to attend its regularly scheduled meetings. Also, Carver County is continuing to develop numerous tools to provide a consistent level of communication with interested citizens. (Refer to the Operations Section below for more detail on these tools.)

The Carver County Parks Department is charged with the operation of the County's park system, including Lake Minnewashta Regional Park. The Carver County Board of Commissioners establishes policies and goals for the park system and through an annual budgeting process provides capital and operating funds for the Department. A Parks Commission, appointed by the County Board of Commissioners, serves as an advisory committee advocate for an improved and enhanced park and trail system in the County. The specific responsibilities of the Parks Commission, which are outlined in County Ordinance No. 19, are as follows:

- ▶ Review proposals and make recommendations concerning park and trail acquisition and development;
- ▶ Review and make recommendations concerning recreation programming, fees for facility use and park use policies;
- ▶ Recommend supporting or enhancing natural resources in County parks and regional trail corridors;
- ▶ Provide input into the County Park Policy Plan and Park Master Plans for park development site planning;
- ▶ Review and make recommendation on the Bikeway Capital Improvement Program, signage, kiosks, and trail connections;
- ▶ Perform fact-finding tasks as directed by the County Board.

A copy of the ordinance is available through Carver County.

## Ordinances

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Public use and enjoyment of the County park system, including Lake Minnewashta Regional Park, is controlled by Ordinance No. 30, Park Ordinance, (the Ordinance) which was last revised on April 14, 1987. The Ordinance incorporates pertinent Minnesota statutes, and addresses the following issues:

- ▶ Regulation of Public Use
- ▶ Regulation of General Conduct
- ▶ Regulations Pertaining to General Parkland Operation
- ▶ Protection of Property, Structures, and Natural Resources
- ▶ Regulation of Recreation Activity
- ▶ Regulation of Motorized Vehicles, Traffic and Parking

A copy of the ordinance is available through Carver County.

## Enforcement

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Park visitors are informed of park rules and regulations in a variety of ways. Kiosks and signs are strategically located to address specific information about park hours, trails, permitted and prohibited activities, fees, and directions. Park patrol educate visitors and enforce the Ordinance, where necessary. They patrol the park in vehicles, on horses, and on foot. During the winter months, park patrol in vehicles and on snowmobiles to monitor park activities. The Carver County Sheriff's Department responds to emergencies and criminal complaints.

## General Operations

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The Parks Department has an annual operations and maintenance budget of approximately \$450,000 to operate and maintain the County's park system and approximately 5 permanent employees. In addition, approximately 12 seasonal employees are hired each year as maintenance workers and gate attendants. In the future, volunteers will assist with outdoor education programs, patrol, park clean-ups and a variety of special events. Lifeguard services are contracted through the Minnetonka Community Education and Services Department.

The Metropolitan Council's *Annual Use Estimate of the Metropolitan Regional Park System for 1999* (April 2000) reported that 86,400 visits were made to Lake Minnewashta Regional Park in 1999, and that visits to the County park system increased 29% between 1988 and 1999. Planned improvements to the park are expected to increase park use and, therefore, increase revenue. Revenues from the facilities and services at Lake Minnewashta Regional Park total approximately \$50,000.

## Maintenance

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Maintenance of facilities and lands is essential to protect public investment, enhance natural resource qualities and achieve the County's goals of providing users clean, safe, enjoyable year round park experiences. The Carver County Parks Department has a clearly defined maintenance program. Reporting to the Park Director are the caretakers, maintenance personnel, and Parks Clerk. Reporting to the Lead Parks Keeper are two Park Keepers and 5 seasonal maintenance workers.

The predominant categories of tasks accomplished by maintenance staff are:

- ▶ Grounds maintenance
- ▶ Building custodial
- ▶ Facility maintenance/repair
- ▶ Equipment maintenance/repair
- ▶ Natural resource management
- ▶ Program support
- ▶ Miscellaneous shop duties
- ▶ Emergency response
- ▶ Other miscellaneous/unique duties

*Accomplishing the maintenance needs of Lake Minnewashta Regional Park will be challenging.*

As defined by the master plan, Lake Minnewashta Regional Park will have a maintenance facility that will function as an equipment and supply storage area. The facility will also provide an indoor work area to perform minor vehicle and equipment maintenance, as well as serving as a place to conduct park maintenance operations.

Accomplishing the maintenance needs of Lake Minnewashta Regional Park will be challenging. As park land and facilities are developed, new or expanded maintenance services will need to be provided. Carver County recognizes the need to remain committed to the maintenance needs of the park and to meet the new needs/priorities identified by the master plan. It is unlikely that existing staff and budget resources will be sufficient. Although increased funding is critical, perhaps even more important is increasing the number of staff. As an example, trail development and natural resource management have an initial cash intensive need, but ultimate success requires hands-on stewardship for many years to achieve desired results. This takes staff with the knowledge and time to commit to this stewardship.

Traditional and non-traditional funding and staffing sources will have to be pursued to meet the maintenance needs of the park and the master plan objectives.

## Outreach and Marketing

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Carver County continues to expand its outreach effort, in an effort to improve public awareness of its park facilities, programs, and services. This outreach effort has various components, including the following:

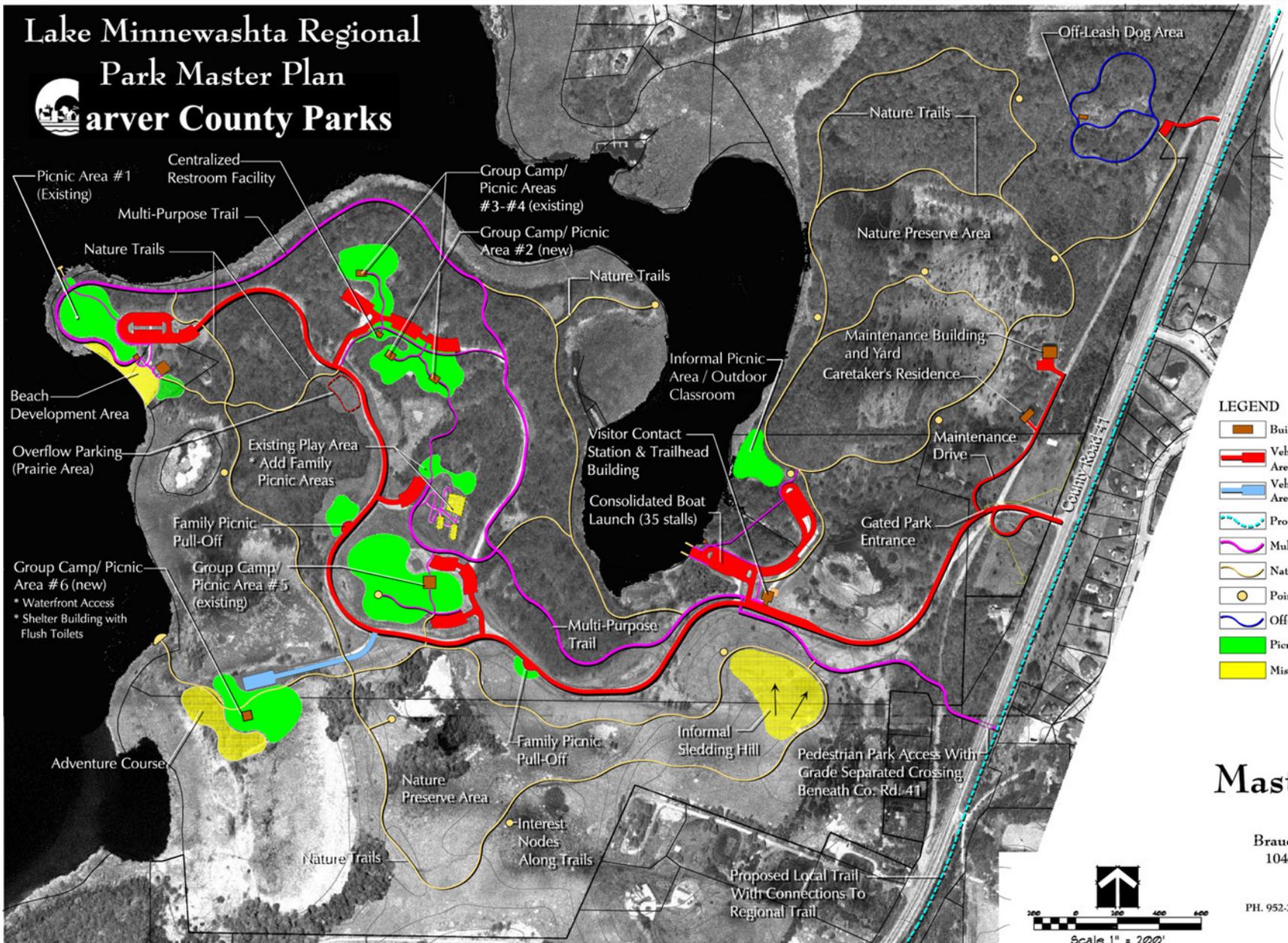
**Printed Materials:** Carver County has developed and distributes on a regular basis brochures and maps, including a park map, individual park winter and summer trail maps, and picnic opportunities brochure. Park fliers are also distributed to County departments, libraries, community agencies, the Welcome Wagon, outdoor retailers, and other contacts throughout the community.

**Electronic Communication:** Carver County is developing the use of its web page to inform citizens about the County's functions and services (e.g., Park Commission meetings, the master planning process, park facilities, and programs). In addition, the public can contact the Parks office through the County's e-mail system.

**Other Outreach:** Other forms of outreach and marketing include displays at the Carver County Fair, articles in the County quarterly newspaper, the production of flyers and brochures and the display of information at County Service Centers and park kiosks. The County also publishes news releases and advertisements in local community and metropolitan area newspapers that highlight upcoming programs and facility openings. The County also promotes park use through feature articles and presentations to other County departments and local agencies.

**Marketing Initiatives:** Carver County will be developing a comprehensive marketing plan to increase public awareness, understanding, and use of park facilities, services and programs. In addition, the marketing plan will identify the need to expand and diversify marketing and communication efforts to advance park use by minority populations and special needs groups.

# Lake Minnewashta Regional Park Master Plan Carver County Parks



## LEGEND

-  Building / Structure
-  Vehicular Drive / Parking Area (Asphalt)
-  Vehicular Drive / Parking Area (Aggregate)
-  Proposed Local Trail
-  Multi-Purpose Trails & Walks
-  Nature Trails
-  Point Of Interest / Overlook
-  Off-Leash Dog Trail
-  Picnic / Group Camping Area
-  Misc. Recreational Use Area

## Master Plan

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