



Chapter Six

Water Resources



**CHAPTER 6
WATER RESOURCES**

| | |
|---------------------------------------------------------------|------------|
| OVERVIEW | 6-1 |
| INTRODUCTION..... | 6-1 |
| INVENTORY OF EXISTING WATER RESOURCES | 6-1 |
| Lakes..... | 6-2 |
| Wetlands | 6-2 |
| Reference Wetlands | 6-5 |
| WATER RESOURCES PROTECTION AND PRESERVATION TOOLS..... | 6-6 |
| CHAPTER SUMMARY..... | 6-8 |

CHAPTER 6

WATER RESOURCES

OVERVIEW

Water resources are important elements within the City of Eden Prairie and the City's park system. This chapter defines the water resource elements within the park system that require careful planning and management in order to meet City goals. Accompanying this discussion is a description of available tools that are at the City's disposal to realize these goals.

INTRODUCTION

The natural features and elements of the physical environment, including the diversity of water resources, shape the nature of development and the community's sense of identity. A variety of creeks, drainageways and the Minnesota River form a network of green spaces and corridors in Eden Prairie. Other water resource features, such as lakes, wetlands, and stormwater ponds, are interspersed within these corridors, as well as throughout the City. The City places importance on the preservation and protection of these resources as they provide:

- Wildlife habitat and movement corridors,
- Stormwater detention and groundwater aquifer recharge for water quality improvement,
- Visual relief and aesthetic enhancement of the community,
- Buffers between adjoining land uses, and
- Environmental education opportunities for the community.

INVENTORY OF EXISTING RESOURCES

The Comprehensive Wetland Protection and Management Plan (CWMP) completed in 1999 identified a wide variety of lakes and wetlands within Eden Prairie, a number of which are within parks, conservation areas or conservation/scenic easement areas. A wetland, lake and stormwater pond inventory was completed in 1997. Wetland areas were interpreted based on aerial photograph review, soil survey data evaluation, observations of vegetation and visual indicators of hydrology. The inventory is continually updated as unidentified wetlands and new stormwater ponds are identified. In 2000, 495 wetlands, 17 lakes and 105 non-jurisdictional stormwater ponds were identified. Eden Prairie's wetlands, lakes and stormwater ponds are shown in Figure 6.1.

Functions of the wetlands and ponds were evaluated during the inventory using the Minnesota Routine Assessment Methodology (MinRAM, Version 1.0, Minnesota Interagency Wetland Group) assessment to determine wetland quality. Floristic diversity and integrity was identified as the function to base value assessments upon for water resource management and development planning.

Lakes

There are a number of lakes within Eden Prairie, and they are an important feature for everything from recreational to wildlife habitat uses. Seventeen water bodies were classified as lakes and are summarized in Table 6.1. This includes Anderson, Birch Island, Bryant, Duck, Eden, Grass, Idlewild, McCoy, Mitchell, Neill, Red Rock, Rice, Rice Marsh, Riley, Round, Smetana and Staring Lakes. These lakes, with the exception of Idlewild and Duck Lakes, have City trail systems, parks and/or conservation areas adjacent to them for the enjoyment of these water resources by the community.

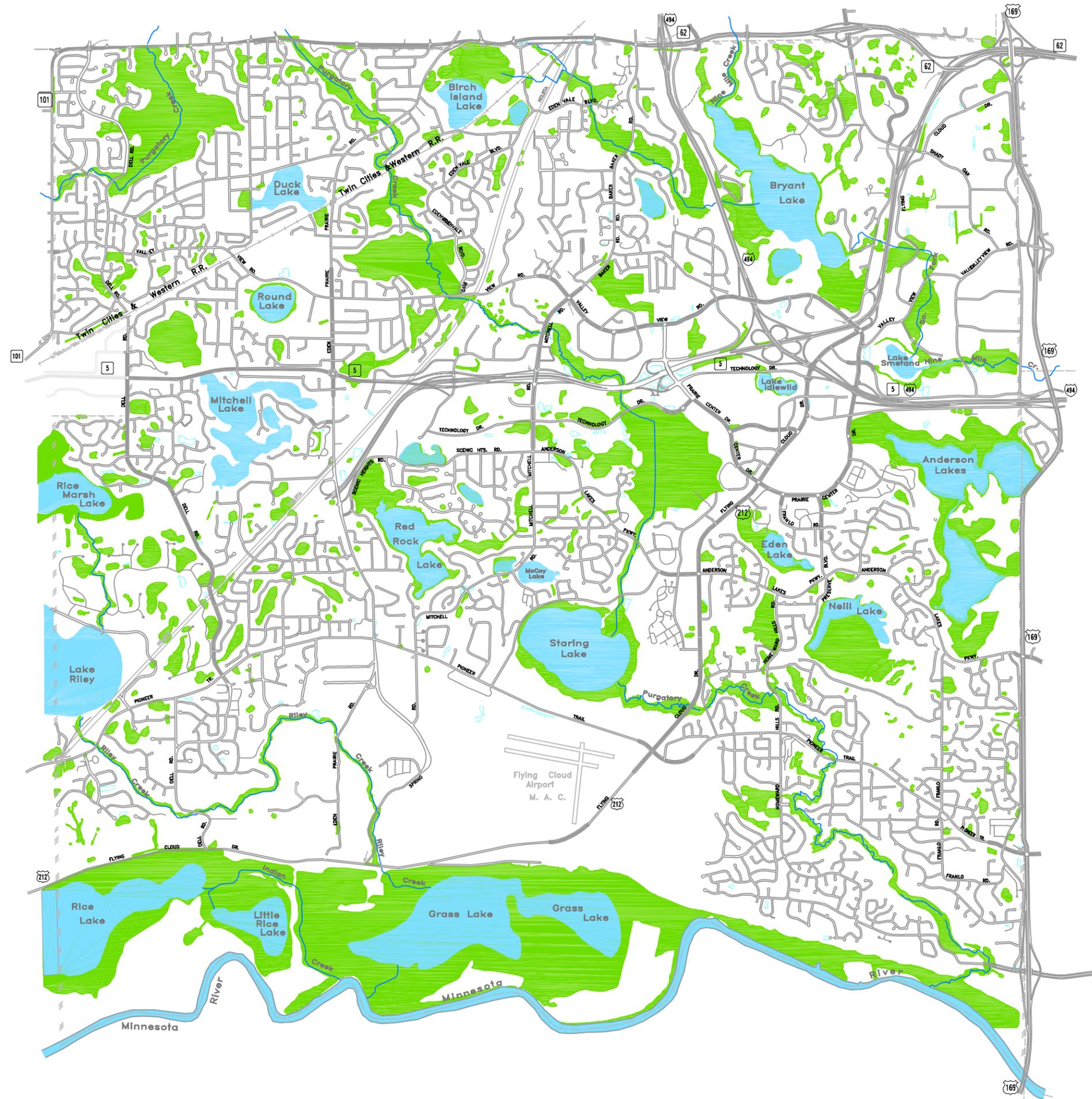
The Riley-Purgatory-Bluff Creek Watershed District and Nine Mile Creek Watershed District are currently completing a series of Use Attainability Analyses (UAAs) for each major lake system within the City. UAAs, which have been completed to date, include Round Lake, Lake Riley, Rice Marsh Lake and Birch Island Lake. Each of these UAAs will contain a series of recommendations for improvement of the water quality within the associated lake, stormwater ponding system and water resources within their subwatershed. Many of these recommendations will include items to be completed within the park system.

Wetlands

Wetlands were grouped according to the U.S. Fish and Wildlife's Circular 39 methodology. There are eight types found within the City of Eden Prairie. These include:

- Type 1 – seasonally flooded basin (meadow or forested)
- Type 2 – wet meadow
- Type 3 – shallow fresh marsh
- Type 4 – deep fresh marsh
- Type 5 – open water wetland
- Type 6 – shrub swamp
- Type 7 – forested swamp
- Type 8 – bog or cranberry bog

In general, wetlands with a single Type 2, 3 and 5 classification were more common than wetland with a single Type 1, 4, 6, 7 or 8 classification. Wetland complexes having more than two types amounted to about half the total acreage in the City. The majority of these complexes were along the Minnesota River, along major creeks or surrounding lakes. The total wetland and stormwater pond acreage was approximately 4,500 acres in 2000.



PARK AND OPEN SPACE SYSTEM PLAN

The City of
Eden Prairie

Figure 6.1

PROTECTED WATERS AND WETLANDS

- Lakes
- Wetlands
- Stormwater Ponds



LAST UPDATED JANUARY 10, 2003

**Table 6.1
Eden Prairie General Lake Information**

| Lake Name | Land Section R22-T116 | Water Body ID # | DNR Classification | Area Acres | Maximum Depth (feet) | Public Access | Game Fish | Motor Restrictions |
|----------------------|-----------------------|--------------------|--------------------|--------------------|----------------------|----------------------|--------------------------------------------------------------------|----------------------------------------------|
| Anderson Lakes | 13, 24 | 13-42-A 13-31-A | NE | 254 | 10.5 | No | Black bullhead, black crappie, green sunfish | No boats |
| Birch Island Lake | 4 | 04-13-B | RD | 44 | 21 | Canoe | Marginal sunfish | N/A |
| Bryant Lake | 2-11 | 02-23-A | RD | 161 | 45 | Ramp (Henn Parks) | Bluegill, crappie, perch, sunfish, northern pike | Sunday speed limit 15 mph (noon – 6:00 p.m.) |
| Duck Lake | 5 | 05-34-A | RD | 41 | 9 | Yes (carry on) | Sunfish, largemouth bass | No motors |
| Grass Lake | 33-34 | 33-11-A | NE | 320 | --- | No | N/A | N/A |
| Lake Eden | 23 | 23-21-B | N/A | 17 | --- | No | N/A | N/A |
| Lake Idlewild | 14 | 14-21-A | N/A | 15 | 9 | No | State rearing pond (occasional) | N/A |
| Lake Riley | 19-30 | 19-32-A | RD | 300 (124 in EP) | 50 | Ramp | Crappie, bluegill, bullhead, perch, northern pike, largemouth bass | 15 trailer parking limit |
| McCoy Lake | 21-22 | 21-14-B | RD | 10 | --- | No | N/A | N/A |
| Mitchell Lake | 17 | 17-22-A | NE | 112 | 19 | Ramp | Bluegill, crappie, bullhead, hybrid sunfish, largemouth bass | Maximum 10 hp motor |
| Neill Lake | 23-24 | 23-41-A | GD | 34 | 10 | No | N/A | Private access |
| Red Rock Lake | 16, 17, 21 | 16-33-A | RD | 91 | 17 | Ramp | Bluegill, bullhead, perch, largemouth bass, crappie, northern pike | Maximum 10 hp motor |
| Rice Lake | 31-32 | 31-11-A | NE | 231 | --- | No | N/A | N/A |
| Rice Marsh Lake | 18 | 18-32-B | NE | 41 | 6.6 average | No | Spawning | N/A |
| Round Lake | 8 | 08-31-A | NE | 33 | 37 | Ramp | Bluegill, sunfish, largemouth bass, crappie, hybrid musky | Electric motors only |
| Smetana Lake | 12-13 | 12-34-A | NE | 17 | 12 | Ramp | Northern pike, carp | Electric motors only |
| Staring Lake | 21-22 | 22-32-A | RD | 155 | 16 | DNR Ramp | Bluegill, bullhead, perch, northern pike, sunfish | N/A |
| TOTAL ACREAGE | | | | 1,893 | | | | |

NE – Natural Environment Water (7 lakes)

RD – Recreation Development Waters (8 lakes)

GD – General Development Waters (1 lake and Riley, Purgatory and Minnesota River basins)

Source: City of Eden Prairie Parks and Recreation Department, 2002

Reference Wetlands

Of the wetlands identified, 10 were rated exceptional. Eight of these exceptional wetlands were chosen as reference wetlands for the City. A reference wetland is a wetland of a single type judged to have the highest level of overall functional capacity within its wetland comparison domain, which in this case was defined as the City of Eden Prairie. These wetlands are to be used as a comparison tool to evaluate the diversity and integrity of wetland and stormwater ponds of similar type within the City.

Two of the reference wetlands identified were within or immediately adjacent to City parks. These wetlands are:

- Wetland 17-32-A – A small Type 7 wooded swamp on the southwest corner of Miller Park. Dominant vegetation includes American elm, black ash and a mix of sedges, water smartweed and wild mint.
- Wetland 17-34-C – A small Type 1 meadow along the south-central edge of Miller Park. The northern buffer area for this wetland extends into Miller Park. The majority of the wetland area is within right-of-way for the Minnesota Department of Transportation. Dominant vegetation includes lake sedge, giant goldenrod, sandbar willow, water smartweed, daisy fleabane, bulrush, and bottlebrush sedge. A small patch of purple loosestrife was identified within the wetland, which should be monitored.

The CWPMP recommends maintenance of a buffer area around the wetlands. The buffer should have a minimum width of 50 feet. Maintenance of the buffer should be low, allowing native vegetation to grow up within the buffer to act as a natural filter to clean stormwater runoff entering the wetland areas. This would also include use of non-phosphorus containing fertilizers and limiting use of other lawn chemicals from the immediate subwatershed of these wetlands.

A third reference wetland is within a 50-foot conservation easement area established by the Corps of Engineers that is monitored by the City, Corps and the Riley-Purgatory-Bluff Creek Watershed District. This includes:

- Wetland 19-12-A – A 12-acre Type 8 cranberry bog within the Bearpath development. Vegetation included sphagnum moss, cranberry, marsh fern, cottongrass, rose pogonia, sundew, white beak rush and cattail, among others. A small amount of purple loosestrife (approximately 2 percent of the wetland area) was identified.

None of the remaining reference wetlands are within conservation or scenic easement areas. The CWPMP recommends that the City work with the private landowners to discuss land care options, including placing the reference wetlands into a conservation easement, scenic easement or maintenance agreement for long-term monitoring by the City.

WATER RESOURCES PROTECTION AND PRESERVATION TOOLS

The City has developed a number of educational tools, as well as ordinances, aimed at protection and management of the City's water resources. These include:

- Active and ongoing educational program on water resources for all age groups. This includes facilities such as:
 - The Environmental Learning Center at the City's Water Treatment Plant
 - Staring Lake Outdoor Center.
- Annual Environmental Fair for the distribution of environmental educational information and topics, such as native plant landscaping, water conservation and wetlands protection.
- Annual monitoring of the City's reference wetlands, both for water chemistry (if water is available for testing) and vegetation changes. The City partners with the Eden Prairie School District, when possible, to complete the monitoring program.
- Standards for the protection of wetlands (City Code Section 11.51). This code established a series of criteria for protection of wetlands and their buffers, which are established during the development review process.
- Standards for establishment of Native Plant Landscape Areas (City Code Section 9.71). This would include the ability to establish native plant buffers for lakes, ponds and wetlands for the enhancement of the water quality entering these water resources.
- Standards for the sale and use of non-phosphorus fertilizer (City Code Sections 9.14 and 9.15).

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CHAPTER SUMMARY

Water resources are important elements within the City of Eden Prairie and the City's park system. The City places importance on the preservation and protection of these resources as they provide ecological, aesthetic and educational benefits to the City.

The City maintains an inventory of the City's water resources. In 2000, 495 wetlands, 17 lakes and 105 non-jurisdictional stormwater ponds were identified. The total wetland and stormwater pond acreage was approximately 4,500 acres in 2000.

Fifteen of the City's 17 lakes have City trail systems, parks and/or conservation areas adjacent to them for the enjoyment of these water resources by the community.

The Riley-Purgatory-Bluff Creek Watershed District and Nine Mile Creek Watershed District are currently completing a series of Use Attainability Analyses (UAAs) for each major lake system within the City. Each of these UAAs will contain a series of recommendations for improvement of the water quality within the associated lake, stormwater ponding system and water resources within their subwatershed. Many of these recommendations will include items to be completed within the park system.

Of the wetlands identified within the City, 10 were rated exceptional. Eight of these exceptional wetlands were chosen as reference wetlands for the City, three of which are located within or adjacent to City parks or conservation easements. These reference wetlands are to be used as a comparison tool to evaluate the diversity and integrity of wetland and stormwater ponds of similar type within the City.

The City has developed a number of educational tools as well as ordinances aimed at protection and management of the City's water resources. These include:

- Active and ongoing educational program on water resources for all age groups.
- Annual Environmental Fair
- Annual monitoring of the City's reference wetlands
- Standards for the protection of wetlands
- Standards for establishment of Native Plant Landscape Areas
- Standards for the sale and use of non-phosphorus fertilizer