

History of Minnehaha Creek Watershed

By Rich and Susan Cairn

Published by the Minnehaha Creek Watershed District 2003



1857 Dakota men above Minnehaha Falls.

Photographer: Benjamin Franklin Upton. Minnesota Historical Society.

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Aerial photo of Lake Nokomis



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AA.L4;40.3A.29Nokomis.tif)

1966 Flood Icebreaker



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1966FloodIcebreaker.tif)

INTRODUCTION

Change in the Watershed

On a few occasions during the Depression years [1930s], dad took his shotgun over to the cornfields on farms south [of the creek at] York Avenue and shot a pheasant for supper. Rabbits, squirrels, ducks and deer were also the meat for supper on rare occasion.

-Jane King Hallberg, in Minnehaha Creek: Living Waters

1925 Portland Ave. Bridge. Minnesota Historical Society



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1925_Portland_Bridge.jpg)

Journey back in time. Imagine you are a child on July 4 weekend 1937. It's sunny with a high of 83 degrees. Your family heads to an Auto Tourist Camp where you set up the tent in a stand of oaks. Then you run pall mell down hill to a stream. People fish. You hike through the woods upstream to Minnehaha Falls. That's right. Seventy years ago, the city turned to fields, woods and marshes just south of Minnehaha Creek. People camped at the Falls until 1955.

Auto camp at Minnehaha Falls



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1:1925_Auto_Camp.jpg)

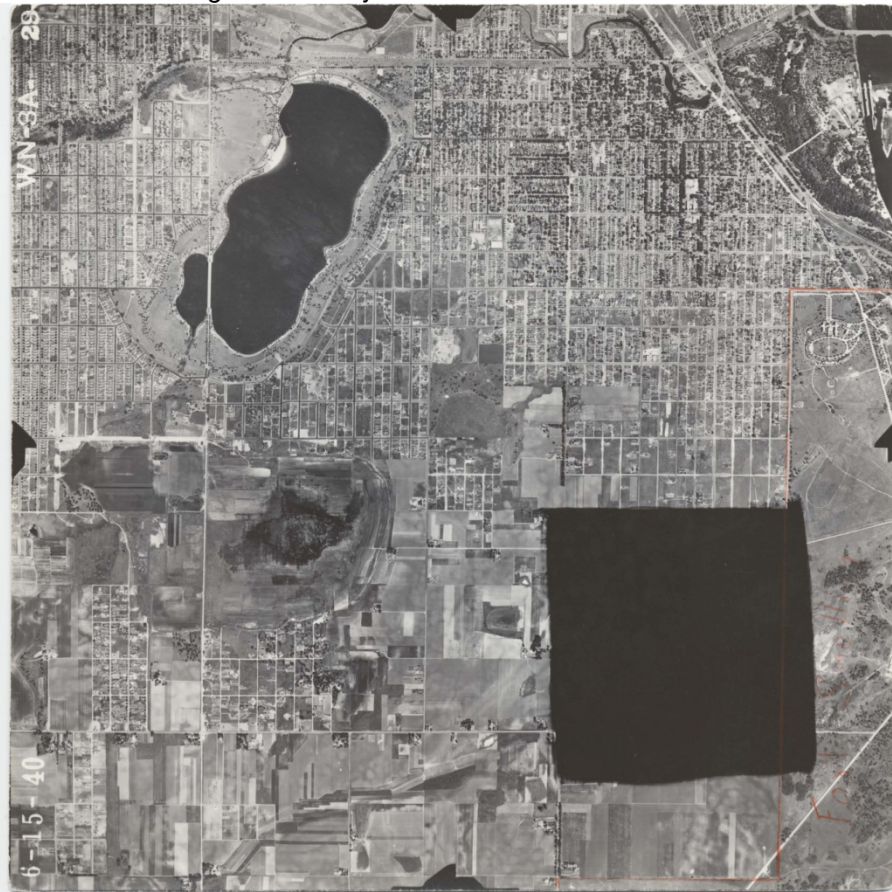
Things have changed. Today the Minnehaha Creek Watershed crosses a sprawling metropolis of rooftops, yards, streets, and parking lots. Even the lakes and streams themselves have undergone dramatic change.

An aerial photo of Mother Lake in 1937.



(Image can be found on MCWD Disk 3)

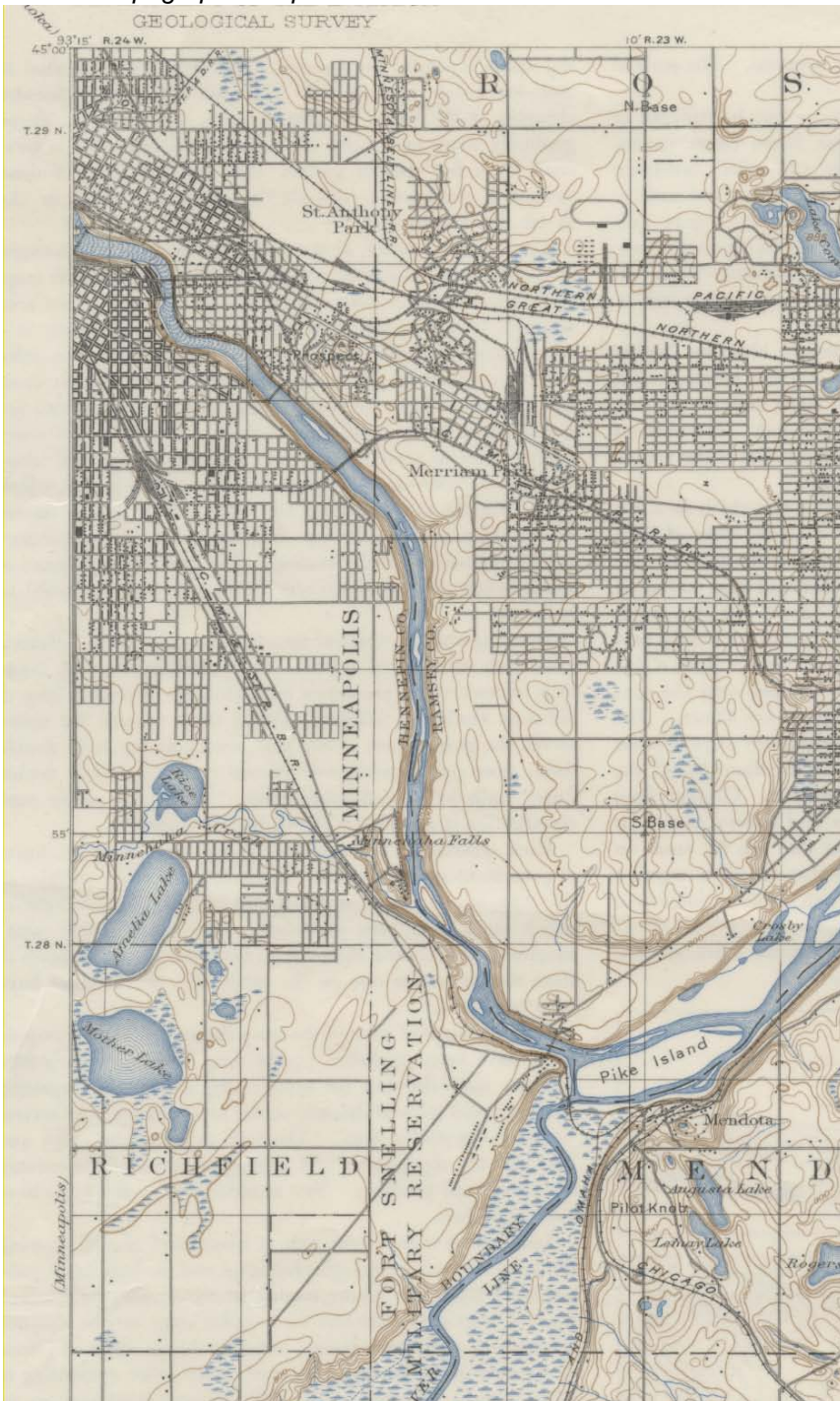
Mother Lake is larger than and just south of Lake Nokomis.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AA.L4;40.3A.29Nokomis.tif)

“Mother Lake” is the large depression in the ground crossed with farm fields. A road runs down its middle. (1940 also was the end of a long drought.) Earlier maps show that Mother Lake really was a large lake up until it was drained some time in early 1900, see the map below.

A USGS topographic map of the Mother Lake area.



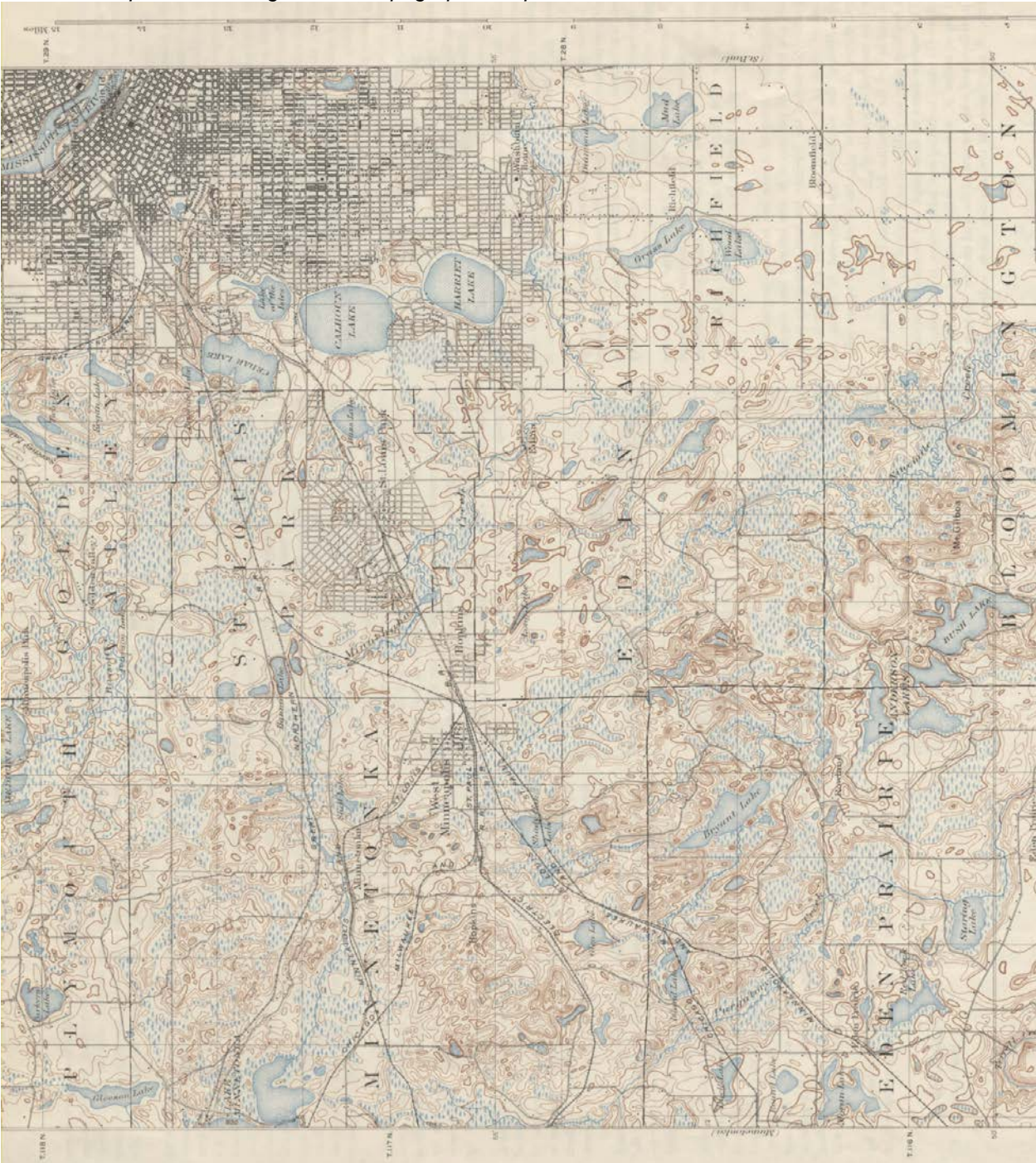
(Image can be found in MCWD History Illustrations “Overview & History” folder on Disk 1: AB.1896fallsUSGS.tif)

Mother Lake was restored somewhat when a new runway was added to the airport. Yet then State Highway 62 sliced through the lake in 1965. Without protection, our natural resources can disappear just that easily.

Notice Bass Lake and the line of wetlands running southwest toward Minnehaha Creek. These drained into Lake Calhoun to the Northeast. The Creek itself is also bounded by wetlands in this stretch. Below are aerial photos of the same area from 1940 and 1995. What details do the photos reveal?

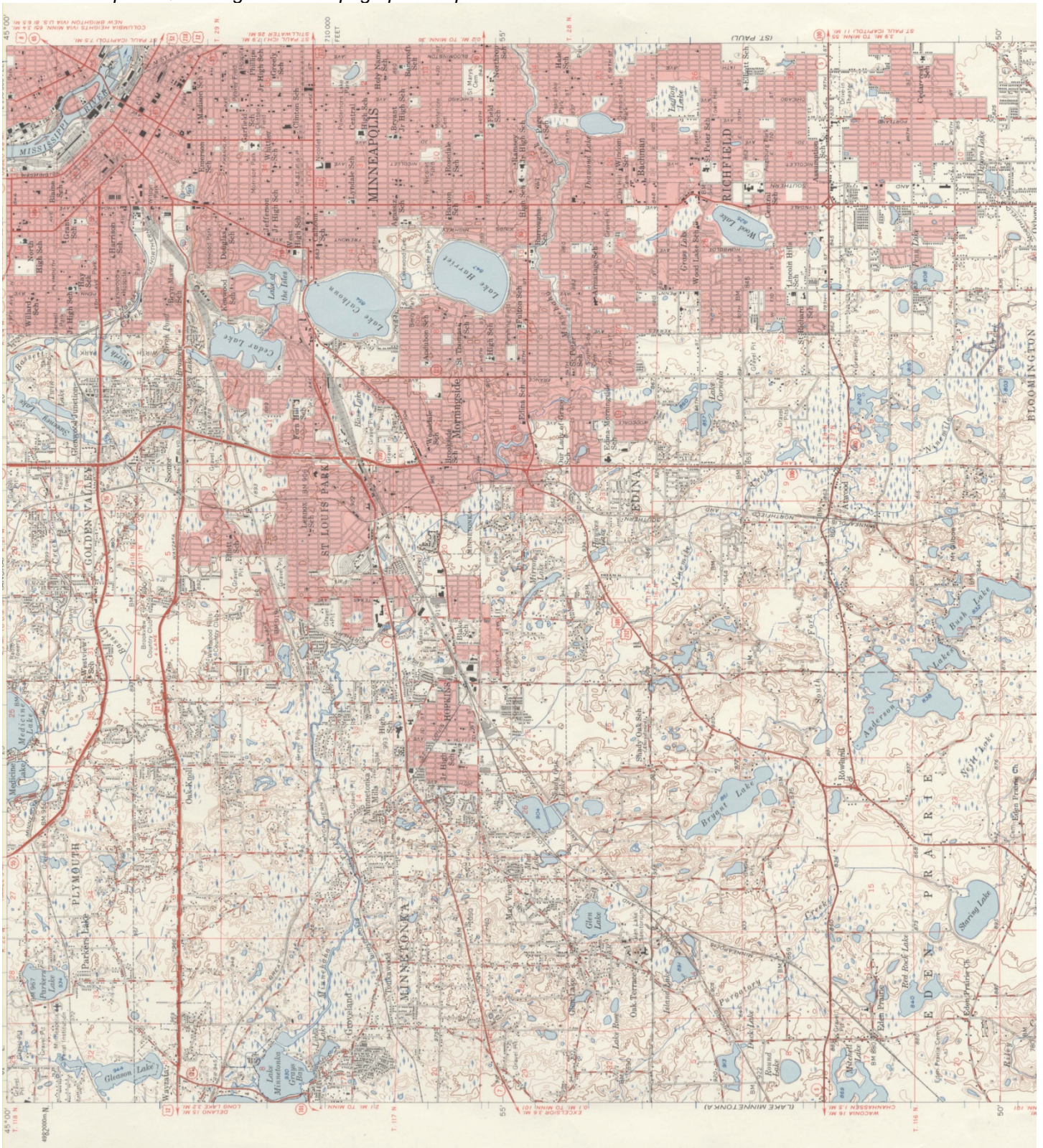
Compare the close-ups of the 1901 and 1954 Minneapolis Quadrangle USGS topographic maps below.

1901 Minneapolis Quadrangle USGS topographic map.



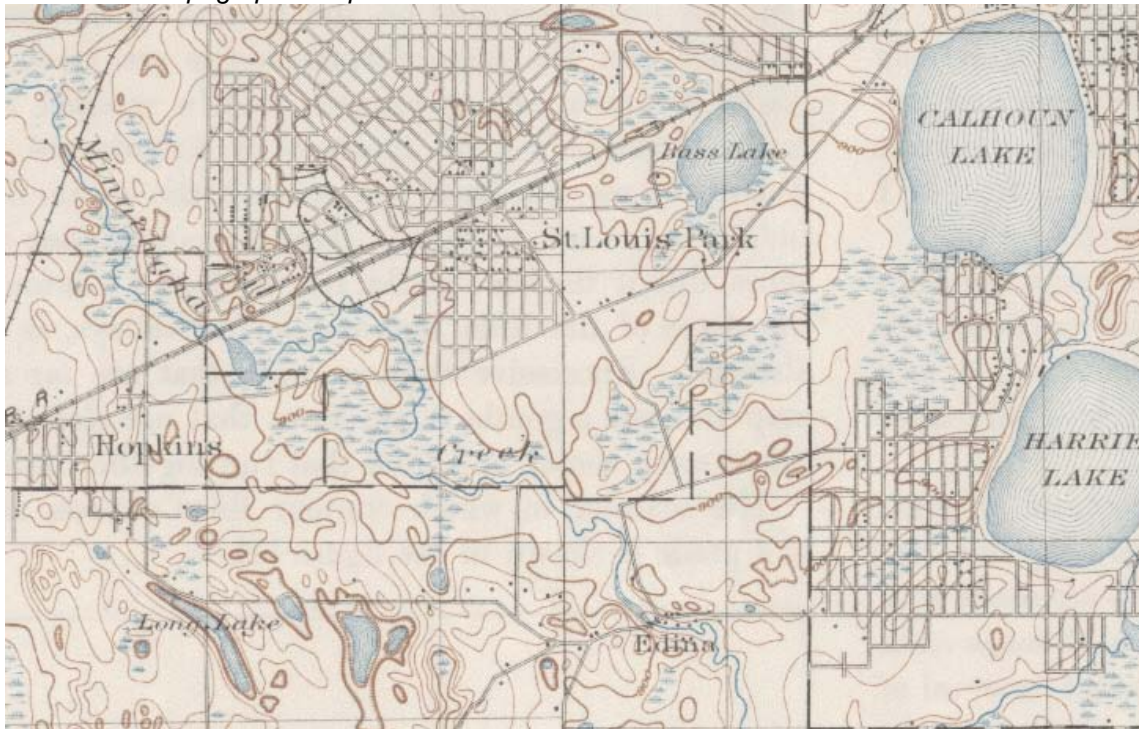
(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1954MinneapolisUSGS.tif)

1954 Minneapolis Quadrangle USGS topographic map.



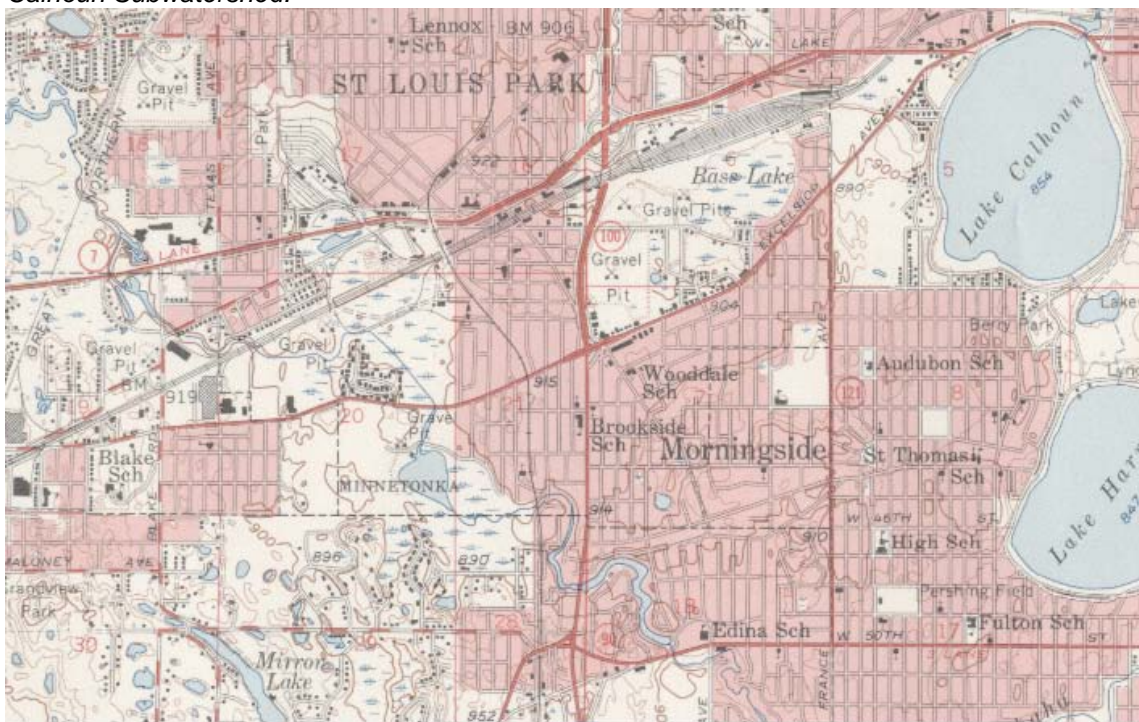
(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1954MinneapolisUSGS.tif)

1901 USGS Topographic Map of Southwest Lake Calhoun Subwatershed.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: L3;40.4A.76SWCalhoun.tif]

1954 USGS Topographic Map of Southwest Lake Calhoun Subwatershed. 1940 USGS Air Photo of Southwest Lake Calhoun Subwatershed.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: L3;95.S.LkCalhoun.jpg)

In 1999, this new pond, constructed by MCWD, the City of Minneapolis, and their partners, began to replace some functions of the wetlands that disappeared between 1901 and 1954. Today dirt and grit from the streets settle out into the pond, and cattails and other plants absorb nutrients before the water flows into Lake Calhoun. Compare the Southwest Lake Calhoun Wetland Ponds Projects in the maps below.

What is this new approach to the watershed all about?

1995 USGS Air Photo of Southwest Lake Calhoun Subwatershed.

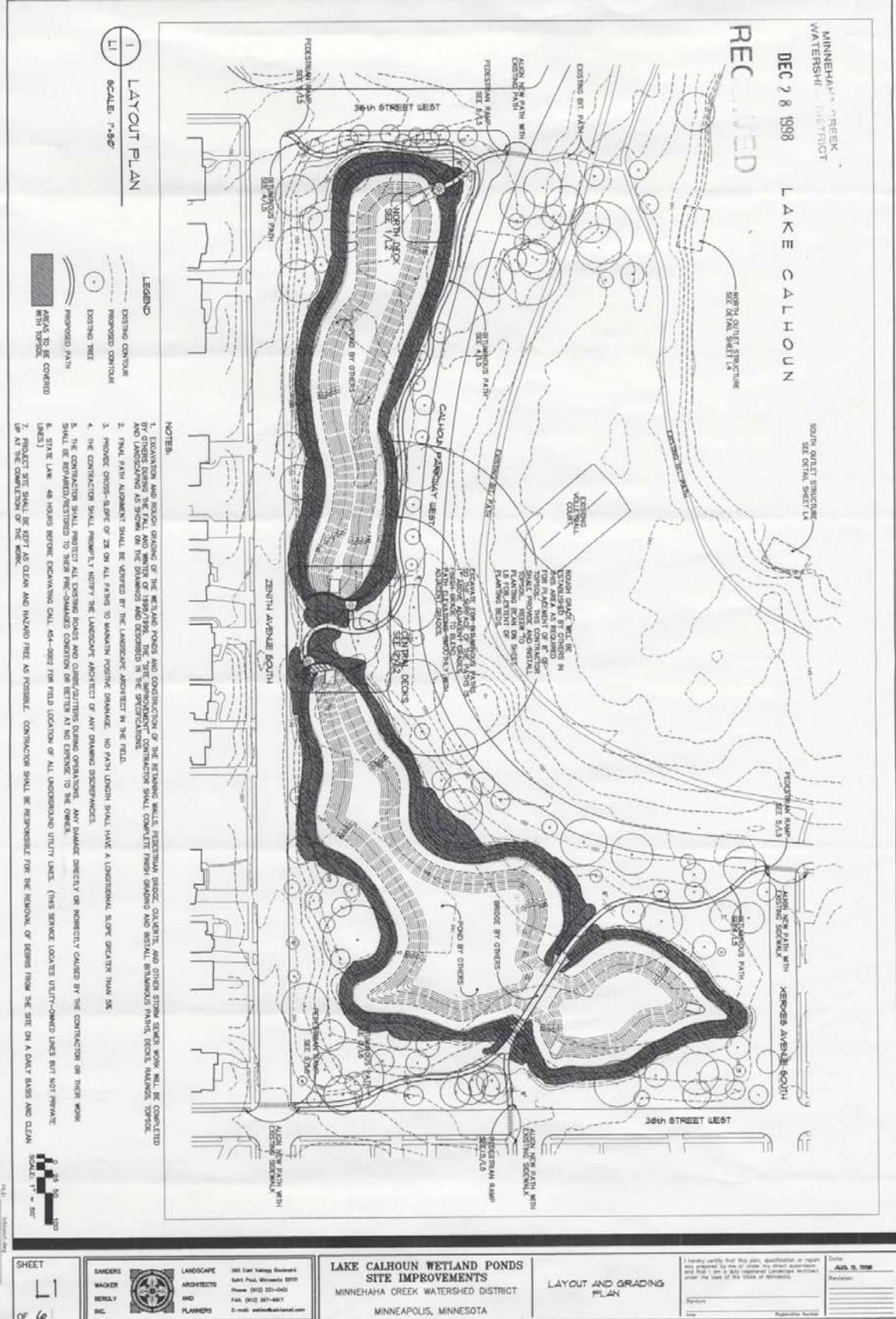


(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1)

2000 Southwest Lake Calhoun Wetland Ponds Project



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AH.2000CalhounPonds.tif)



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1998.CalhounPondPlan.jpg)

Protecting the Watershed

Flooding in Minneapolis in 1966 spurred Hennepin County to petition the Minnesota Water Resources Board to create a new watershed district.

See the following Historical Articles from MCWD Disk 1.

- [1966.1MCWDSought\(Tribune\).pdf](#)
- [1966.2Peril\(Tribune\).pdf](#)
- [1966.3AngryGroup\(Tribune\).pdf](#)

The Minnehaha Creek Watershed District came to be March 9, 1967.

News photos show an armored car attempting to break ice behind the Humboldt Ave. bridge. See the meeting in which residents demanded action.

1966 Minneapolis Tribune. Earl Seubert, Photographer. Minnesota Historical Society



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1966FloodSandbag.tif)

Armored care attempts to break ice behind Humboldt Ave. bridge.



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1966FloodIcebreaker.tif)

Residents demand action at meeting.



(Image can be found in MCWD History Illustrations “Historic Photos” folder on Disk 1: 1966FloodMeeting.tif)

In addition to preventing floods, the Watershed District protects the quality of lakes, streams, and wetlands. Today state law prohibits what happened to Mother Lake. Watershed districts enforce these and other regulations.

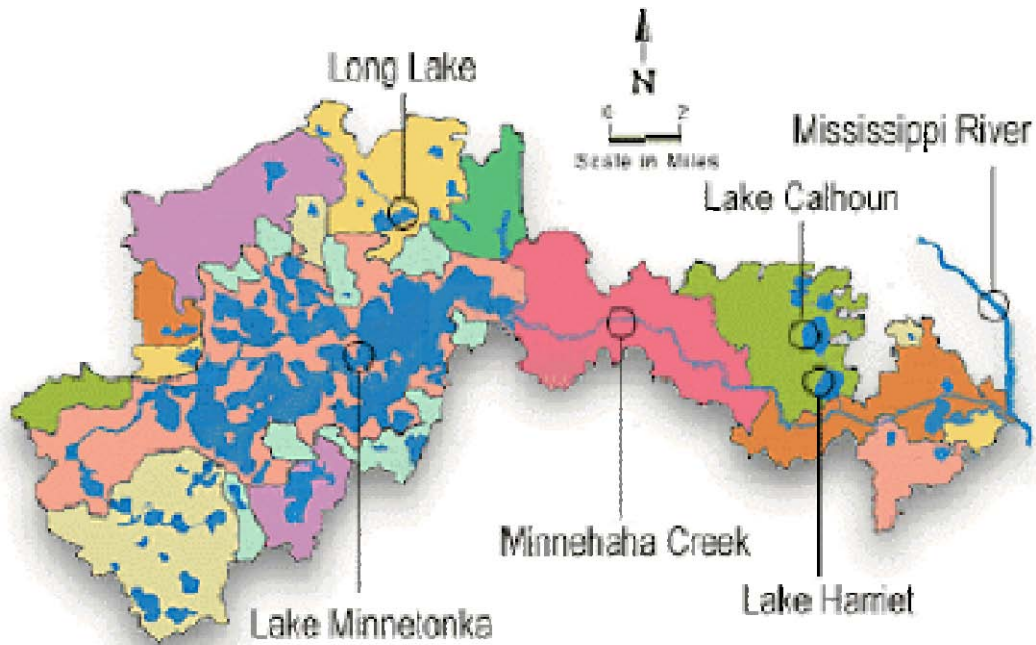
What Is a Watershed?

A watershed is the entire basin from which rain and snow melt drain to a lake, stream, or wetland. The Minnehaha Creek Watershed includes 181 square miles and 40 lakes, including Minnetonka at 22.6 square miles. The watershed includes parts of 27 cities and three townships. 300,000 people live in the watershed.

(See the following image found in MCWD History Illustrations “Overview & History” folder on Disk 1: AJ.SubwatershedMap.tif)

What Causes Floods?

Floods are only partly natural. Paving land and eliminating wetlands sends rainwater over the land more quickly and in greater volume. By contrast, most rainfall on natural wetlands, forests, and prairies infiltrates into the ground or evaporates into the air. Compare the hydrographs of rain events from before and after urban development. [AK.PollutionPipe.pdf Figure 2]. Look also at how much sinks into the ground or evaporates on developed vs. undeveloped land. [AK.PollutionPipe.pdf Figure 3] See photos and articles on floods on MCWD Disk 1. See also the MCWD HHPL Study map on the next page showing how much of the land in an example watershed is now “impermeable” pavement or buildings.

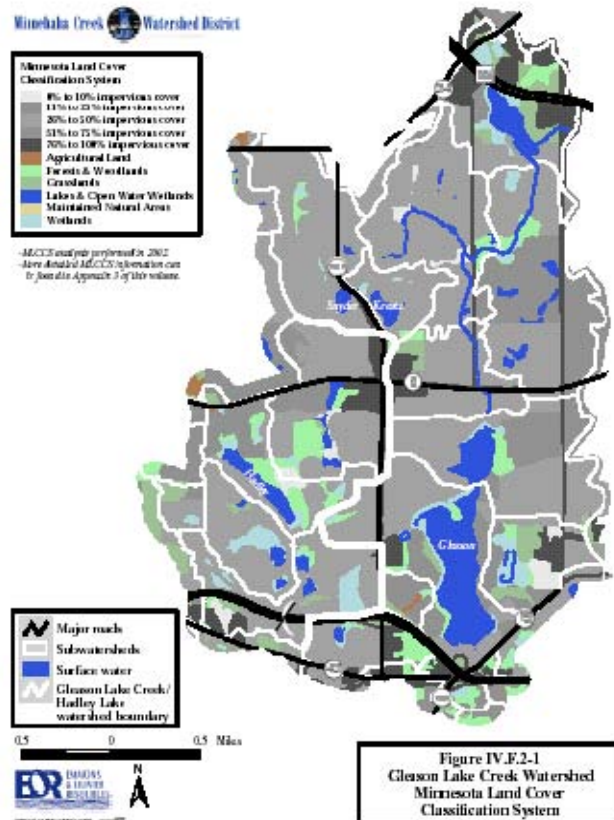


What Is a Watershed District?

In 1955, the Minnesota Legislature authorized the creation of local government units called watershed districts. Their purpose is to help manage the land and waterways so as to reduce flooding and to protect the quality of lakes, streams, and wetlands. (See the enabling legislation on the Web site of the Minnesota Board of Water & Soil Resources www.bwsr.state.mn.us.)

Why Is Runoff Important?

Rain, snow melt, or water from human sources (such as lawn sprinklers). As it flows across the land, runoff carries some of whatever is on the ground: leaves, trash, fertilizer, motor oil, salt.... When it empties down a storm drain, all that material goes with it. Managing runoff is key to managing water quality in water bodies.



The Work of the Minnehaha Creek Watershed District

Gray's Bay Dam helps minimize flooding downstream.



Actions of the Minnehaha Creek Watershed District have included: (See www.minnehahacreek.org .)

Research needs and plan long-term solutions. MCWD implemented a series of improvement plans over the decades. Most recently, MCWD created a complex Hydrologic, Hydraulic, and Pollutant Loading Study to inform and focus planning.

Monitor water for pollutants and for indicators of quality including nutrient levels and clarity.

Developers must apply for permits for storm water management plans, flood plain and wetland alternation projects, dredging, stream and lake crossings, and shoreline improvement projects. In 1974, the Watershed District adopted rules, based on state law, to protect lakes, streams and wetlands. (See regulations and a list of current permit applications on the district web site.)

Build structures (often in partnership with local governments) to allow better management of water resources.

- Dams regularize water levels in water bodies and retain waters: Gray's Bay(1979-1980, 1997), Gleason Lake (1993-1995).
- Retention ponds and wetlands filter and settle pollutants from runoff and reduce flooding: Deerhill Pond, County Road Six Pond, Painter Creek (1984-1985, 1996-1997), Long Lake (1995-1996, 1998), Twin Lakes (1995-1996), Southwest Lake Calhoun (1998-1999), Pamela Park (2000-2001), Lake Nokomis (2001-2002).
- Alum treatments to capture and settle out phosphorus: Langdon Lake, Excelsior Ponds, Long Lake (1996).
- Stabilizing stream banks and repairing culverts and other structures prevents erosion and increases stream flow capacity: Minnetonka (1979-1980) and Edina (1981, 1984).
- Wetland project demonstrates what is required to restore native aquatic habitat: Minnesota Landscape Arboretum (1996-1997).
- Canoe landings, portages and other recreational facilities increase use and appreciation for the creek.

Educate and mobilize the public—especially landowners—to protect water quality. Includes training in best management practices, work with schools and other educational groups, and Cynthia Krieg Fund small project grants to local groups. (See the MCWD website for a current list of [grant projects](#).)

Successes

Proving that Wetlands Improve Runoff

In 1975, the Watershed District pioneered a federally funded study on how well wetlands treat urban storm water runoff. A seven-acre wetland in Wayzata with a 70-acre drainage area retained 77 percent of all phosphorus and 94 percent of the total suspended solids entering the site. The results support restoration and protection of wetlands nationwide.

- In 1971, eight sewage treatment plants daily emptied three million gallons of treated wastewater into Lake Minnetonka and its tributaries. (Even after treatment, wastewater still contains high levels of phosphorus.) By 1986 all eight plants had closed, replaced by the Blue Lake Treatment Plant in Shakopee. Thus ended the last "point source" of pollution in the watershed. These actions reduced the phosphorus flowing into Lake Minnetonka each year by 33,000 lbs. (Because the lake retains 90% of the phosphorus it receives, recovery takes many years.)
- A new dam at Gray's Bay in 1979 and other structures have increased flood control capacity.
- Within a year of the creation of the Southwest Lake Calhoun Settlement Pond, there was significantly less phosphorus flowing into the lake. Though the project plan predicted that the pond would remove 46% of phosphorus, monitoring showed that the pond removed 66% or more of the phosphorus.
- MCWD projects such as the Chain of Lakes partnership with the City of Minneapolis, City of St. Louis Park, and Minneapolis Park and Recreation Board resulted in significantly improved water quality as a result of the applied best management practices.

Ongoing Concerns

The most important pollutant in the watershed is phosphorus from erosion (including from construction sites), animal waste (from horses, house pets, and overabundant geese), grass clippings and leaves, and fertilizers. Excess phosphorus in lakes triggers summer algae blooms. When masses of algae die, their decay uses up the available oxygen. Lack of oxygen kills fish and other aquatic life.

More people, more roads, more houses.... As the western end of the watershed continues to develop, more impermeable surfaces will mean more roof and street runoff, and more of the pollutants it carries. The Twin Cities' ever growing population demands ever more from our waterways. It is more important than ever that we each do our part.

13 Things Anyone Can Do To Protect Water Quality in the Minnehaha Watershed

1. Mow often, letting grass clippings stay on the lawn as a natural fertilizer. Use clippings as mulch. Or compost clippings and leaves that might otherwise "fertilize" local waters.
2. Keep fallen leaves out of street side gutters or ditches. Use leaves around the yard as mulch or compost.
3. Plant an extra tree for multiple environmental benefits. Plant wild flowers and grasses, thickets, or other natural landscape. These landscapes catch rain and snowmelt and let leaves, twigs, and other yard "wastes" decay on the ground as in the forest or prairie.
4. Dig up no more ground than necessary for any project. Seed bare soil and cover it with mulch as soon as possible to reduce erosion. Preserve existing vegetation.
5. Point roof downspouts away from foundations and driveways to flower beds or lawns where water can safely soak into the ground. Consider using a rain barrel.
6. Use lawn and garden chemicals carefully and sparingly. Follow label directions. Reduce use of pesticides and weed killers by mulching, hand weeding and other methods.
7. In general, reduce the use of toxic or hazardous products to those you can't do without. Keep them away from storm sewers, lakes and streams. Call county waste management officers to find out how to dispose of unwanted hazardous products.
8. Collect motor oil and engine coolant for recycling. Seal well and take to gas stations.

9. Keep cars tuned and in good operating condition. Check for drips to keep oil and fluids off pavement. Walk, bike, or take the bus when possible.
10. Store fuels and other chemicals carefully. Check regularly for leaks. Clean up spills immediately.
11. Use car wash facilities because their wastewater goes into the sanitary sewer for treatment. Keep your car off the grass to avoid compacting soils.
12. Clean up pet wastes immediately to keep nutrients and bacteria out of lakes and streams.
13. Use salt sparingly in winter. When possible, chip ice off pavement, or use sand.

NATURAL HISTORY OF THE WATERSHED

Let's explore the watershed and see how humans have affected it. First we'll examine its natural context. (For additional details, see the MCWD Hydrologic, Hydraulic, and Pollutant Loading Study [HHPLS] and the MCWD Management Plan on MCWD Disk 1. Also see www.minnehahacreek.org)

Geological History

Over millions of years, volcanoes, oceans, and movement of the earth's crust lay down and shaped the rocks that today underlie the Minnehaha Creek Watershed.

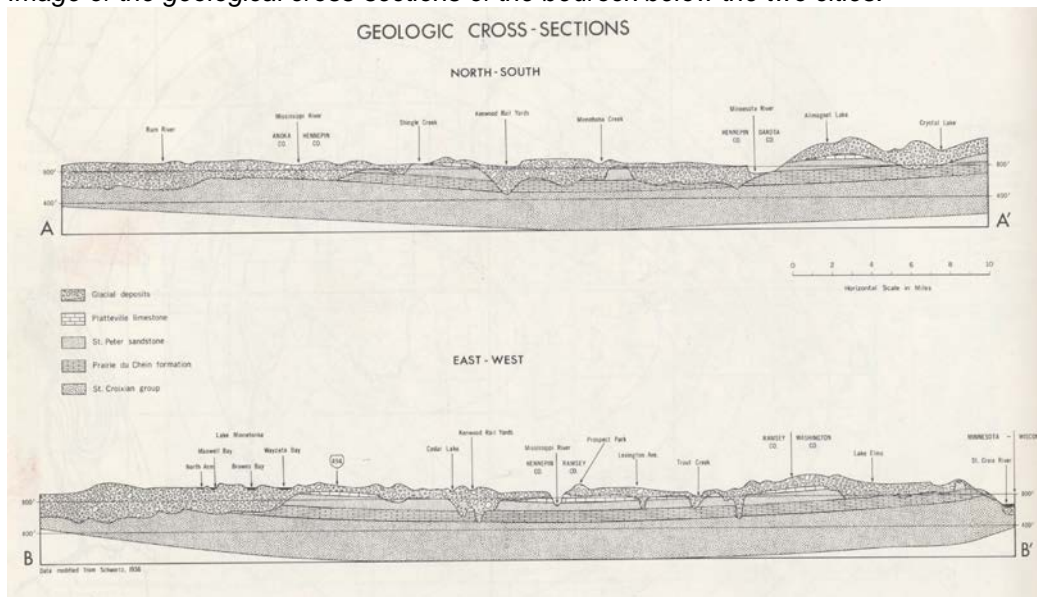
Glaciers sculpted the surface of the watershed as huge ice sheets advanced and retreated in the last million years. The Wisconsin Glaciation period occurred from 75,000 years ago to 13,000 years ago. The large St. Croix Moraine formed where the end of a great glacier sat over the present day Twin Cities for many years. The continual movement of ice gouged up gravel, clay, and sand from the bedrock and carried it along, finally dumping it in layers (called "drift") at this end point. Where the drift was thick, hills and ridges formed. Where huge ice boulders displaced the drift, holes formed. Many of these holes eventually became lakes.

In most of the watershed, drift covers the underlying bedrock to a depth of 50-100 feet, though bedrock plunges to a depth of 300 feet in a buried bedrock valley under Lakes Calhoun and Harriet.

Underneath the layer of drift, a bowl of bedrock centered under the Minneapolis-St. Paul border cradles the two cities. These rock layers hold a rich set of underground water sources used for drinking water by most Minnehaha Watershed municipalities. (Minneapolis and Golden Valley get their water from the Mississippi River. Central water supplies reached the area of Minneapolis near the Creek in 1922.) Lake Minnetonka is a major recharge source of water for these aquifers.

On the watershed's eastern end, a thin layer of hard Platteville Limestone (30-50 feet thick) caps a softer, easily eroded layer of St. Peter Sandstone. Minnehaha Falls tumbles over this limestone cap into a steep-walled glen—the only place in the watershed where bedrock is exposed.

Image of the geological cross-sections of the bedrock below the two cities.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AL.GeologicSectionBorchert.tif)

Glacial Drift

Landforms:

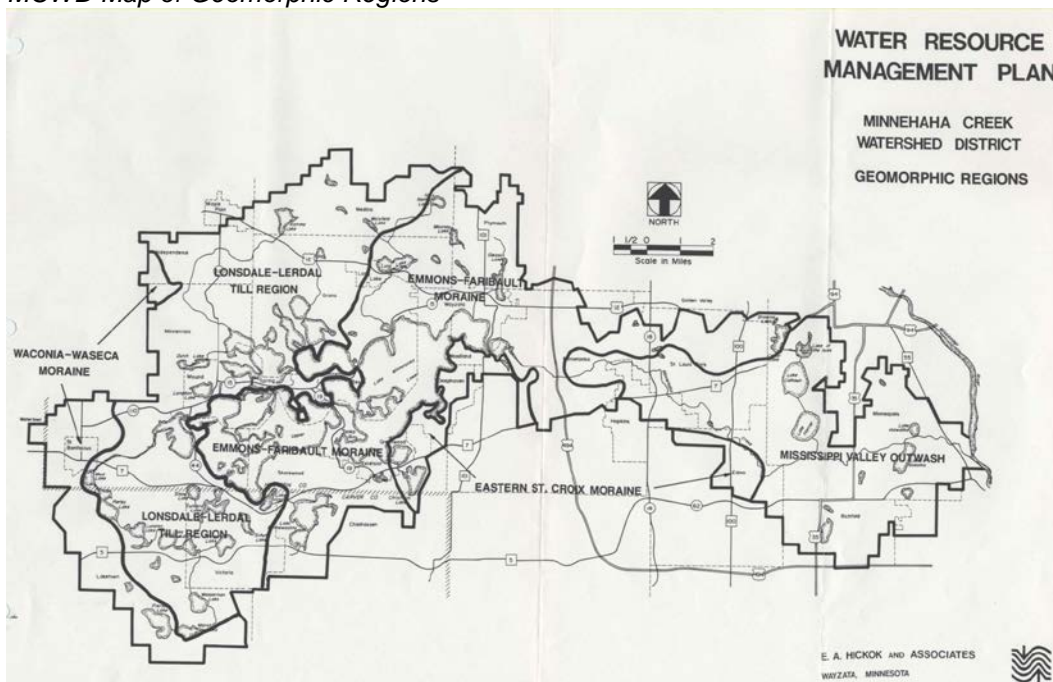
1. Piles of drift ended up shaped into five distinct landform patterns across the watershed. (Moraines are the end point of a glacier.) (See MCWD Map of Geomorphic Regions below.)
Waconia-Waseca Moraine - circular level-topped hills with smooth side slopes from 4-35%, averaging 8-14%. Numerous lakes and wetlands.
2. Lonsdale-Lerdal Till Region - circular level-topped hills with smooth side slopes averaging 2-3%. Many small streams end in lakes or depressions. Closed basins contain lakes or peat bogs.
3. Emmons-Faribault Moraine - gently rolling to steep hilly landscapes with abundant lakes. Maximum surface relief of 150 feet.
4. Eastern St. Croix Moraine - steep rugged hills dotted with deep basins. Surface relief varies from 50-200 feet from hill base to hill top. Numerous wetlands and small lakes. (Settlers called this area the "hardscrabble hills.")
5. Mississippi Valley Outwash Plain (Fluvial) - gently rolling terraces and bottomlands. Many dry hollows and steeper sided basins. Surface relief typically varies less than 30 feet.

Composition:

A layer of glacial drift lies on top of the bedrock throughout most of the watershed. The drift in the Minnehaha Watershed came from two main sources. (See CURA Geomorphology Map below. Also Fig V.B8 Surficial Geology.pdf in the HHPLS folder on MCWD Disk 1.)

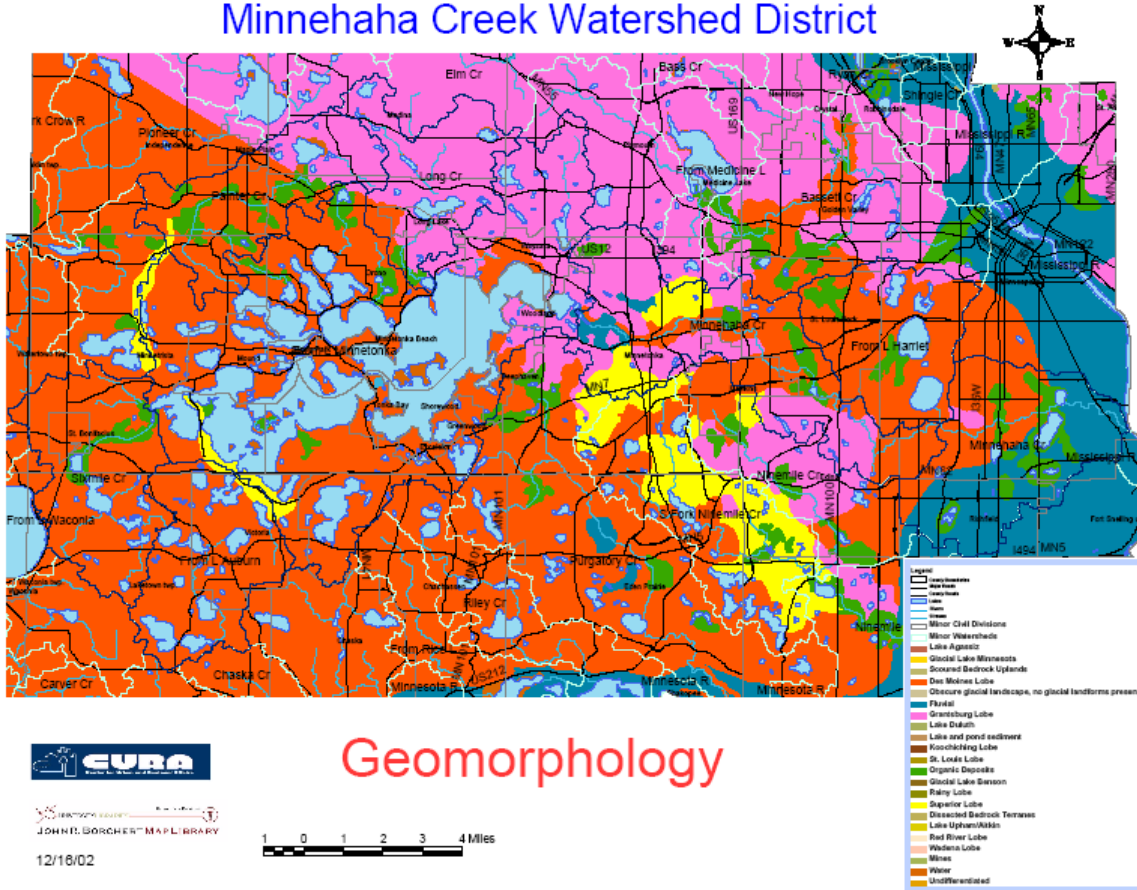
1. The Superior glacial lobe from the northeast dumped sandy glacial drift across the entire watershed. Composition: crystalline igneous and metamorphic rocks.
2. In the western watershed, the Grantsburg sub-lobe of the Des Moines glacial lobe deposited a thin top layer of gray, clay-like drift from the Keewatin District west of Hudson Bay. Composition: calcareous limestone and shale fragments typical of northwest Minnesota and Manitoba.

MCWD Map of Geomorphic Regions



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AM.GeomorphicFormMCWD.tif)

Minnehaha Creek Watershed District



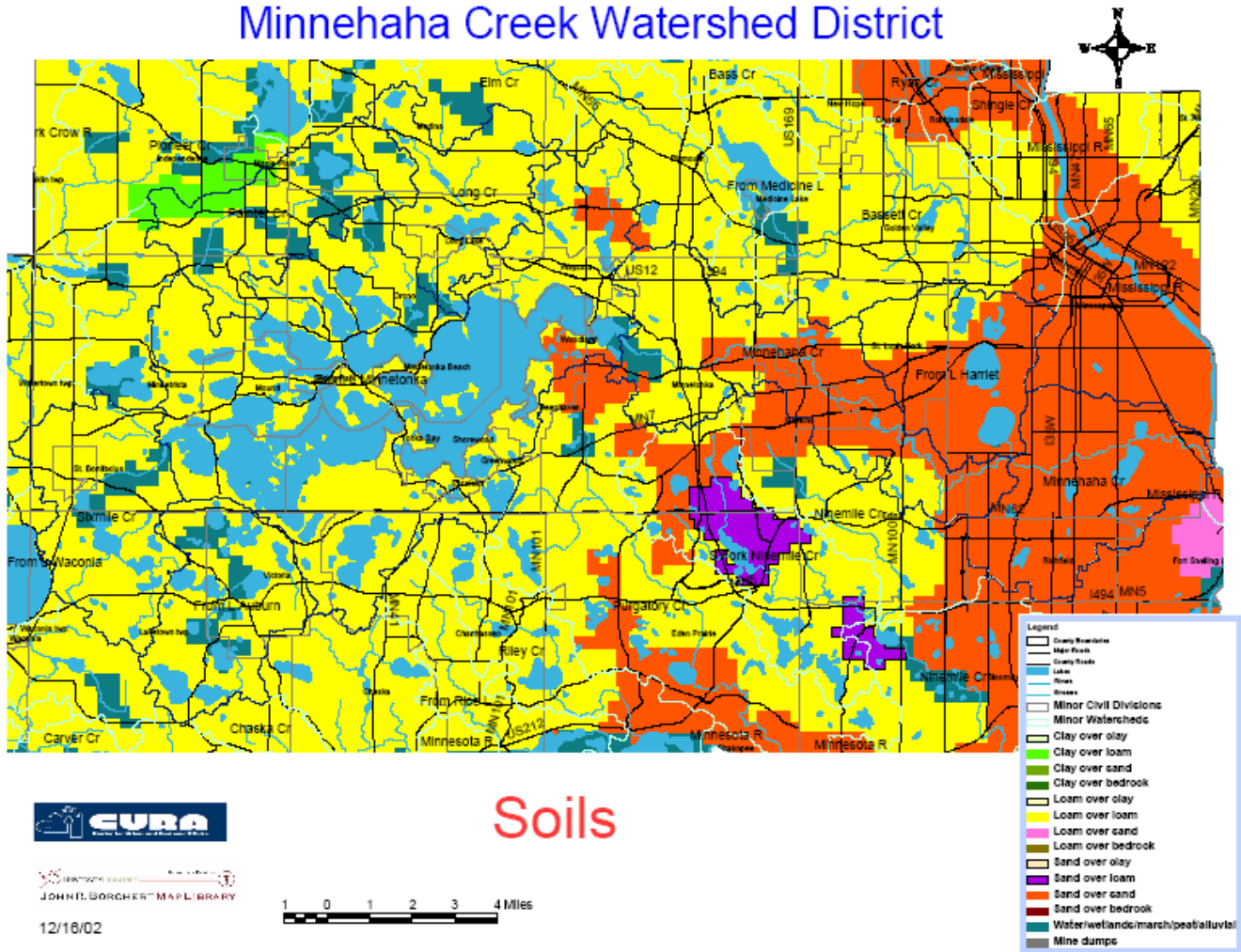
(Image can be found in MCWD History Illustrations “Overview & History” folder on Disk 1: AL.GeomorphologyCURA.pdf)

Soils

Over the millennia, the interaction of water and organisms with the various types of glacial drift created a varying layer of soil two to four feet thick. The traits of this soil and its slope largely determine the potential uses of the land as well as influencing rates of infiltration of runoff and transmission of groundwater through the earth.

Generally, the easternmost quarter of the watershed (from Hopkins to the Mississippi) consists of sandy soils over sandy sub-soils. These are dark-colored and well drained. (Water readily percolates through it.) The western watershed (from Brownie Lake past Lake Minnetonka) consists of loamy soils over loamy sub-soils. These are light-colored and well drained. There are extensive wetlands and peat bogs throughout the western watershed. There are also patches of other soil types throughout the western watershed, including a few with poorly drained soils. (For greater detail, see the “Soils” section of the HHPLS report for your subwatershed.)

Minnehaha Creek Watershed District



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AN.SoilsCURA.pdf)

Plants and Animals in the Watershed

Sucker and Redhorse each spring swam from Lake Harriet through the outlet into Minnehaha... Settlers, even from Eden Prairie and miles to the west, brought their spears to harvest bushels of these fish to eat and to feed pigs... Farmers... could, and did, go down with pitch forks and pitch the fish out onto the banks for their fish fry.

-Coates P. Bull, writing about the early 1900s

I live in a little log house, with four windows in it, two bedrooms on the west end, and parlor, sitting room, kitchen and pantry all in one. At the east window have a beautiful view of the lake. Trees in abundance and grapevines all around the house; and flowers of every hue, some of them splendid, cover the ground for miles and miles...

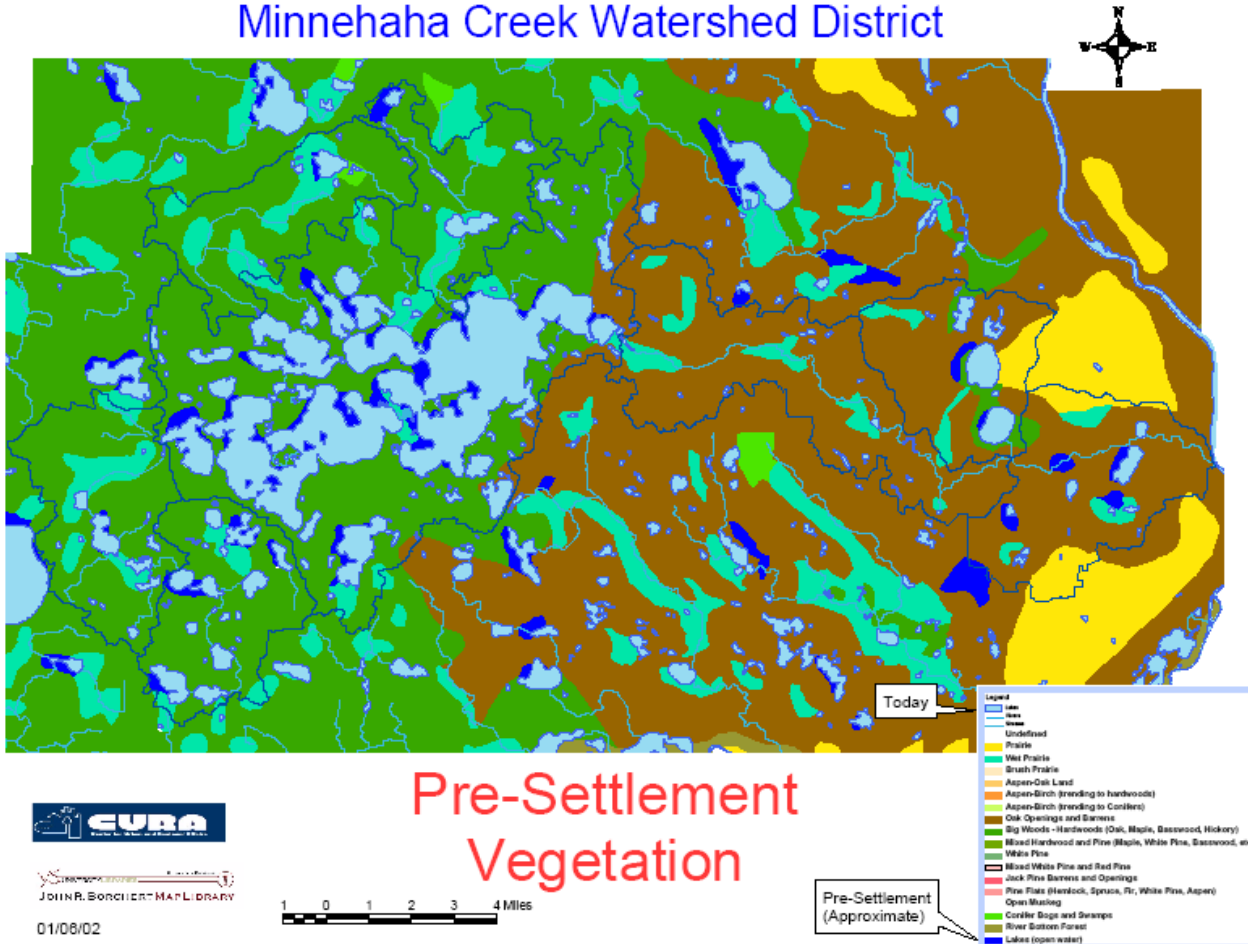
There is any quantity of spikenard, bloodroot, sassaparilla, cranesbill, prickly-ash, and slippery elm, all about here, and then we have strawberries, gooseberries, blackberries, black-currants, and high cranberries.

-Clarissa Cleveland, in a letter from Lake Minnetonka, 1853

In the ten millennia following the final retreat of the glaciers, periods of warmer and cooler, wetter and drier weather caused forests and prairies to advance and retreat across the land. In the 1800s, mix of oak savanna covered the flatter, well-drained eastern half of the watershed. In the hilly, rocky west, lakes and wetlands generously sprinkled maple-basswood forest.

Map of pre-European settlement vegetation

Minnehaha Creek Watershed District



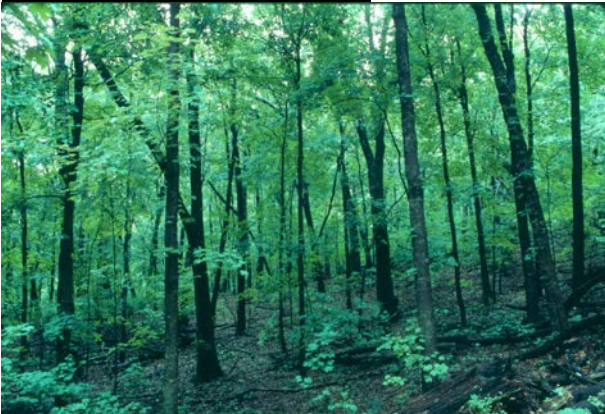
(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AO.PresettlementHabitatCURA.pdf)

Photo examples of each habitat type below

Algae Bloom



Maple-Basswood Forest



Oak Forest



Oak Savannah



Prairie



Wet Meadow



Maple-basswood Forest (The Big Woods)

This was the area's dominant ecological community. Elm, basswood, sugar maple, red oak, and white oak.

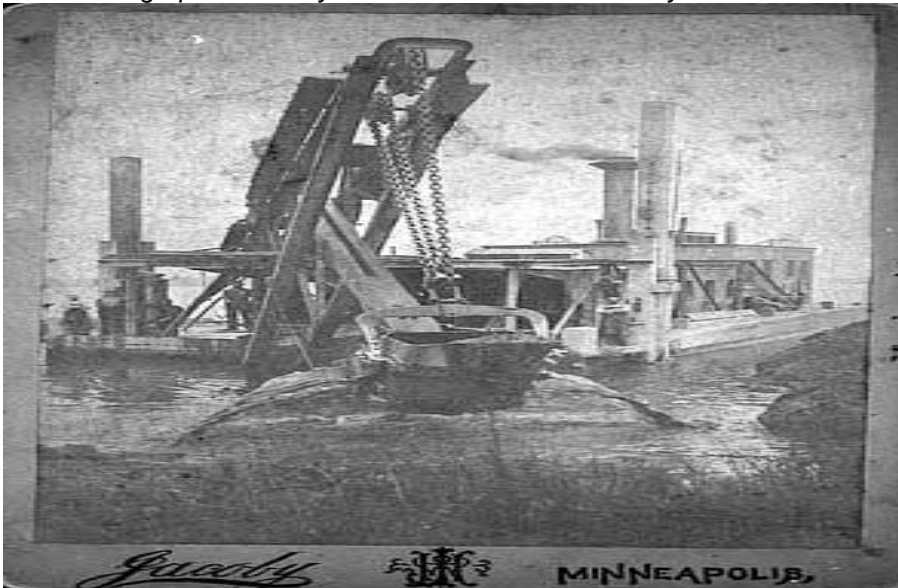
Col. Owens described Lake Minnetonka area in 1852:

They went ashore and walked through pea vine, nettles and ginseng. There they saw a sugar maple tree which was three feet in diameter—also, there were white oak, white hickory, white ash and basswood trees....

The belt of timber is at least two miles wide all around the lake, having for its outer margin a heavy growth of very large white oak, sugar maple being secondary growth...We have taken the entire circuit of the lake [and found] as fine a timber land as the Great West affords, 100 miles in extent and 2 miles in width, with navigable lake in its center, and the best prairie from its outer boundary. What an enviable home for the thrifty and affluent agriculturists!

(Quoted in Living Waters)

1891 Photographer: Jacoby. Minnesota Historical Society



Water: Streams, Lakes, Bogs, and Marshes

The Minnehaha Creek Watershed contains dozens of lakes and thousands of wetlands. In addition to lowland marshes and bogs, these include upland prairie wetlands. A band of Dakota harvested wild rice from Lake Minnetonka until the 1862 Dakota Uprising.

C. P. Bull reported osprey, mink, otters, and muskrats along the creek in Edina as late as the 1890s. He also reported pickerel, bass, sunfish, suckers, and red horse.

More than 20 species of fish live in the lakes. A 1949 population survey found 100 pounds per acre of fish in Lake Minnetonka (1.2 million pounds total).

Urbanization has heavily impacted the watershed. The Minnehaha Creek Watershed's eastern third accounts for a significant part of the estimated 40-50% loss of wetlands in the Twin Cities metropolitan region.

Prairie Mixed with Oak Woodland and Brushland

Bur oak and pin oak, aspen and hazel thickets, and prairie openings.

Prairies covered most of the watershed's eastern half- except next to streams and lakes. Permeable sub-soils could not retain the moisture needed to support trees during drought periods. Burning by Native Americans also likely favored the prairie.

Journalist Colonel John P. Owens described the area west of Lake Calhoun prior to white settlement in 1852:

There was good soil, with hazel and wild cherry bushes, but very little timber—also plenty of water for stock, hay meadows and, far to the right (north), tamarack groves and other timber... We came for the first time to Little Falls creek (Minnehaha), which we crossed. The land along this creek is good, and mill privileges plenty. The growth of weeds, grass and hazel is as high as a man's shoulders. The surface, however, is too much broken to invite settlement.... Crossing one of the high peaks hereabout, while the team was making the circuit of a wet meadow, we found a bunch of the wild sage....

(Quoted in Living Waters)

Henry David Thoreau reported in 1861 that he found wild geraniums and meadow parsnips, wild crabapple, high blackberry. He saw many birds including wild pigeon. He found gophers and rattlesnakes.

Exotic Species

Some species brought by European settlers have taken over in the wild, out-competing local species because the exotics have no natural pests or diseases in Minnesota.

Carp first appeared in Lake Minnetonka in 1880s.

Curled pondweed first appeared in Lake Minnetonka around 1900. Purple loosestrife first appeared in the 1940s. Eurasian water milfoil appeared in Lake Minnetonka in 1987.

In 1989, the Lake Minnetonka Conservation District launched mechanical harvesters to help suppress milfoil. In late 1990s, school groups and others began to cultivate loosestrife beetles for release in the watershed.

Hydrology of the Watershed

Elevation of Lake Minnetonka is 929.4 feet above sea level. Minnehaha Creek drops 242 feet (including 53 feet at Minnehaha Falls) to 687 feet above sea level by the time it reaches the Mississippi River.

The Minnehaha Creek Watershed District created a complex computerized hydrologic model of the watershed. The model calculates runoff based on the amount of rain times surface area, factoring in ground cover (pavement/ buildings vs. grass vs. trees/prairie), infiltration rates of soils, slope, storage capacity of wetlands and lakes, etc. Using the model, MCWD can predict where flooding is likely to occur after a major storm. The model also informs MCWD as it plans flood prevention methods such as the building of dams to increase a lake's storage capacity.

Major Sub-watershed Drainage Basins

Minnehaha Creek	53.3 square miles	34,112 acres
Gleason Lake Creek	4.0	2,560
Long Lake Creek	12.0	7,680
Classen Lake Creek	1.7	1,088
Painter Creek	13.6	8,704
Dutch Lake	3.0	1,920
Langdon Lake	1.7	1,088
Six Mile Creek	23.9	15,296
Lake Minnewashta Creek	4.4	2,816
Lake Minnetonka	58.3	37,312
Total	176.7 square miles	113,088 acres

*All sub-watersheds except Minnehaha Creek drain into Lake Minnetonka. Total drainage of the Lake is 122.6 square miles or 78,464 acres.

Rainfall and evaporation have more effect on the level of Lake Minnetonka than the dam does. Evaporation can remove as much as 50,000,000 gallons a day-almost twice what the dam removes on an average day when it's open. Annually, Lake Minnetonka loses about 30 inches to evaporation, 11.5 billion gallons. It's replenished with about 28 inches of rainfall and 20 inches of runoff-48 inches total. To keep the lake at near normal levels, MCWD drains off excess water (according to a clear plan) at various rates depending on the time of year and actual lake level.

The dam is closed whenever the lake reaches 928.6 feet above sea level, a level selected as the historical run out level. The top of the dam is at 930 feet above sea level. When the lake gets higher than that, it flows out over the top of the dam.

There are 23 square miles (14,720 acres) of marsh and wetland, and 28 square miles (17,920 acres) of surface water in the watershed.

(See Subwatershed Planning Unit Map. [AJ.SubwatershedMap.tiff])

(For greater detail, see the HHPLS report for your subwatershed.)

(See also the Groundwater section of the HHPLS folder.)

Water Quality

For current water quality data, see the [Lake Report Cards](http://www.minnehahacreek.org) under Water Quality at the MCWD web site: www.minnehahacreek.org. Additional current and historical data (such as for specific sub-watersheds) is also available both on the web site and in the HHPLS folder on this disk.

Climate-Weather

The Minnehaha Creek Watershed receives an average of 27-30 inches of rain annually, 65% of this during the May to September growing season. In the wettest year (1965) the watershed received 39.94 inches; in the driest (1958) it received 16.20 inches.

Meteorological Data for Minnehaha Creek Watershed

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precip. MaplePlain	.84	.78	1.52	2.35	3.93	4.83	4.65	4.00	2.83	2.06	1.46	.86	30.20
Precip. MplsSt. Paul	.82	.85	1.71	2.05	3.20	4.07	3.51	3.64	2.50	1.85	1.29	.87	26.36
Temp. MaplePlain High/Low	20.0 /-2	26.7 /5.7	38.0/18 .1	56.2/ 33.7	69.9/ 45.7	78.3/ 55.3	82.9/ 59.7	80.5/ 57.5	70.9/4 8.3	60.0 /39. 7	41.3/23. 6	26.8 /8.9	54.3/32.9
Temperature Mean	9.9	16.3	28.0	45.0	57.8	66.8	71.3	69.0	59.6	49.0	32.5	17.9	43.6
Temp. Mpls St.Paul High/Low	19.9 /2.4	26.4 /8.5	37.5/20 .8	56.0/ 36.0	69.4/ 47.6	78.5/ 57.7	83.4/ 62.7	80.9/ 60.3	71.0/5 0.2	59.7 /39. 4	41.1/25. 3	26.7 /11. 7	54.2/35.2
Temp. Mpls St.Paul Mean	11.2	17.5	29.2	46.0	58.5	68.1	73.1	70.6	60.6	49.6	33.2	19.2	44.7
Evaporation from Lakes	.32	.35	.85	1.80	2.95	3.95	5.70	5.60	4.40	2.95	1.30	.38	30.5
Wind Speed(MPH)	10.4	10.5	11.3	12.3	11.2	10.5	9.3	9.2	9.9	10.5	11.9	10.4	10.5
Wind Direct.	NW	NW	NW	NW	SE	SE	S	SE	S	SE	NW	NW	NW
Relative Humidity %	69	69	68	62	61	65	66	68	71	69	73	73	68
Possible Sunshine %	52	58	55	56	60	64	71	68	61	59	55	39	40

- Precipitation normals (in inches) 1951-1980. National Oceanic and Atmospheric Administration (NOAA), 1982.
- Temperature normals (degrees fahrenheit) 1951-1980. NOAA, 1982.
- Mean monthly lake evaporation in inches. Minnesota Hydrology Guide, 1976.
- Weather data, 1951-1980. NOAA, 1984.

Lake Minnetonka Statistical Summary:

- Earliest Spring Ice Out on Lake Minnetonka - March 11, 1878; Latest Ice Out - May 8, 1856; Average Ice Out - April 15
- Freezing of Lake Minnetonka - Usually by December 1. Ice thickness usually up to two feet.
- Lake Minnetonka typical pH of 8.3.
- Lake Minnetonka average summer surface temperature is 80 degrees. Depths remain at about 50 degrees.

(For further details, see pages 16-21 of the Water Resources Management Plan, pages 14-16. For historical weather data see <http://climate.umn.edu>).

HUMAN HISTORY OF THE WATERSHED

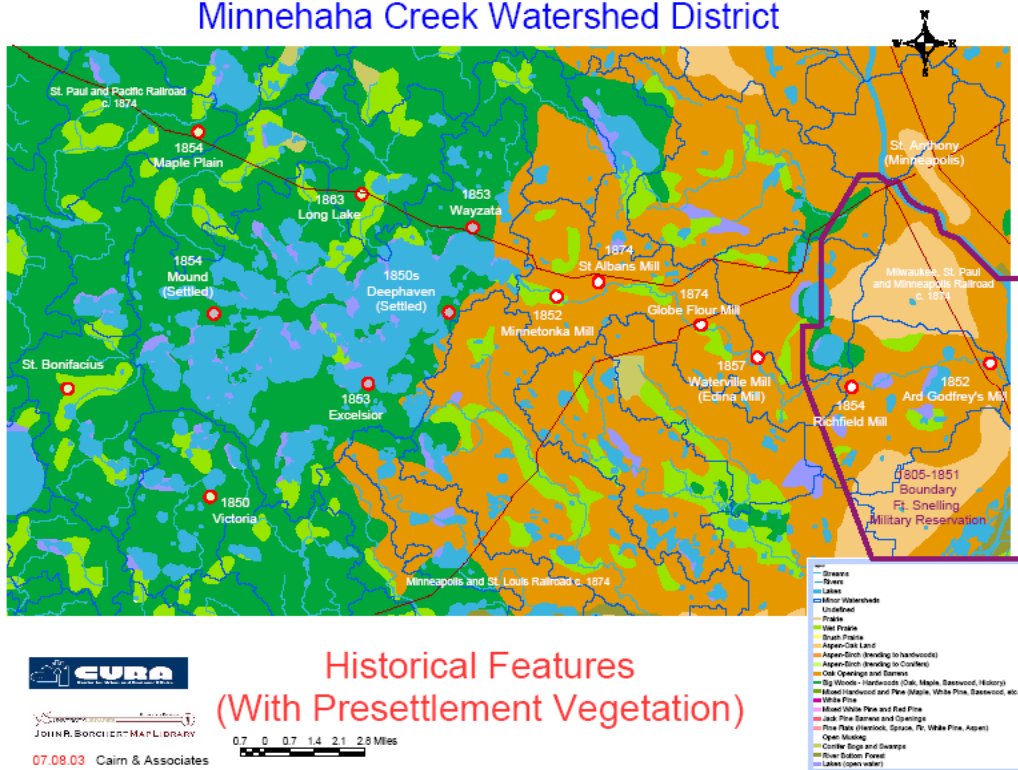
Introduction

When Americans first passed Minnehaha Creek around 1800, they saw unbroken wilderness. In fact, Native Americans had lived here for millennia, growing crops and opening the forest with regular burns. Yet theirs were mostly impermanent changes. By contrast, the first white settlers in the 1850s soon logged and plowed most of the watershed. Wildlife retreated to undeveloped corners. Large animals such as bear and bison disappeared. As farmers drained lakes and wetlands for fields and pastures, runoff increased. Animal wastes and erosion fouled the waters.

Yet life for these early settlers centered on water as a source of power and transport. Edina, Richfield, and Minnetonka took their names from mills on the creek. Well into the 1900s, almost every town in the watershed still centered on either a mill or a port on Lake Minnetonka.

MCWD, Cairn & Associates, CURA, and Borchert Map Library, Univ. of MN.

Minnehaha Creek Watershed District



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AS.1850s-70sSitesMCWD.pdf)

A second major transformation began in the early 1900s as burgeoning Minneapolis first lapped into the watershed. By 1960, waves of homes and commercial centers had replaced farms and villages throughout the eastern half of the watershed. Urbanization increased sewage and industrial pollution. (Centralized treatment of sewage reached Minneapolis in the 1930s.) In addition, rooftops and paved streets channeled untreated runoff into lakes and streams. Manicured lawns increased runoff and shed excess fertilizers and pesticides.

Increasing awareness of the importance of natural ecosystems, backed by federal, state, and local laws, have improved water quality while offering new challenges. Industries stopped discharging into the creek, the last sewage treatment plants in the watershed shut down in the 1970s, and leaded gasoline phased out. Many landowners now seek to capture runoff pollution right on their property using restored wetlands and retention ponds. 2002 legislation banned unnecessary phosphorus fertilizer. Yet increasing traffic and continuing development and population growth in the western end of the watershed present new challenges to the Minnehaha Creek Watershed.

Native Americans in the Watershed

Humans first arrived in the area some time after the last ice age. At some point, they began to alter the natural landscape through repeated use of fire, reducing undergrowth in the forest and opening up pockets of prairie and oak savannah. They laid out villages, trails, and plots for crops in choice locations, typically next to large water bodies. They also built hundreds of earth burial mounds, concentrated especially on the west end of Lake Minnetonka. About 50 mounds remain in the watershed today, protected by law.

It was the Dakota who first named “Mini Haha,” meaning “curling water” or “the waterfall.” The creek itself they called, “Wakpa Cistinna,” meaning “little river.” Other Dakota names for water bodies in the area:

Dakota Name	Meaning	Name Today
Mde Maka Ska	White Earth Lake	Lake Calhoun
Mde Unma	Other Lake	Lake Harriet
Wita Tomna	Four Islands Lake	Lake of the Isles
Minne Washta	Good Water	Lake Minnewashta

(Based on information from, “Where the Waters Gather and the Rivers Meet: an Atlas of the Eastern Sioux,” by Paul Durand, Prior Lake, 1994.)

In 1829 European settlers noted the Dakota Mdewakanton village, Reyataotonwe (Inland Village) on the southwest shore of Lake Calhoun. The band’s chief was named Cloud Man, or Man-of-the-Sky (Ma-hpi-ya-wi-ca-sta). Gideon and Samuel Pond set up a mission near the village in 1834, and worked with government agent Philander Prescott to teach the villagers to use European farming methods. In 1839, Cloud Man and his band moved to Oak Grove in present day Bloomington to avoid conflict with Ojibwe from the north and east. Another band camped annually on the peninsula between present day Gray’s Bay and Wayzata Bay to harvest wild rice. Chief Shakopee and his band camped on the site of present day Wayzata.

Then in the 1851 Treaty of Traverse des Sioux, the Dakota had to give up nearly all their land in return for goods, a trust fund, and cash payments. In 1862, beset with famine, dissatisfied with reservation life, and frustrated with unfulfilled government promises, the Dakota left their reservation along the Minnesota River. In August, young Dakota warriors attacked isolated settlements. Fighting spread across southwest Minnesota. The Army counterattacked. In weeks it was over, leaving many hundreds dead, mostly settlers. Afterward, the government executed 38 Dakotas and removed nearly all the rest to South Dakota. Small groups of the few who remained still camped seasonally near Excelsior into the 20th century.

Explorers

Daniel Greysolon Sieur Du Luth, and Father Louis Hennepin were the first Europeans to visit the area in the 1680s. In 1671, France claimed the center of the continent. French fur traders likely traversed the watershed in the 1700s, and may even have built a trading post on Lake Minnetonka. For another century, France, Spain, and Britain vied for control of the fur trade.

In 1803 the United States bought the Louisiana Purchase from France. To establish U. S. control of the Northwest Territory, in 1805 Lieutenant Zebulon M. Pike acquired from the Dakota a site for a fort at the confluence of the Mississippi and Minnesota (then called the St. Peter) rivers. Work on the fort began in 1819. Colonel Josiah Snelling took command in 1820. After his death, the fort would take his name.

In 1822, seventeen-year-olds Joseph Renshaw Brown and William Joseph Snelling (son of the colonel) took two other soldiers in canoes two days and 22 miles up Minnehaha Creek to Lake Minnetonka. They camped on Big Island and returned to the fort the next day. They were the first Europeans to record a trip to the lake. Joe Brown made a claim in 1826 on the north bank at the mouth of the creek and built the first cabin in the

watershed there, though he abandoned it four years later. For another 30 years, few whites ventured up the creek which settlers called Brown's Creek until General LeDuc renamed it Minnehaha in 1852. The Dakota successfully kept the presence of sacred Lake Minnetonka a relative secret from mapmakers. As late as 1850, government maps failed to show the lake.

Late 1850, the Pope military map failed to show Lake Minnetonka.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AP.PopeMilitaryMap.tif)

The Founding of the Watershed's Towns in the 1850s

To the Editor of the National Era:

Dear Sir: –

...The soil is sandy, easy to cultivate, and generally very productive... Lake Calhoun and Lake Harriet, lying four miles west... are each from one to two miles in length, and one mile wide, plentifully supplied with pike, pickerel, bass, and other smaller varieties of fish... Yet there are hundreds in the Territory similar to these... One of these, which is now attracting considerable attention, is situated sixteen miles west of this place. It is said to be forty miles in length, and contains many islands... It is usually now called by the whites "Minne-tonka," which in the Dakotoh language signifies large water...

The prairies are small, so that timber and water are easily accessible. And the natural meadows afford an abundance of good hay. A farmer may come on early in the spring, with team and stock enough for a well-cultivated farm. He can readily find a location, where he can plow land and put in his seed... The lands west of the Mississippi river, hereto fore belonging to the Sioux Indians, are now open to settlement, and emigrants have been pouring into them like a flood for the last few months... Those who wish to get good farms, and to get them cheap, will do well to come on early in the spring....

- J. W. M. Northhampton (Massachusetts) Courier, 1852

I beg you not to go into that terrible far-off Territory, not explored or inhabited, where nothing but trappers and Indians live, as I see by the map of the world. It will... cost you, I fear, all your savings... and then be murdered in the wilds of Minnesota by savages, or drowned in Lake Minnetonka, or have your precious blood sucked out of you by mosquitoes—for a woman here told me they have trunks like elephants... My son, don't go there!

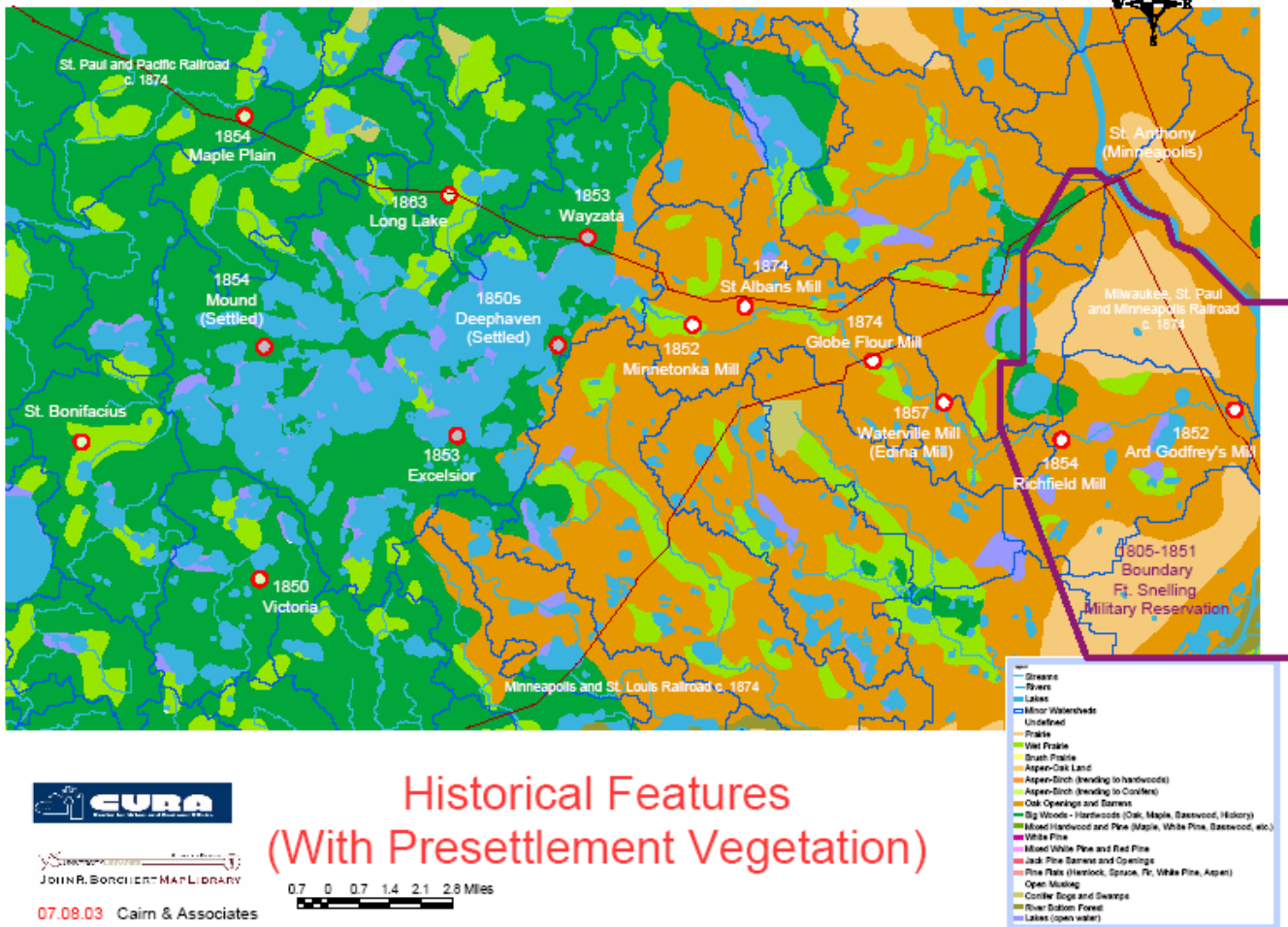
-To Hezekiah Brake's from England, March 1, 1852 Happenings Around Excelsior, p. iii

An 1838 agreement with the Dakota allowed some white settlement west of the Mississippi. By 1839, some 500 settlers had crossed the river, though only a handful yet lived in the Minnehaha watershed because its lower reaches were reserved for Ft. Snelling. Pent up demand for land spilled across the watershed following the removal of the Dakotas after the Traverse des Sioux Treaty in 1851. In 1852 President Millard Fillmore reduced the size of the military reservation.

Within a couple of years, the rich water resource drew hundreds of settlers. Seeds of towns sprouted along the creek and the shore of Lake Minnetonka. Settlers could "pre-empt" or claim 160 acres at a low government price as long as they built and occupied a house, fenced and cultivated land right away. (See description of preemption, in Appendix below.) By 1860 the entire watershed had been claimed, most of the forest had been logged, and most of the prairie plowed.

The presettlement vegetation map below shows historic features along with the founding years for watershed cities, including rail lines and the boundary of the Ft. Snelling Reservation.

Minnehaha Creek Watershed District



(Image can be found in MCWD History Illustrations “Overview & History” folder on Disk 1: AS.1850s-70sSites.pdf)

Port Towns

Minnetonka - Built around a mill on Minnehaha Creek (see “Mill Towns” below), the milldam built in 1852 also made the creek navigable between the dam and the lake. Thus the village of Minnetonka Mills became the first port on the lake.

Excelsior - George Bertram organized the Excelsior Pioneer Association, a colony of some 40 New Yorkers who paid dues into a settlement fund and received a house site in town and up to 160 acres for \$1.25 per acre. The first group of settlers arrived in 1853 and immediately set about dividing up the land and building their houses. Within a couple of years, the entire Excelsior Township was fully deeded out. The story of the very first Excelsior pioneers well captures the busy feel of that period. (See story in Appendix below.)

Wayzata - Oscar Garrison built a cabin in present-day Wayzata in 1853. He and Lucious Walker founded the town of Wayzata in 1855 around a store and a steam-powered sawmill. The Harrington Inn, first hotel on Lake Minnetonka had opened in Wayzata’s woods the year before.

Mound - The first cabins in Mound went up in 1854 though the official founding of Mound City did not occur until 1876. Settlers met in Mathias Cook’s log cabin in 1858 and named their settlement Minnetrista.

Deephaven – Settled in the 1850s, Deephaven incorporated in 1900.

Mill Towns

“On the 12th of April, 1852, Simon Stevens... and Calvin Tuttle, a millwright... set out from St. Anthony to search for a large body of water west of the village... A little before noon on the first day, they came to a clear, swift-running stream, which they surmised was the outlet of the lake... They pushed on, westerly, and came to Wayzata Bay, thence across the ice, which was about three feet thick, past “Breezy Point, to Big Island, where they camped for the night... The next morning, they came down the outlet to a point about fifty rods above the site... of Minnetonka, where the rapid flow of water, and the narrow valley with solid banks indicated the feasibility of a mill-dam...” Timber and the ease “with which logs might be driven to the dam, clearly pointed out an excellent site for a saw mill.”

-Isaac Atwater and John H. Stevens, History of Minneapolis and Hennepin County

With waterpower fueling an industrial revolution, Minnehaha Creek became the site of several lumber and grist (flour) mills. The nucleus of the cities we know today formed around each mill and its accompanying roads and rail links.

Minnetonka Mills 1876 Minnesota Historical Society



(Image can be found in MCWD History Illustrations “Historic Photos” folder on Disk 1: 1876_Minnetonka_Mills.jpg)

Minnetonka - In 1852, Simon Stevens (brother of Minneapolis founder John Stevens), Calvin Tuttle, and James Shaver built the Minnetonka Mill two and a half miles downstream from Lake Minnetonka. (Site of the present day McGinty Road bridge just west of Highway 494.) The twelve-foot milldam made the creek navigable from the lake to their mill. With the first lumber they cut, the partners erected the Minnetonka Hotel the following year, and a furniture factory in 1855. Workers’ families moved into what soon became a thriving community. In 1869, Thomas Hooker Perkins built a flourmill on the site of the Minnetonka Mill, which had burned in 1868. Perkins’ mill produced 300-400 barrels of flour a day, made from wheat brought from area farms by rail and by boat across Lake Minnetonka. The Minneapolis and St Louis Railroad put a station at Minnetonka Mills in 1881.

Minnehaha Falls - Also in 1852, Ard Godfrey established a settlement on Joe Brown’s old claim at the mouth of the creek. Godfrey built a sawmill the following year, and a gristmill some time later. He built his house atop the bluff where the Veteran’s Hospital now sits. The Godfrey family left the site in 1871. The gristmill burned in 1879. Remains of the milldam are still visible. This mill is the exception that proves the rule for it could not compete with the greater water power of St. Anthony Falls. So Minnehaha Falls, made famous by Longfellow’s *Song of Hiawatha* in 1855, became a park rather than the hub of its own city.)

Richfield - In 1854, Philander Prescott, Judge Willis Moffett, and Eli Pettijohn built a gristmill at what is today 50th Street and Lyndale Avenue (now under the Lyndale Avenue bridge in Minneapolis). Settlers came from up to sixty miles to have grain ground to flour. By the 1860s Richfield Mills also had a school, a store, two churches, and a blacksmiths. (The mill was sometimes called the Old Red Mill or the Richland Mill.) Richfield Township also originally included what is now Edina. The mill produced twenty barrels of flour a day. It closed in 1886. (In 1927 Minneapolis annexed the portion of Richfield along the Creek.)

Plymouth – In 1855, four brothers founded the Plymouth settlement around a gristmill on the lake they gave their family name. (Though much of Plymouth is in the Minnehaha Watershed, Parkers Lake lies outside it.)

Edina - Inspired in part by the success of the Richfield Mill, four partners built a mill in 1857, named the Waterville Mill. (Remains visible today at Browndale Avenue and 50th Street.) Two years later they sold it to Jonathon T. Grimes and William C. Rheem. During the Civil War, Fort Snelling purchased flour from the mill, keeping it running day and night. In 1869, Andrew Craik bought the mill and changed the name to Edina Mills after his birthplace, Edinburgh, Scotland. This mill sold its flour at a store in downtown Minneapolis. The carriage builders (1876), school (1888), church, blacksmith, post office and store eventually went up nearby. Craik built a huller and drying kiln and specialized in the manufacture of oatmeal and pearl barley. The mill continued to grind feed until World War I.

St. Albans Mill (Minnetonka) - John Alt left the Perkins Mill (Minnetonka) in 1874 and built the St. Albans Mill for flour (at present day Cedar Lake Road and Mayflower Avenue). It stood only until 1881 when the owners of the Minnetonka Mills bought it and tore it down to keep its dam from backing up the water to their own dam.

St. Louis Park - The Globe Flour Mill was built in 1874 where today's Excelsior Boulevard crosses Minnehaha Creek. The mill produced one hundred twenty-five barrels of flour per day. To assure steady power, the owners added a steam engine. The name changed to Schussler's Mill until it closed in 1894.

Long Lake - The Medina Mill built on Long Lake Creek in 1875 produced unexcelled flour under a series of owners for ten years.

Hennepin County tried to buy the Minnetonka Mill dam to gain control over water levels on Lake Minnetonka (to satisfy resort owners) and downstream (to regularize flow for the Edina and Schussler mills). Charles Burwell would not sell, but the court condemned the dam and gave it to the county, ordering a payment of \$12,000. The County rebuilt a lower dam, and then in 1897 located the dam at Grays Bay, where it stands today. Ironically, the building of the Gray's Bay Dam cut waterpower to the mills downstream. Steam power supplemented waterpower. Yet ultimately, the Minnehaha Creek mills could not compete with those tapping the larger flow of St. Anthony Falls in downtown Minneapolis. (The first mill there appeared in the 1820s.)

Agriculture

The biggest bulk of the berries was sold in the Minneapolis Farmer's Market. My brother Stephen and I arose at 2:30 to begin our daily trip with the horses to Minneapolis. Bartering with buyers commenced, but no carrying or distribution was permitted until 6:00 a.m. when the bell rang. One morning the market master counted 4,000 raspberry crates, 24 pints in a crate, which were bought by 400 to 500 individual grocers. Later chain stores took over and the number of individual grocers diminished. Wholesale buying usually ended by about 7:00 in the morning. Following [breakfast at Osier's Restaurant] the horses... were hitched and we wended our way home.
- Stanley Feltl, reporting on the family's farm in Minnetonka in 1920

1905 Postcard, Strawberry Picking, Lake Minnetonka, Minnesota Historical Society



(Image can be found in MCWD History Illustrations "Historic Photos" folder on Disk 1: 1905_Strawberry_Pickers.jpg)

Even as the area's future cities sprouted from the mills, bridges and docks along the Creek and Lake Minnetonka, most settlers went to work at the primary economic activity of the watershed for a century to come: farming. Indeed, the remaining towns of the watershed were mainly local agricultural market centers and rail stops: Victoria (1850), Maple Plain (1854), St. Bonifacius, and Long Lake (1863).

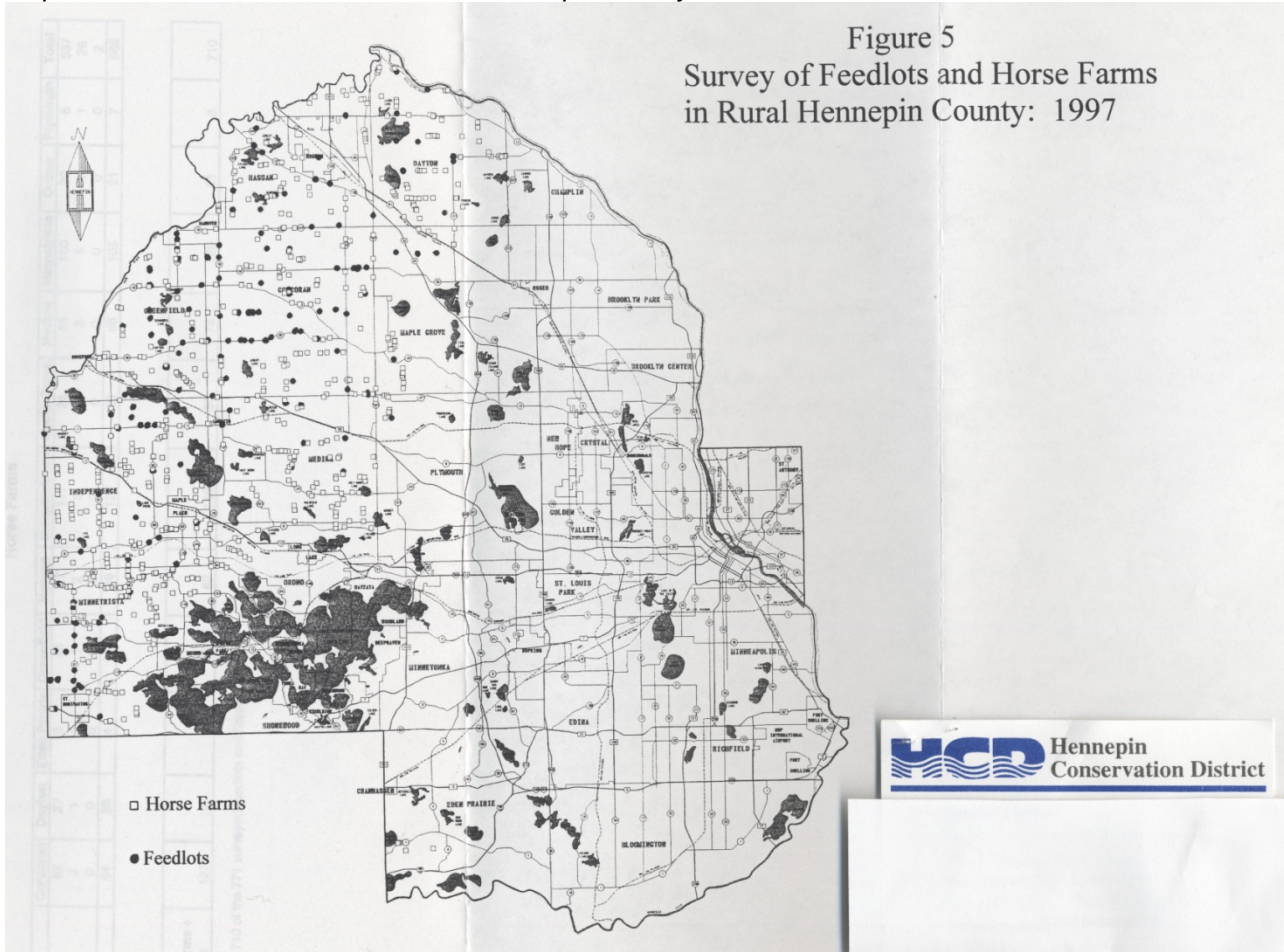
The first pioneers planted corn, beans, and potatoes, among other crops, as well as garden vegetables such as peas, turnips, pumpkins and radishes. They often kept chickens (for eggs), sheep (for wool), cows (most for dairy, some for beef), and hogs. They hunted game when they could, foraged for wild grapes, raspberries, and nuts, and tapped maple sap for syrup. Most of what they grew they ate themselves. Wheat and oats were cash crops that they could bring to the mills for grinding, then sell to markets as far away as Europe. Ginseng root was harvested for export to China for a few years in the mid-1800s.

It soon became clear to the settlers that while the flat, well-drained fields of the eastern watershed were well adapted to fields of grain for market, the hilly terrain of northern Edina and on west around Lake Minnetonka was better suited to a cash crop for regional consumption: fruit.

Excelsior's Peter Gideon experimented with rootstocks until in 1863 he discovered the area's first winter-hardy apple, which he named after his wife, Wealthy. Horticulturists continued to experiment and develop plants that could survive the climate and produce large, sweet, saleable produce: strawberries, raspberries, currants, apples, grapes, and cranberries. In 1906, Charles Haralson established the University Fruit Breeding Farm at Zumbra Heights, five miles southwest of Excelsior. The area continued to produce fruit until the extended droughts of the 1930s. Labor and materials shortages during World War II all but finished off the area's fruit growers.

Today farms in the western watershed still raise animals and produce corn, soy, and other crops. There are also hundreds of horses.

Map of feedlots and horse farms in rural Hennepin County.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AT.1997.HorseFarmsHCD.jpg)

Tourist Boom

Homeward now went Hiawatha...
Only once his pace he slackened,
Only once he paused or halted,
Paused to purchase heads of arrows
Of the ancient Arrow-maker,
In the land of the Dacotahs,
Where the Falls of Minnehaha
Flash and gleam among the oak-trees,
Laugh and leap into the valley.
There the ancient Arrow-maker
Made his arrow-heads of sandstone,
Arrow-heads of chalcedony,
Arrow-heads of flint and jasper,
Smoothed and sharpened at the edges,
Hard and polished, keen and costly.
With him dwelt his dark-eyed daughter,
Wayward as the Minnehaha,
With her moods of shade and sunshine,
Eyes that smiled and frowned alternate,
Feet as rapid as the river,
Tresses flowing like the water,

And as musical a laughter:
And he named her from the river,
From the water-fall he named her,
Minnehaha, Laughing Water.
Was it then for heads of arrows,
Arrow-heads of chalcedony,
Arrow-heads of flint and jasper,
That my Hiawatha halted
In the land of the Dacotahs?
Was it not to see the maiden,
See the face of Laughing Water
Peeping from behind the curtain,
Hear the rustling of her garments
From behind the waving curtain,
As one sees the Minnehaha
Gleaming, glancing through the branches,
As one hears the Laughing Water
From behind its screen of branches?

- Excerpt from Song of Hiawatha, Henry Wadsworth Longfellow

Though he never visited Minnesota, H. W. Longfellow set his epic poem among its Dakota people. The huge success of *The Song of Hiawatha* ensured the fame of Minnehaha Falls throughout Europe and America. Entrepreneurs also seized upon the unspoiled loveliness of Lake Minnetonka, widely promoting it as a health-enhancing restorative for wealthy vacationers.

In 1855, the Fort Ridgely Territorial Road opened passage from Minneapolis to Wayzata. Reliable travel across most of the watershed was now open. Wayzata's Garrison and Walker immediately began a stagecoach run into St. Paul. In 1860 the steam side-wheel paddleboat Governor Ramsey launched in Excelsior began carrying passengers, mail and goods from Minnetonka Mills throughout Lake Minnetonka.

In the years after the Civil War, tourists including wealthy southerners and easterners began coming to the "healthy waters" of Lake Minnetonka. More hotels went up in response. The St. Paul and Pacific Railroad built a train line to Wayzata in 1867, making Minnetonka convenient to visit for the first time. Several steamboats eventually plied the lake. The steam ship companies dredged out the channel into the upper western end of the lake in the mid-1870s.

1876 saw 6,000 summer visitors. In 1879, the Hotel St. Louis, the first of five huge resorts on the lake opened in Deephaven. Hotel traffic boomed in the 1880s, with new hotels continuing to go up around the lake. Through the 1880s tens of thousands stayed at the lake hotels each summer. More than 200,000 came in 1883, with a hundred thousand taking lake excursion boats. At the same time, quarter-acre lots on Lake Minnetonka were advertised to a growing group of summer cottage owners. The railroad also made day trips possible from the booming city of Minneapolis.

1875, Chapman's Hotel, Photographer Charles Alfred Zimmerman. Minnesota Historical Society,

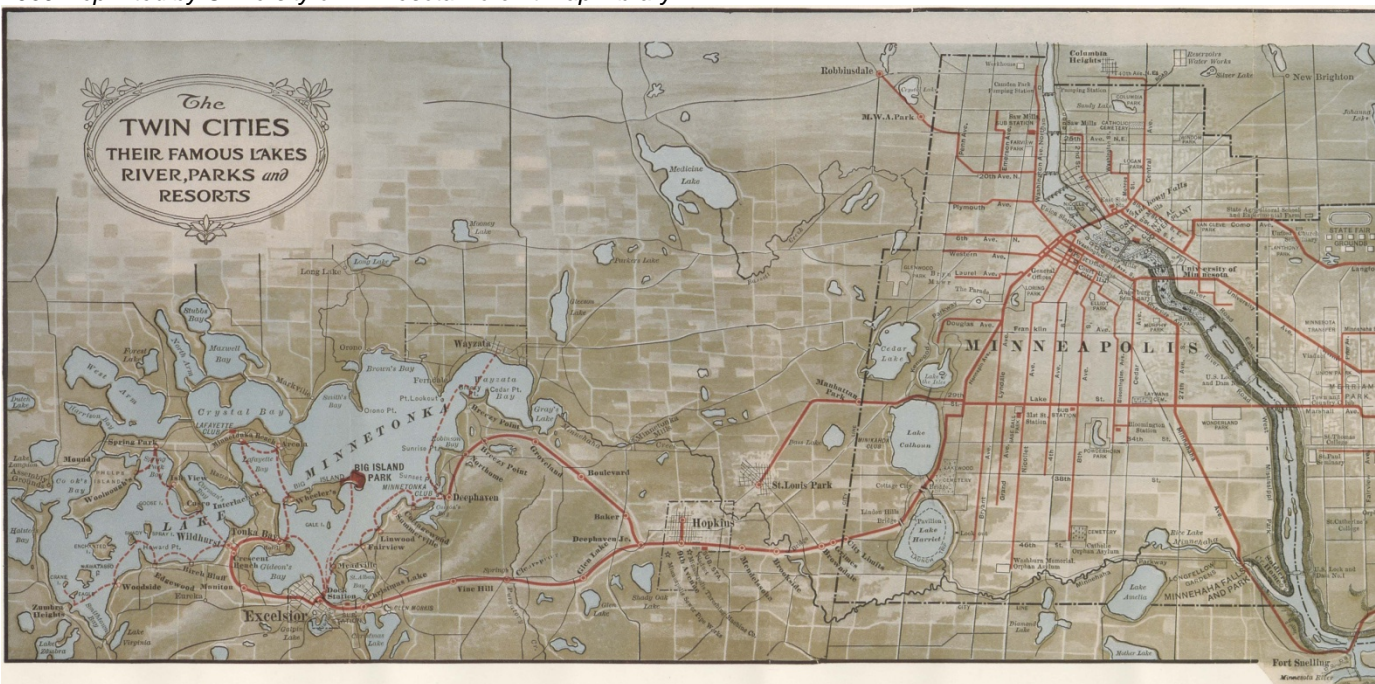


Even during the years of the tourist bonanza, an increasing number of people were building year-round homes on the lake. Then, as transportation to the rest of Minnesota improved, tourists began searching for new places to take their vacations.

When the majestic Lafayette Hotel burned in 1897, it marked the end of an era. Lake Minnetonka had almost completely transformed from vacation destination to permanent residential communities. (Notwithstanding, President Taft governed from the Lafayette Club in the summer of 1911.)

In 1906 Thomas Lowry's Twin Cities Rapid Transit Company (TCRT) tried to revive the tourist industry by running a steam powered streetcar line from Lake Harriet in Minneapolis to Excelsior. The TCRT's fleet of streetcar boats, excursion boats, and ferries extended service across the lake. (See map below and visit www.mtmuseum.org.) The TRCT opened the Big Island amusement park in 1906, and took over the Tonka Bay Hotel. Yet just five years later the park and hotel closed. The ferries and excursion boats were scuttled between 1910 and 1914. Streetcar boat service continued for another decade. (The restored Minnehaha launched in 1996.) Automobiles ultimately put the streetcars out of business in 1954.

1909 Reprinted by University of Minnesota Borchert Map Library



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AU.1909StreetcarBorchert.tif)

Growth of the Suburbs

The first horse drawn street cars in Minneapolis began to run in 1875. By the 1880s, they had extended south to Minnehaha Creek. They went electric in 1889. Rapid development followed these lines.

Mobile and affordable automobiles began to replace the streetcars beginning in the 1920s. (Minnesota had 920 automobiles registered in 1903. By 1920, that number had grown to 324,166.) With them, suburban neighborhoods swelled.

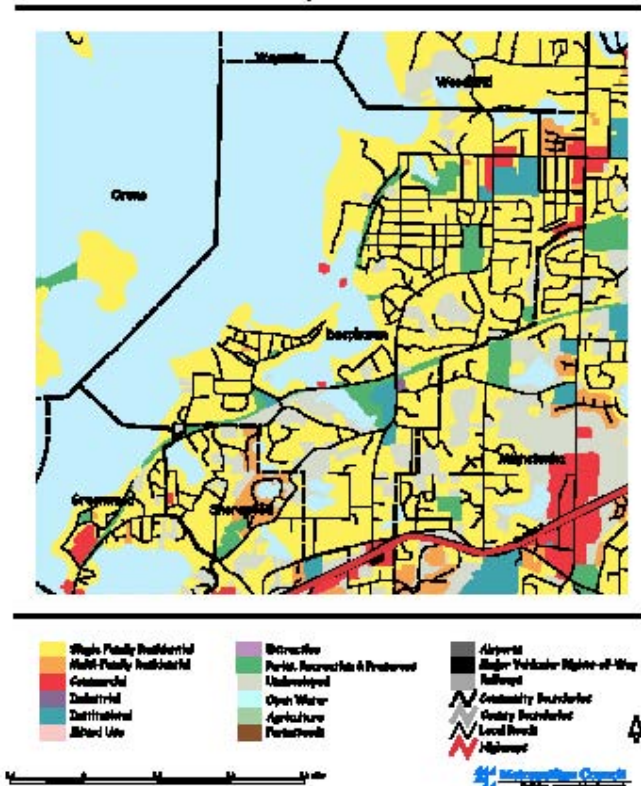
Right through World War II, however, the Minnehaha Watershed remained predominantly rural, punctuated with small towns and villages. Indeed, the Great Depression of the 1930s even caused a small decline in the population of tourist communities around Lake Minnetonka. Yet with the end of the war, Minneapolis peaked at 521,718 residents in 1950, and the population began to shift to the suburbs. Southdale Mall went up in Edina in 1954-55. The last farms in Edina disappeared by the early 1970s.

New freeways opened the area for ever more development. The Highway 100 beltway crossed St. Louis Park and Golden Valley between 1935 and 1942. Highway 62 paralleled Minnehaha Creek in 1963-1965. Other arterial highways also pushed out through the watershed.

Throughout the last fifty years and continuing today, suburban development has spread steadily across the watershed. Today agriculture is limited to the north and west of Lake Minnetonka. See also series of Land Use maps on MCWD Disk 2 from 1874 to the present. The HHPLS includes land use maps for individual cities from 1990 and 2000.

Land use map of Deephaven in 2000.

2000 Generalized Land Use Deephaven



(Image can be found in MCWD History Part 2 "Maps2-Land Use" folder on Disk 1: Deephave90.pdf)

As of 1980, land uses of the 115,840 acres of the watershed were divided as follows:

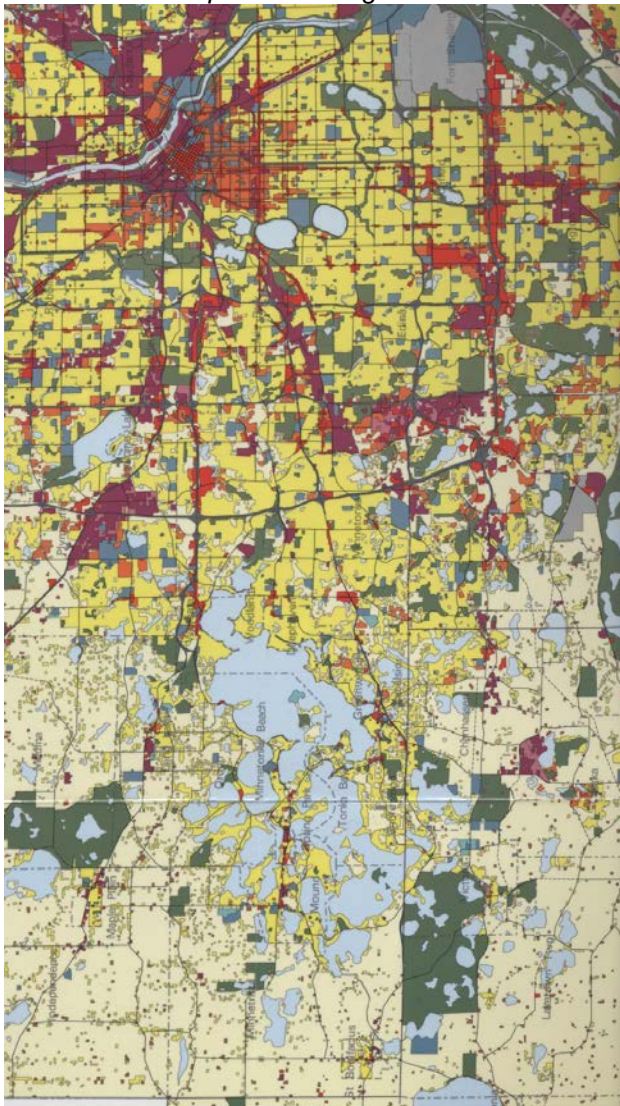
- 24,370 acres residential (21%)
- 3,370 acres commercial (3%)
- 3,584 industrial (3%)
- 12,425 public and recreational (11%)
- 47,977 vacant and/or agricultural (41%)
- 29,823 acres of protected waters and wetlands* (26%)

*(Some of these are also listed under other uses.)

Public Green Spaces

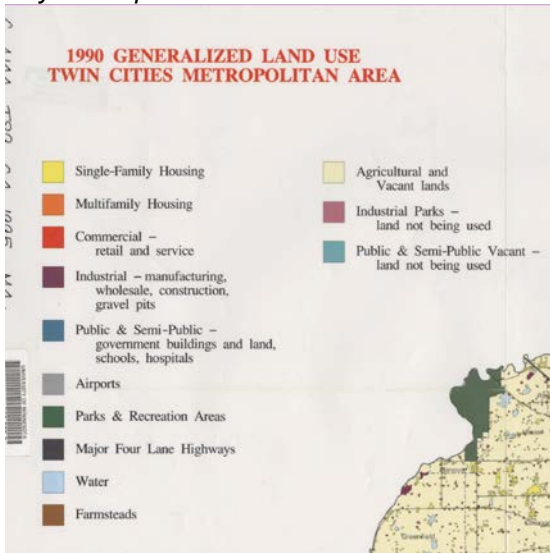
Ever since Excelsior set aside its Commons in 1854, residents of the Minnehaha Creek Watershed have been especially blessed by having a significant portion of the Watershed—especially shore lands—dedicated to public use, including the Chain of Lakes, Minnehaha Creek, and Minnehaha Falls in Minneapolis, Big Island Regional Park in Lake Minnetonka, Civic Center and neighboring parks in Minnetonka, and French, Carver, and Lake Minnetonka Regional Parks—units of the Three Rivers Park District (formerly Hennepin Parks). In the map below parks are marked in green — don't confuse with dark gray for major highways.

1990 land use map shows designated land uses.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AV.1990LandUseMet.tif)

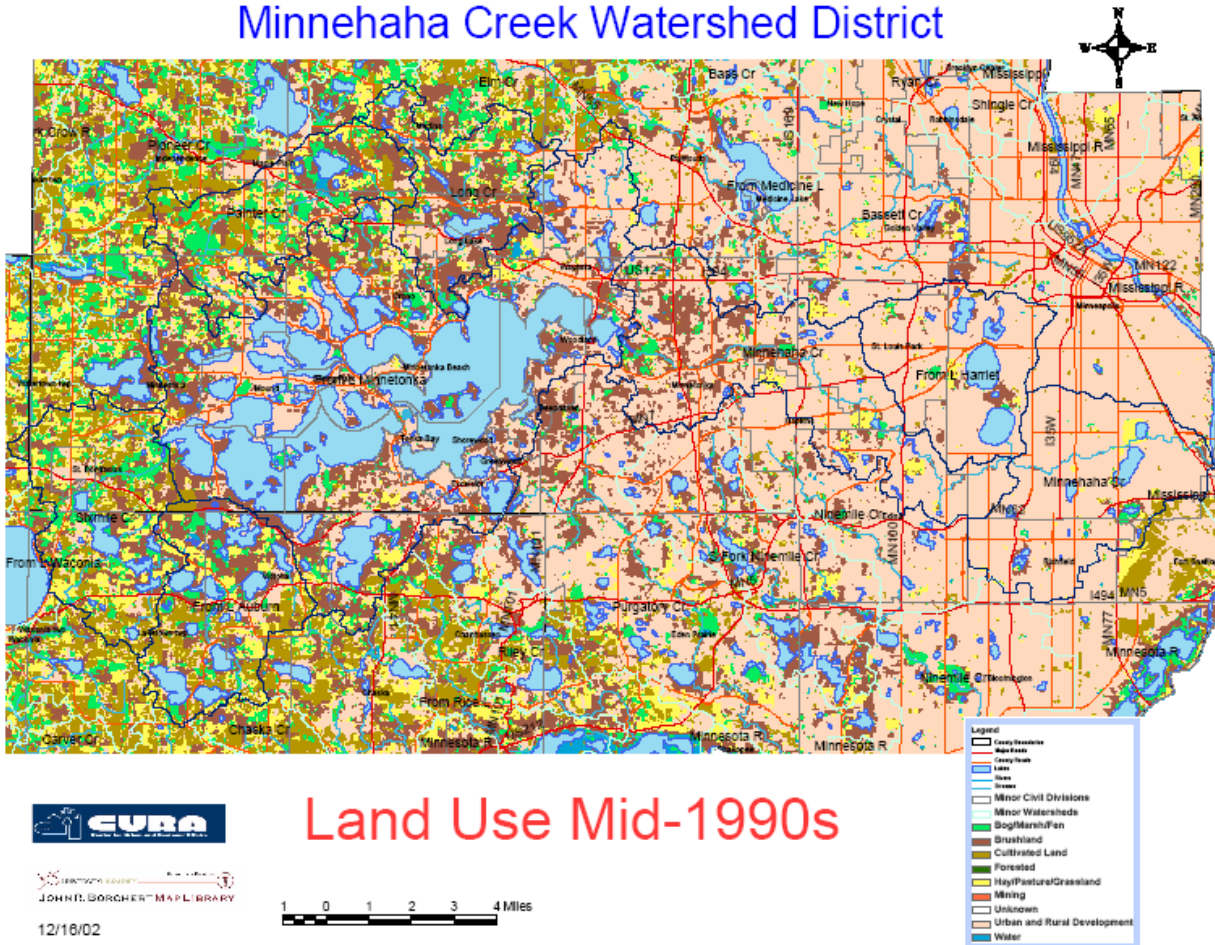
Key for map above.



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AV.1990MetKey.tif)

1990s land use map shows what is actually on the land.

Minnehaha Creek Watershed District



(Image can be found in MCWD History Illustrations "Overview & History" folder on Disk 1: AW.1990sLandUseCURA.pdf)

In 1857 Edward Murphy donated the first parkland to the City of Minneapolis. In 1883, the Legislature authorized a Board of Park Commissioners for the city. In 1885 Colonel William S. King donated the land around Lake Harriet. This system expanded to its present extent following the vision of Theodore Wirth. Most Minneapolis park lands were donated or purchased rather than condemned.

The Legislature honored the grace and history of Minnehaha Falls by making it the first Minnesota State Park in 1889. Besides fishing, swimming, sharing picnics, and of course, visiting the falls, from 1894 to 1934 visitors could also enjoy visiting a zoo, run for many years by the flamboyant Fish Jones. There was also a carnival, a track for horse racing—and a number of rowdy bars—next to the park during this same period. 20,000 people camped at the Falls annually through the 1930s .

As suburban development swept across the rural landscape after World War II, local governments preserved some of the last open lands. The Braemar Park Plan pioneered the Edina Parks in the late 1950s and early 1960s just as that city's farms disappeared. Farmer Morris T. Baker donated 210 acres that was to become the first unit of the Three Rivers Parks.

Today there are many millions of park user visits in the watershed each year, including 5.5 million to the Chain of Lakes and half a million to Minnehaha Park.

Conclusion

So we return to the present. Next time you stroll along Minnehaha Creek or its tributaries, or next time you boat or swim on one of the lakes in the watershed, take a moment to think about all that has happened there. What did it look like 150 years ago? How do you want it to look 150 years from now? The future of this historic, lovely treasure depends upon every one of us.

BIBLIOGRAPHY

Special thanks to Jane King Hallberg and Deborah Morse-Kahn for their insight, encouragement, and aid.

Note:

** = Essential resource for anyone interested in the watershed's human and natural history. All of these books are available for purchase from local historical societies, or in bookstores. (Minnehaha Creek Watershed District Plan is available for download as a PDF.)

* = Outstanding resource, especially for students of the history of that community.

Atwater, Isaac, and John H. Stevens. "History of Minneapolis and Hennepin County," quoted in *Minnesota History*, Spring 1975. Cleveland, Clarissa. (1853). Letter to niece Mariah L. Bardwell. From Henry M. Nichols file, Manuscript Collection, Minnesota Historical Society. Durand, Paul. (1994). "Where the Waters Gather and the Rivers Meet: an Atlas of the Eastern Sioux," Prior Lake.

Excelsior-Lake Minnetonka Historical Society. (Republished 1975). 1906 Souvenir Booklet: "Picturesque Lake Minnetonka." Excelsior-Lake Minnetonka Historical Society. Excelsior.

Feltl, Katherine, Stephen, Stanley, Cyril, Mary and Margaret. "History of the Pioneer John Joseph Feltl Family in Minnetonka and Hopkins, Minnesota: 1867-1974."

Gilman, Rhoda R. (1991). *The Story of Minnesota's Past*. Minnesota Historical Society Press, St. Paul.

Gray, Dick. (1985). *Open Season: A Collection of Passwords Columns*. Freshwater Foundation. Navarre.

**King Hallberg, Jane. (1995). *Minnehaha Creek: Living Waters*. Cityscapes Publishing Company, Minneapolis.

M., J. W. (Nov. 30, 1852). "The Northwest." *North Hampton Courier*.

Minneapolis Public Library. (2002). "A History of Minneapolis: Early History" Minneapolis Public Library Web site: www.mplib.org/history/eh1.asp

*Morse-Kahn, Deborah. (1998). *Edina: Chapters in the City History*. City of Edina.

Ogland, James W. (2001). *Picturing Lake Minnetonka: A Postcard History*. Minnesota Historical Society, St. Paul.

Quinn, Joyce. (1981). *Lydia Ferguson Diary: 1854-1886. A Pioneer Woman's Day by Day Account of the Struggles and Hardships of Early Life at Linwood, Lake Minnetonka, Minnesota*. Excelsior-Lake Minnetonka Historical Society. Excelsior.

Tester, John R. (1995). *Minnesota's Natural Heritage: An Ecological Perspective*. University of Minnesota Press, Minneapolis.

**Wenck Associates. (1997). *Water Resources Management Plan*. Minnehaha Creek Watershed District. Deephaven.

*Wilson Meyer, Ellen. (1980). *Happenings Around Wayzata: The First Hundred Years: 1853-1953*. Tonka Printing Company, Excelsior.

*Wilson Meyer, Ellen. (1982). *Happenings Around Excelsior: The First Hundred Years: 1853-1953*. Tonka Printing Company, Excelsior.

Wilson Meyer, Ellen. (1997). *Lake Minnetonka's Historic Hotels*. Excelsior-Lake Minnetonka Historical Society. Excelsior.

Wilson Meyer, Ellen. (1993). *Tales from Tonka: Stories of People Around Lake Minnetonka*. Excelsior-Lake Minnetonka Historical Society. Excelsior.

LOCAL HISTORY RESOURCES

Thanks to the dedicated volunteers and staff of the following organizations for preserving and sharing local history.

You may purchase from these organizations many of the historical books and maps listed on the "Background Publications" page. They have collections of articles, photos, maps, diaries, and much more which are available to the public.

Hennepin History Museum
Hennepin County Historical Society
2303-3rd Avenue South, Minneapolis, MN 55404
612/870-1329 Fax: 612/870-1320
Museum Administrator: Todd Mahon
Web: www.hhmuseum.org
Email: hhmuseum@mtn.org
Galleries: Sun. 1:00-5:00 pm; Mon. - Closed; Tues. 10:00-2:00 pm; Wed. 1:00-5:00 pm;
Thurs. 1:00-8:00 pm; Fri.-Sat. 1:00-5:00 pm Library Tues. 10-2; Wed. – Sat. 1-5.
Adults \$2.00 Kids & Seniors \$1.00 Members Free

Edina Historical Society
4711 West 70th Street, Edina, MN 55424
Admin. Director: Kay Wetherall
952/920-8952
Hours: Thurs. 9-12; Sat. 10-12

Excelsior-Lake Minnetonka Historical Society,
P.O. Box 305, Excelsior, MN 55331
952/474-8956
Liaison: Betty Peck
Hours: 9 - 12 Wed. & by appointment. Museum Hours: Sat. 10 - 2:00 p.m. June thru October

Golden Valley Historical Society
7800 Golden Valley Road, Golden Valley, MN 55427
Liaison: Judy Mustard
612/544-4547

Hopkins Historical Society
1010-1st Street South, Hopkins, MN 55343 (mailing)
33-14th Street North, Hopkins Community Center
Liaison: Dean Empanger
952/938-8304
Hours: 2 - 5 p.m. Sun.

Minnetonka Historical Society
13209 McGinty Road East, Minnetonka, MN 55305
952/933-1611 or 952/476-4042
Email: mhs@minnetonka-history.org Web: www.minnetonka-history.org
Hours: Burwell House by appointment

Richfield Historical Society
P.O. Box 23304, Richfield, MN 55423 (mailing)
6900 Lyndale Avenue South (museum)
612/869-2049
Curator: Richard Lindquist

612/869-4761

Bartholomew House Hours:
2 - 5 p.m. Sun, May thru Labor Day

St. Louis Park Historical Society
3700 Monterey Drive, St. Louis Park, MN 55416 (mailing)
6210 West 37th Street, Jovig Park
Contact: Bill Houston 952/929-9182

Wayzata Historical Society
402 East Lake Street, at the Depot
Wayzata, MN 55391

Western Hennepin County Pioneers Assoc.
Box 332, Long Lake, MN 55356 (mailing)
1953 West Wayzata Boulevard (museum)
952/473-6557

Curator: Mike Ellis
952/473-4534
Hours: Museum, Saturday 10-4; Archives: Saturday 10-1 and by appointment

Contact: Charlotte Stevens
763/544-9119

Independence Town Hall Museum
County Road 90 and T.H. #12
Sundays 2–5 p.m. June-August

Westonka Historical Society
3740 Enchanted Lane
Mound, MN 55364

Other Local Resources

Karen Cooper exhibits a delightful collection of historic stereoscope pictures and other materials from the watershed at: www.urbancreek.com .

APPENDIX

1853 - A Story from Settlement Days

The following excerpt from *Happenings Around Excelsior* (pages 1 and 2) aptly illustrates how closely these pioneers depended upon one another in what was yet a trackless wilderness. This story was compiled from tales related by Robert McGrath himself in later years.

Notes on the characters:

-**George Bertram** founded Excelsior. Bertram had been in Minnesota the previous year. He returned to New York to organize the rest of the Excelsior colonists, sending **Robert McGrath** on ahead.

-**John Stevens** built the first permanent house in Minneapolis in 1850. (See it, now moved to Minnehaha Park.)

-**Simon Stevens**, founder of Minnetonka, was John's brother.

-The **Harringtons** built the first of the many hotels on Lake Minnetonka at Wayzata.

-The **Ft. Ridgely Road** would be the first through the Minnehaha Watershed in 1855.

-**Stephen Hull**, a Universalist preacher who had taken up a claim in February, near the Old Narrows, was the first white settler in Excelsior Township.

May 1, 1853

Robert McGrath arrived in St. Paul by river steamer, ready to search for the proposed town site where he was to build George Bertram's log house. On the steamer he had met a young man named R.C. Wiley, whom he persuaded to take part in the venture.

The two young men found John Stevens at St. Anthony (today's downtown Minneapolis) and, following his directions, walked to the claim and mill site of Simon Stevens (at today's Minnetonka Mills). Simon was to direct them to Mr. Hull, who in turn would show them Bertram's site.

Robert McGrath would be the third settler in Excelsior Township and the first in the Village proper, once he found the man who could guide him to Bertram's chosen site. Starting out from Minnetonka Mills in search of Mr. Hull that day in May, McGrath and Wiley ran into a problem. In McGrath's own words:

"We hired an old batteau to pull ourselves up the creek... and into the lake...but after rowing to different points we failed to find the Hull place... [and] went back to the mills where the Harringtons kept a hotel... In the morning we made a new attempt to go to Excelsior overland [though the roads were little better than Indian trails]."

In their attempt to find Bertram's site via trails through the wilderness, the two men joined a survey crew that was laying out a "military road from Fort Snelling to Fort Ridgely." The crew had a team and offered to haul McGrath's tools and supplies to the point nearest Lake Minnetonka....

The next day the survey crew, with McGrath and Wiley, struggled to reach the southwest end of Christmas Lake, and there they camped. Rain all night, turning to snow in the morning, left members of the expedition drenched and chilled to the bone.

Their only protection had been a big fire, each man's blankets, and a "good-sized keg of whiskey." In their misery, the surveyors returned to St. Anthony, leaving McGrath and Wiley to continue their search for Mr. Hull.

It was a "blind hunt" even when the sun came out. After reaching Lake Minnetonka, the two young men tramped up and down the shore till evening, trying in vain to find the Narrows and Hull's cabin. Weary from the loss of sleep the night before, and from the day's exertions, McGrath made himself a bed beside a log and

“went to sleep while the sun was yet shining, giving little heed to the music of the tree toads and the wild cry of the loons...” Wiley, on the other hand, made his way back to Minnetonka Mills to spend the night. He reappeared in the morning with more specific directions for finding Mr. Hull’s lonely cabin. When, at last, they found the preacher, he “took them directly to the site of the intended village... and fixed upon the location of Mr. Bertram’s house.”

Before starting work on the cabin, McGrath and Wiley built a three-sided lean-to to serve as shelter, storehouse, and sleeping compartment. Then they “set up [their] household goods, consisting of a coffee pot, a cook kettle, frying pan, some coffee, potatoes and flour.” Their kitchen, on the open side, was “all out of doors.”

Description of Pre-emption Process, 1857

A word in regard to the manner of pre-empting lands. All public lands in the Territory must be obtained by pre-emption. The modus operandi is this: A man must seek a quarter section, or 160 acres, that is vacant, file his intention of pre-empting it, in the land office, and then go and build his house upon it and live (there) for ninety days. Not only so, he must fence in and cultivate a certain portion of the land. At the expiration of three months he must appear again at the Land Office with a competent witness and make oath that he has never pre-empted land in the United States before, that he is not the owner of 320 acres of land, that he is pre-empting for his own sole use, and not for speculation. His witness testifies to the same facts, and the land is then paid for at government price, either by a Land Warrant or in cash. But one warrant, however, can be located on a quarter section, and if it is not sufficiently large, the balance is made up in cash. It need not be stated here that wholesale corruptions and perjury are carried on by these pre-emptors. Any one at all acquainted with human nature will readily imagine that this will be the case.

-Letter to the Venango Spectator of Franklin, Pennsylvania, signed by “Viator.” Reprinted in Minnesota History, Summer 1979.