Turtle Creek Watershed District Watershed Management Plan

Prepared for:

Turtle Creek Watershed District

Prepared by:

Mower Soil & Water Conservation District
101 21st St. SE
Austin, MN 55912
(507) 434-2603

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Turtle Creek Watershed District

Managers

Thomas Butler	**Chairman**	85333 310 St Blooming Prairie, MN 55917
Peter Van Erkel	Vice Chairman	27843 825th Ave Hollandale, MN 56045
Norman Johnson, Jr		29587 762nd Ave Clarks Grove, MN 56016
Kenneth Muilenburg	Secretary	201 Amsterdam Ave E Hollandale, MN 56045
Arlen Schamber	Treasurer	200 NW 21st St Austin, MN 55912

Recording Secretary

Nancy Finley		24701 515th Ave Austin, MN 55912

Watershed Attorney

Kurt Deter	Rinke Noonan, Attorneys at Law	Suite 700 PO Box 1497 St Cloud, MN 56302-3500 320-251-6700

Watershed Engineer

Steve Penkava	Jones, Haugh & Smith	515 South Washington Albert Lea, MN 56007 507-373-4876

Freeborn County Ditch Inspector

Phil Tennis		Route 3 Box 35 Hayward, MN 56043-9712

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Executive Summary

The Turtle Creek Watershed District was the 22nd Watershed District established in the state in November of 1968. The District is located in south central Minnesota. The Counties include Freeborn and Mower. The total area is 157 square miles of which the majority of land is cultivated.

The Turtle Creek Watershed District has revised and updated this Watershed Management Plan in accordance with State Statues 103b and 103d and the requirements of Minnesota Rules Chapter 8410. The District has responsibilities under 103B and 103D to assess and manage land and water resources.

In updating their plan, the Managers sought out the public's input through surveys, one on one discussion with landowners and news releases to gather input on concerns and issues they might have. They held informational meetings with local, state and federal government agencies to gather input on their priorities to incorporate in the District's Plan.

The District has developed policy statements and goals as an outcome of the planning the board has done. These goals are organized within the following Four Major Areas of District Involvement.

Watershed Management - Manage the watershed from an effective Watershed Management Plan that addresses goals and that meet the needs of the watershed public.

Water Quality – Encourage and implement practices to improve and protect the quality of surface water in the District.

Water Quantity Management - Effectively manage the flow of floodwaters within the District.

Education- Provide the residents and landowners with information to assure the protection and improvement of the Turtle Creek Watershed.

The overall goal of the Managers is to make the wisest possible use and conservation of the District's water and related resources. The watershed plan is intended to be the guide for accomplishment of this goal.

Part I.

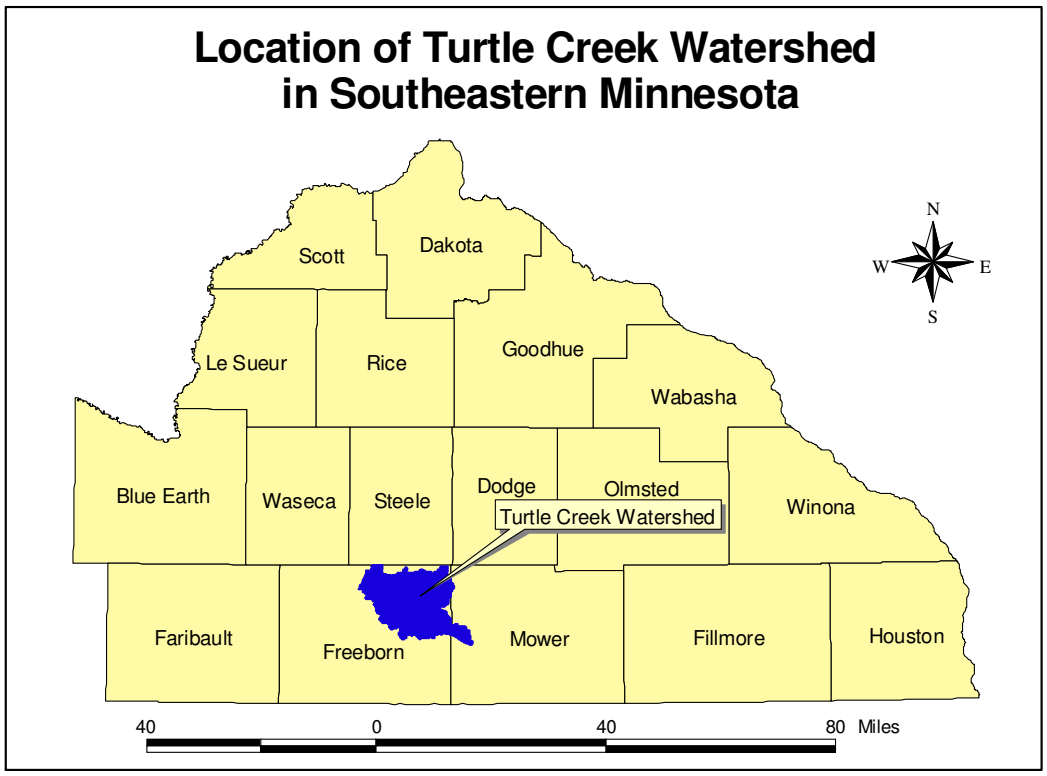
Section 1
Introduction

A. Watersheds, Watershed Districts, and Overall Plans

A watershed is the area within the geographic boundaries of land that drains into a surface water feature such as a stream, river, or lake and contributes to the recharge of groundwater. Watersheds are divided by areas of higher elevation that cause the drainage patterns of surface water within the watershed.

There are 81 major watersheds in Minnesota, some which overlap into adjoining states. Together these watersheds make up the State's drainage basins. The Turtle Creek Watershed is located in south central Minnesota, and is a part of the Cedar River Watershed. MAP 1 illustrates the location of the Turtle Creek Watershed with respect to the Lower Mississippi River Basin.

Map 1



Because water is continually moving, it is a resource that tends to be more difficult to manage on the basis of linear political boundaries. Municipal and county lines, based on the rectangular grid of original government surveys, are not often well suited for the management of water resources.

In 1955, the Minnesota legislature passed the Watershed Act in order to better address water related issues and concerns occurring within the state at the watershed level. Watershed Districts are special purpose units of local government that have been created to help prevent and solve water resource problems on a watershed basis. The boundaries of a watershed district generally follow the hydrologic or topographical limits of an area or region. Most often watersheds are named for the major surface water resource within the watershed.

The Turtle Creek Watershed District is one of 45 watershed districts that have been created in the State of Minnesota since 1955.

Today, Chapter 103D of the Minnesota State Statues, (the "Watershed Law") sets the framework within which districts can exercise their authority to manage and protect the water resources. Under the watershed law, districts must prepare a watershed management plan or "Overall Plan" every 10 years to outline their goals and objectives and to define resource management programs of the district. The watershed law also requires that districts, as a part of their plan, inventory resources, assess issues, and develop policies and strategies based on the conditions and needs of the watershed.

The goal of watershed and planning and implementation is to coordinate land and water resource management and to implement land and water resource management programs on a watershed basis. Management programs must balance the needs with local, social, economic and political considerations of the region.

B. The Turtle Creek River Watershed District Planning and Implementation Process

With growing demand for the use of water and land in the watershed and limited public funds to address conflicts that arise, a planning process needs the emphasize better use of the resources we have. It must show how it can make a difference. How does all of this work?

Watershed planning is a management tool that will help watershed districts, local and state governments, and a district's constituents focus their collective efforts to guide the wise use of water and land resources. Planning is a continuous process that encourages collaborative thinking to logically approach resource management issues.

The watershed planning process includes: 1) gathering input from citizens; 2) assessing the district's resources; 3) building policies and rules based on public concerns; 4) prioritizing specific actions to be taken to properly manage the resources. A thorough planning process combined with coordinated implementation efforts can help private parties and public agencies protect and enhance the resources of their communities.

C. Public Input – Overview from the Public Participation Process

Minnesota Statue 103D outlines Watershed District responsibilities and authorities. It states the general purpose of Watershed Districts to be: "To conserve the natural resources of the state by land use planning, flood control, and other conservation projects by pursing sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources. The establishment of watershed districts is authorized under this chapter."

Key issues for the District were identified from sources including surveys, partner meetings, public hearings, existing water management plans for Freeborn and Mower Counties and the Basin Alliance for the Lower Mississippi Scoping Document.

A survey was mailed to the 85 residents in the watershed. The survey was published in the Albert Lea, Austin and Blooming Prairie papers and also broadcast on local radio stations. In addition, board members talked one on one with residents to get additional input.

The District's survey provided the public with background information on the District and the importance of public feedback when revising the watershed management plan. It asked about services they have received from the District, what residents see as future problems, challenges and opportunities for the watershed and advice on future priorities. Key issues that came out in the survey included: (A summary of the Turtle Creek Watershed survey is located in Appendix A)

- Flooding concerns and controlling the flow of water
- Erosion control
- The importance of wetland restorations
- The value of buffers and filterstrips

A partner meeting was held for local, state and federal agencies and organizations that work with the District. In attendance included; NRCS, SWCD's, City of Austin, DOT, Board of Water and Soil Resources, DNR, MPCA, and Jones and Haugh Engineering firm. The following key issues came out of that meeting:

- Management of Geneva Lake
- The need for baseline data for water quality data in watershed.
- The need for the watershed rules to be updated.
- Capitalize on Wetland Restoration funding programs
- Work close with local governments (water planning & SWCD) for program implementation
- Increased education and communication with watershed residents.

Identification of New Issues

New issues as they arise can be addresses through a general Plan amendment process or as a part of the next revision.

Section 2
Drainage History of Turtle Creek Watershed

1900-1930
At the time of settlement of the land in northwestern Freeborn County in the mid 1850's, Turtle Creek was a small winding creek, which, for ages, had taken the over flow water from Geneva and Rice Lakes.

The Albert Lea Farms Company reported in one of their land promotional publications in l907, that an owner of a large part of swampland (Rice Lake) planned to construct a ditch. Some construction occurred, but because of opposition, it was never completed as designed. This drain way removed all but 2 to 10 inches of surface water from Rice Lake.

In 1918, Mr. George H. Payne, land colonizer from a land development company located in Omaha, became interested in the modified Rice Lake land area. After months of investigation into the productivity of the soils and the availability of an adequate outlet, the Albert Lea Farms Company was organized. In the spring of 1919, this company purchased 15,000 acres, located in the vicinity of the City of Hollandale (an area approximately 3 miles wide by 7 miles).

The company secured the drainage engineering services from Illinois, Nebraska and also J.H. Seversen of Albert Lea. In 1920, a drain way was laid over the site of the 1907 drain way and was nearly four times as large. This project greatly improved the drainage of the upper reaches of their land tract. In succeeding years, drain ways were constructed using a Buckeye caterpillar-type ditcher, a machine able to travel through water, dig a ditch and move soil laterally to a spoil bank. The company dug 150 miles of these drain-ways with this machine. There was a drain way for each quarter mile and connected to the main outlet. Laterals running in all directions under the lands were connected with the branches, so that every part of the 15,000-acre tract was provided with drainage.

Drain ways were 12 feet wide at the top and 7 feet deep. Later, as the open drains lowered the water table in the peat soil, large tiles were laid in the bottom of the drain ways and the ditches refilled. Upon completion of this task, the spoil banks were leveled down and made the bases for the roads, which were to follow. The company stated it spent $750,000 in drainage costs alone.

Upon removing the water from the peat surface, the land was turned over with twenty-six inch breaking plows. Then it was necessary to roll the land with huge concrete rollers followed later by disks and harrows. After two years of preparation, the land was planted to potatoes, onions, celery, cabbage and carrots. To market the abundant production, the Hollandale Marketing Association was formed in 1924.

Because of the large tonnage of production per farm and the cost of transporting products from the field to the City of Clarks Grove, development leaders sought a railroad line to the Village of Hollandale. On September 4, 1926, there was a celebration in Hollandale of the joint line built by Chicago, Rock Island and Pacific Railroad and by the Chicago, Milwaukee, and St. Paul Railroad. The average farm size in the mid 1920's in the Hollandale Community was 23 acres.

In early history of Freeborn County, Franklyn Curtis Wedge wrote that Judicial Ditch number 1 drains Rice Lake into Turtle Creek passing through Geneva, Riceland, Newry, and Moscow townships. JD #1 is thirty-three miles long and cost $152,438.36 to build. 1,739,779 cubic yards of earth were removed with the construction of this ditch. 16,124 acres were benefited, totaling $417,227.00.

Soil Resources Protection

So, by the beginning of the Twentieth Century, the land area of Turtle Creek Watershed was mostly in the hands of landowners living on small farms. Shortly after the end of WW I, prices for agricultural products fell and times were difficult. This economic situation continued because of a general worldwide depression, which began in October of 1929.

Next, the natural resources were subjected to stress by drought. By the early 1930's, drought affected most of the prairie land east of the Rocky Mountains to the Ohio River Valley. Because of the lack of vegetative cover, the soil surface, subjected to strong winds, lost soil particles that were removed from the soil surface into the air. Swamps and sloughs dried up and water levels of lakes were lowered. Habitat for migratory birds and feed for other animals decreased.

As a result of the dust storms from the prairies, which traveled eastward across the east coast and out over the Atlantic Ocean, the federal government, in the mid 1930's, instituted a program to protect the nation's soil resources. The administration of this new program was assigned to the Soil Conservation Service, located within the U.S. Department of Agriculture. The new law called for a working partnership with the state and a local unit of government organized to cooperate with landowners.

In 1937, the Minnesota Legislature passed its soil conservation law (Chapter 40), which encouraged the formation of soil conservation districts, governed by local farmers to assist landowners in installing soil conservation practices.

The dust storms of the prairie, which were visible to the residents of the county and the watershed in the early 1930's, were caused by strong winds lifting soil particles into the air and transporting them to downwind locations. In addition, 70 to 80 years of cu1tivation had subject the soil to erosion by both water and wind. No educational or technical information about soils was provided to farmers in the early decades of the 1900's. By the 1930's some farmers here and there in Freeborn County had began to notice yellow clay spots in their fields. These spots were the subsoil that had been exposed by the loss of topsoil due to wind and water erosion since the beginning of cultivation.

The organization of soil conservation districts began in southeastern Minnesota, where the land is more hilly and rolling than in other parts of the state. Soil erosion problems were more visible and acute in this area and it is an area where CCC camps demonstrated the success of conservation practices to control the forces of wind and water in eroding the land surface. The first districts were organized in 1938 and 1939, however, this activity slowed down during WW II –1940 to 1946.

In early 1948, a petition signed by local landowners in 16 of the 20 townships in Freeborn County sought the establishment of a soil conservation district. The townships of Geneva, Newry, and Riceland in northeast Freeborn County and Shell Rock Township were not included in the original petition. On March 22, 1948, a hearing on the petition was conducted by an official of the State Soil Committee, at which time; testimony was received from petitioners on the need for the District. Problems cited at this hearing were: light soils subject to wind erosion; the need for drainage on flat land; exposure of yellow clay spots caused by erosion over time on rolling land; the need for contour strips on rolling land; eroded soil being deposited-in channels; existence of inoperative drainage systems, because of poor engineering; siltation of lakes; the presence of gullies and the importance of wood lots.

On April 20, 1948, a referendum was held on the establishment of the Freeborn County Soil Conservation District. The vote was favorable for the district. On May 8, 1948, the Secretary of State of Minnesota issued a certificate of organization for a Soil Conservation District in Freeborn County, which included the territory of 16 townships. In February 1951, three years after the formation of the Freeborn Soil Conservation District, the townships of Geneva, Newry, Riceland, and Shell Rock were included in the territory of the district.

Since 1949, the Freeborn County Soil & Water Conservation District Supervisors have had a program for cooperation with individual landowners and with groups of landowners providing advice and technical assistance, to reduce the damaging effects of soil erosion by wind and water on the soil resources of the county.

Today, the Soil & Water Conservation District continues to assist landowners with; soil fertility questions, drainage needs, means to reduce effects of wind erosion, controlling pollution of surface and ground water, the proper use of agriculture chemicals, and other means to protect the soil and water resources of the county and of the Turtle Creek Watershed.

Water Resource Management.

The management of soil resources in the watershed was an effort of a local-state-federal system of cooperation and technical assistance to assist a landowner in applying conservation practices to his soil to keep it in place. With proper soil conservation practices installed on the land, light and moderate amounts of rainfall falling upon the owner's land usually is retained by the soil. A minimum amount of runoff might occur under these circumstances.

Though soil is in place and generally not considered mobile, water, on the other hand, in the fluid stage, is mobile and is acted upon by gravity and the gradient of the land. Therefore, water not absorbed on the surface of the soil, flows away seeking a lower elevation and taking soil with it.

Water, which falls upon the land surface and does not enter into the soil, begins to accumulate and flow along the gradient of the land. Over the surface of a medium sized watershed, water on the land surface flows into the upper watershed watercourses, thence down slope into major watercourses. If rain falls continuously over a long period of time or if a storm releases a large amount of rain in a

short period of time, over a watershed surface, floods will occur. This is water flowing over the normal bank of the stream on to the adjacent flood plain, if any, and thence spreading further away from the main channel onto contiguous land.

The solution to flood problems in agricultural area goes beyond the capability and responsibility of one operator of land. Floodwaters are a community wide problem and require cooperation of all landowners in order to reduce damages.

In 1954, Congress passed PL-566, a program to assist landowners in the improvement, development, protection and management of water and related land resources of watersheds up to 250,000 acres in size.

Following a severe storm in the community of Turtle Creek in the summer of 1962, local leaders undertook a program to find a solution to the flooding of their valuable agricultural land and crops. Leaders, aware of the flood prevention and protection features of PL-566, administered by the Soil Conservation Service of the USDA, met with Freeborn and Mower County Officials to seek their assistance in utilizing the PL-566 program.

In April of 1965, the Freeborn and Mower Boards of Commissioners and the Freeborn and Mower Soil and Water Conservation District Supervisors submitted a PL-566 application for Turtle Creek Watershed to the Minnesota Soil Conservation Commission. In July of 1965, the State Commission approved the application. The application was placed on a list of approved applications from throughout the state. It had to wait for a priority for planning which was performed by a watershed planning party at the headquarters of the Minnesota SCS office.

In 1955, the Minnesota Legislature passed the Minnesota Watershed Act, Chapter 112, which provided for the establishment of a government unit being that of the territory of the watershed, not withstanding the local political boundary lines.

There upon, in order for the local people to provide the necessary local cooperation with an agency of the federal government and to approach the matter of solving overall water problems in the Turtle Creek watershed, a petition for the establishment of a Watershed District was filed with the Minnesota Water Resources Board on March 28, 1968.

The petition was validated by an appropriate number of signatures of landowners living in the watershed. The Board held a public hearing on the petition on August 21, 1968, in the gymnasium of the Hollandale Central School in Hollandale. On the 14th day of November 1968, the Board issued its Findings of Fact, Conclusions of Law and Order establishing the Watershed District, giving it a name, defining its boundary, naming the first five managers, and selecting the City of Hollandale as its place of business.

Subsequently, as required by the Watershed Act, the managers wrote and adopted an Overall Plan for any or all the purposes for which a District may be established. The Overall Plan is composed of existing water and water related problems, possible solutions thereto, and the general objectives of the district.

The Board held a hearing on the adopted Overall Plan of the Managers on June 17, 1970 in the Banfield School Gymnasium in the City of Austin. By its order dated August 28, 1970, the Board prescribed the first Overall Plan for the Turtle Creek Watershed District.

Section 3
Completed Projects

On going maintenance of the drainage system along with redetermination updates have occurred since the watershed plan was revised. The Board of Managers approve on an average of 60 to 75 permits annually. The Board has also made brush control a priority in the system. They have been diligent in removing brush from the ditches in the watershed over the last few years.

The largest project that was completed was an improvement of Joint County Ditch #24. According to the engineer's report, construction consisted of restoring the ditch to its established base width of 50 feet. The project restored the drainage to low-lying lands envisioned in the 1948 JD #24 proceedings. The engineer's report estimated the project at $1,345,000.00 for construction only.

On November 16, 1999, the Turtle Creek Watershed District Board adopted and filed with the secretary the Findings of Fact and Order establishing the grass strip along the remaining JD #24 system. The Ditch Authority paid $198,555 at a rate of $1500 per acre for 132.37 acres of grass strip right-of-way. Area farmers were encouraged, prior to this action, to sign-up for the CRP filterstrip program. Again, this sign-up was required before the Board established the grass right-of-way. In this way farmers would have an established row crop history to the edge of the ditch for CRP rental payments. After the CRP sign-up, they could qualify for easement payments for maintaining the grass strip right-of-way. The ditch authority would then have the additional benefits of wider grass and filter strips required by the CRP program. This would allow for reduced future ditch maintenance costs, improved long term water quality benefits and additional payments to farmers for wider bufferstrips. Many farmers along the JD #24 system took advantage of this option for additional filter strip and grass strip payments.

According to the Freeborn County Auditor, the entire JD #24 construction project, along with the purchase of the strip along side the ditch, cost a total of $1,350,000.00, which was less than budgeted.

Section 4
Turtle Creek Watershed District Rules

The Board of Managers, in 2003, drafted and adopted new rules. Their purpose is intended to effectuate the purposes of the District and the powers of the Managers under the Minnesota Watershed Act, Minnesota Statutes, Chapter 112.

The last set of rules were drafted and approved in 1984. Those rules were effective in managing the watershed at that time. With new regulations relating to wetlands and land use, it was essential that the Managers draft and approve new rules.

The new rules lay out procedures step by step for permitting. Landowners know what the expectations are of the Board and what responsibilities they have as property owners. The rules also address upstream and downstream landowners by requiring the permittee to acquire written permission from them for drainage projects and/or impoundments.

Water Quantity as well as quality has always been a priority of the Managers. With this priority, the managers are requesting to Counties, Municipalities as well as Townships to review and comment on all plats and work plans that are a part of the Watershed District..

Section 5
Description of the District

A. Location and Size

The watershed of Turtle Creek is located in South Central Minnesota. The major portion lies in the northeastern quarter of Freeborn County with a small portion in western Mower County adjacent to the territory of the City of Austin.

Turtle Creek is a tributary to the Cedar River, which drains the watershed and flows south into Iowa and thence southeasterly to the Mississippi river.

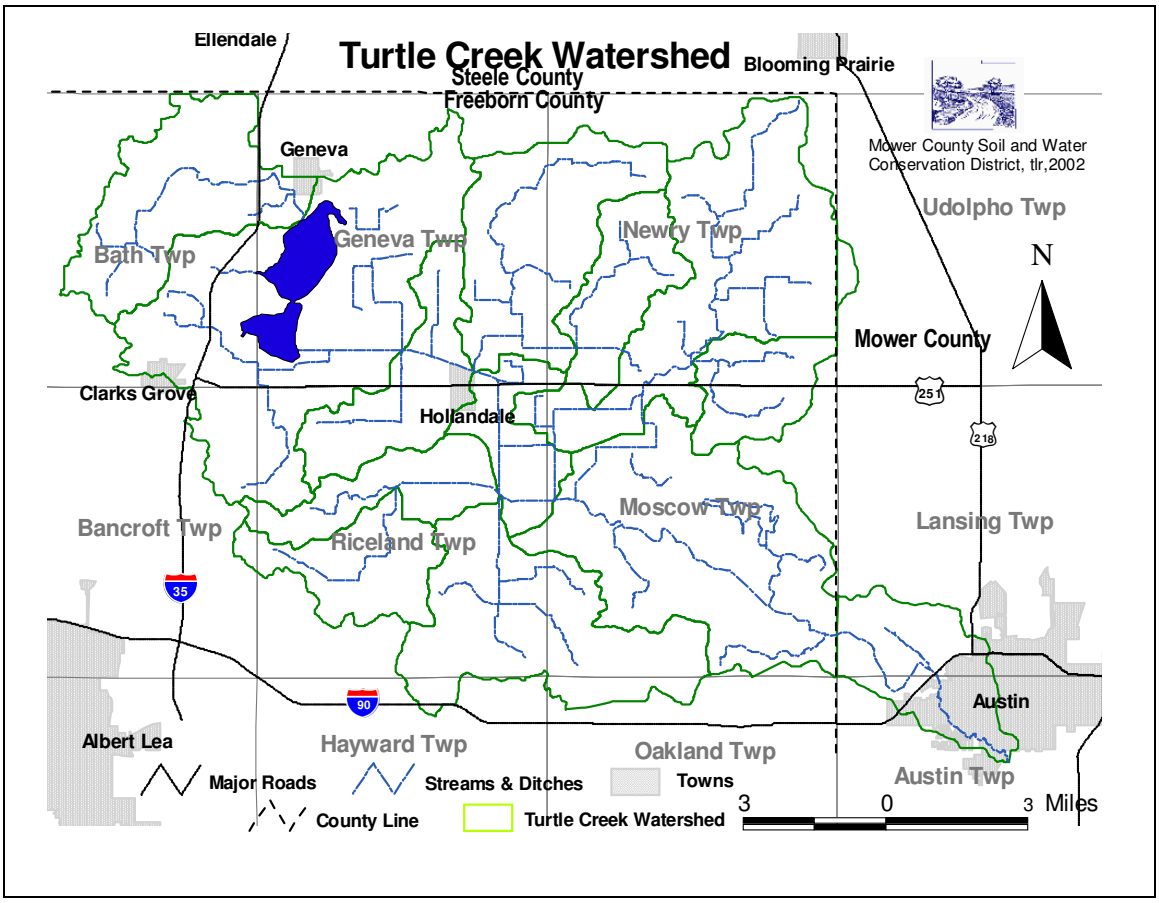
Table 1
Land Area

Freeborn County	***Mower County***	***Total Area***
94,720 acres	5760 acres	100,480 acres
148 square miles	9 square miles	157 square miles

Appearing as a boxy rectangle, its width north to south is about 13 miles and its length east to west is about 20 miles.

The territory of the Turtle Creek Watershed District is situated in part or all of Bath, Bancroft, Geneva, Riceland, Hayward, Newry, Moscow, and Oakland Townships in Freeborn; and in parts of Austin, Lansing, and Udolpho Townships and the City of Austin in Mower County.

Map 2



In the northeast part of the watershed landowners successfully petitioned out a number of acres. This map does not reflect that petition.

B. Geology

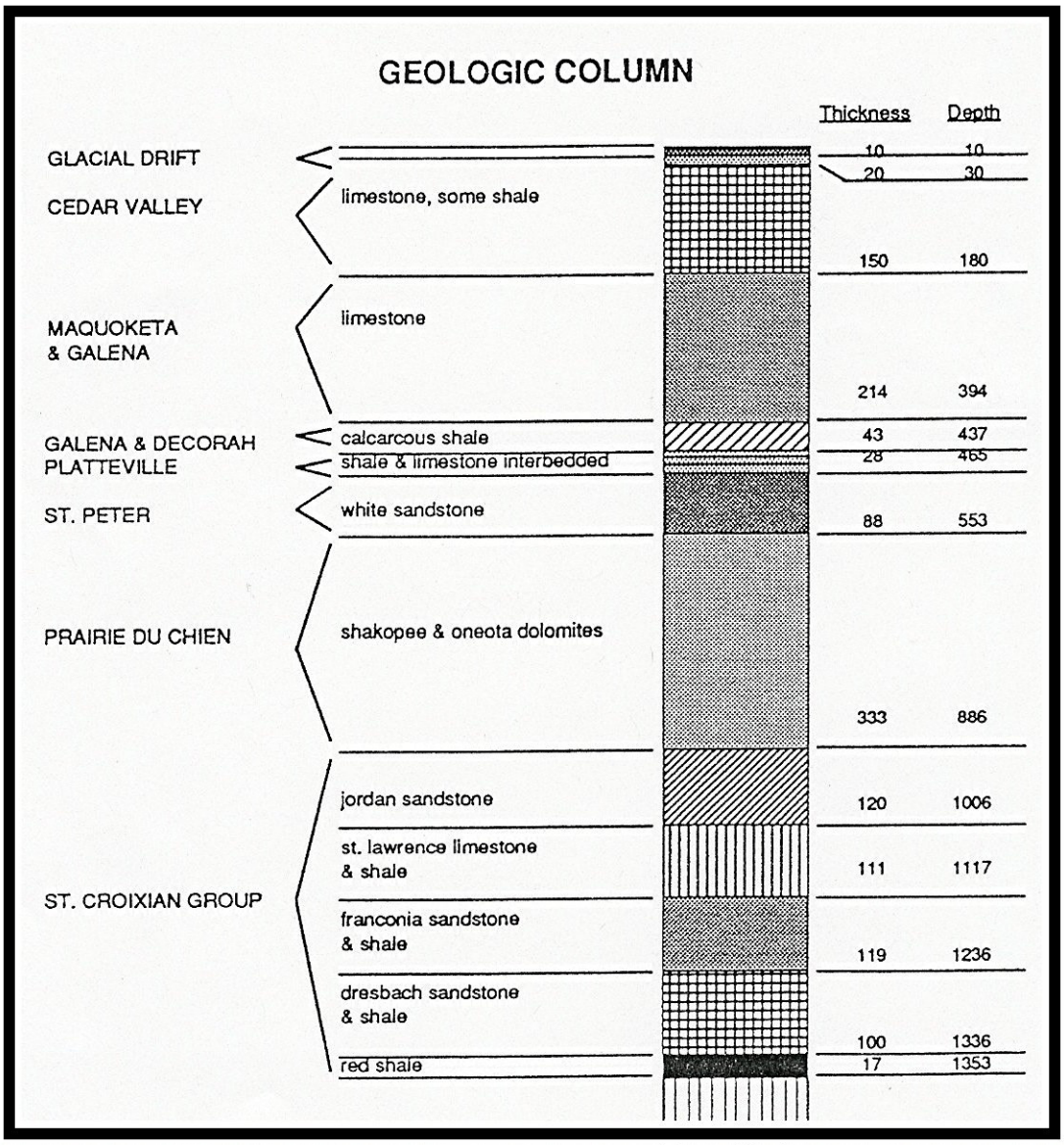
The information on geology for the watershed was taken from the Freeborn County Water Plan. The plan describes the geology of the Cedar River Watershed, including Turtle Creek. The primary source of drinking water beneath the Cedar River Watershed is the Cedar Valley-Maquoketa-Gelena aquifer system. In the northerly part of the watershed, the Cedar Valley bedrock has eroded leaving Maquoketa bedrock as the upper most group of the aquifer system. In Geneva Township, the Maquoketa bedrock has also eroded, exposing the Galena Group. The Galena bedrock formation lies under the surficial drift, running the northwest to the southeast edge of the township and then into the southern half of Newry Township. The System has a general hydrologic gradient from northwest to southeast. This is consistent with the Hollandale Embayment.

The Cedar Valley-Maquoketa-Galena aquifer system is covered with unconsolidated surficial deposits, chiefly glacial drift, alluvial silts, sands, and gravel commonly present along streams. This glacial till generally ranges from 100 to 200 feet thick.

Beneath the surficial deposit of till, the Cedar Valley-Maquoketa-Galena aquifer system can extend to thickness of almost 700 feet. The Decorah Formation, a shale confining layer, separates the Cedar Valley-Maquoketa-Galena system from the underlying St. Peter-Priairie Du Chien-Jordan aquifer system. Still deeper are the Franconia-Ironton-Galesville aquifer system and the Mt. Simon-Hinckley Aquifer system. Each aquifer system is separated from the system above it by a confining layer, generally of shales or rocks of low permeability.

The Geological Sensitive Area Map indicates this watershed may be located on the landscape as Very High Sensitivity, with 0 to 10 feet of confining sediment to areas of Moderately High Sensitivity with confining sediment 40 to 50 feet deep.

Diagram 1



Source: Mower County Comprehensive Plan

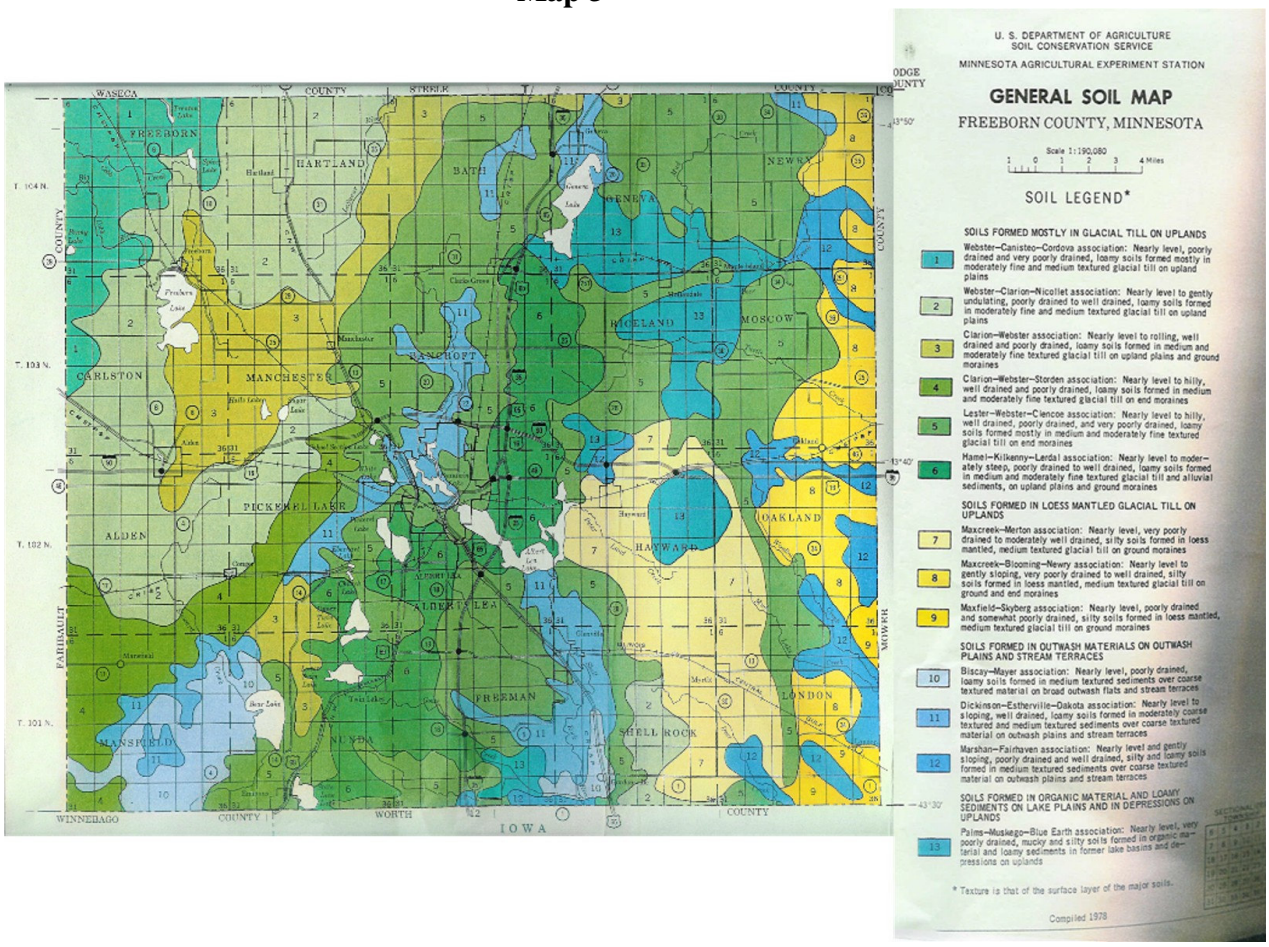
C. **Topography**

According to a Division of Waters, DNR reports the highest ground elevation in the District is 1370 feet above sea level. This high ground is found on the western boundary. The lowest elevation at 1170 feet above sea level is found at the confluence of Turtle creek and the Cedar River at the southeastern corner of the District. The gradient of the creek is flat. Its fall is about 19 feet in 20 miles from one mile east of Lake Geneva to Highway 105 at Austin. Turtle Creek's Judicial Ditch number 24 is in a comparatively narrow-deep valley from its mouth to a point on the creek about 11 miles upstream. In the remaining 9 miles upstream to Lake Geneva, the creek passes through a flat area, believed to be the bed of an ancient lake, this includes the bed of a meandered lake drained in about 1910. The lake plain is surrounded by more steeply sloping ground extending out to the watershed divide. Except near the mouth of Turtle Creek and north and northeast of Lake Geneva, the divide is at elevations more than

40 feet higher than the flat area. North of Lake Geneva, the divide is from 10 to 20 feet higher than the lake and from 20 to 30 feet higher than the flat area.

The center part of the watershed is flat and has no appreciable relief. The perimeter of the watershed has a low to moderate relief and drains towards the center area and the creek.

Map 3



D. Soils

The soil survey for Freeborn County is being updated during the time this update is written. The following soils information was taken from the Freeborn County Comprehensive Water Plan in the Cedar River Watershed section. The predominate soils of the Cedar River Watershed, which Turtle Creek is a part of, are a mix that were formed in glacial till on uplands, the Lester-Webster-Glenco association, and soils that were formed in the outwash materials on outwash plains and river terraces, the Palms-Muskego-Blue association.

Lester-Webster-Glencoe Association. This is a nearly level to hilly, well-drained, poorly drained and very poorly drained loamy sells formed mostly in medium and moderately fine textured glacial till on end moraines.

- Landscape –

  The landscape has a slightly irregular configuration and is one of hills and knolls, broad flats, drainage-ways, and depressions. Some hills are circular. Slopes are relatively short on the hills and knolls. Differences in elevation between the hills and depressions range mainly from 15 to 40 feet, but a few hills are 80 to 100 feet above the depressions. The natural drainage pattern is poorly developed.

- Uses -
  It is used for row crops. Corn, soybeans and alfalfa are the principal crops.
- Limitations –
  The hazard of erosion is the dominant concern on the lester soils, and wetness limits use on the Webster and Glencoe soils. Some areas do not have adequate outlets for drainage.

Palms-Muskego-Blue Earth Association: This is a nearly level, very poorly drained, muck and silty soils formed in organic material and loamy sediments in former lake basins and depressions on uplands.

- Landscape –
  The basins and depressions filled with mineral sediments. Later, in most places organic material accumulated over the sediments.
- Uses –
  This association is used extensively for truck crops and row corps commonly grown in the Watershed.
- Limitations –
  Wetness and flooding are major limitations. The area is known as unique for its truck crops.

  The southerly and easterly areas were formed in loess mantled glacial till on uplands. The predominate soils are the Maxcreek-Blooming-Newry and the Maxfield-Skyberg association. Drainage and depressional patterns flowing to the southeast consist of soils formed in the outwash materials on outwash plains and river terraces of the Marshan-Fairhaven association.

Maxcreek-Blooming-Newry Association
This is nearly level to gently sloping, very poorly drained to well drained silty sells formed in loess mantled, medium textured glacial till on ground and end moraines.

- Landscape -
  The landscape is one of broad flats, depressions and drainage ways, and slight rises and knolls. The configuration is generally than in other part of the area and differences in elevation between the flats and slight rises and knolls range from 5 to 15 feet.
- Uses -
  This association is used intensively for row crops that include corn, beans and some alfalfa.
- Limitations –
  The major limitation for use is the wetness of the Maxcreek soil, but most areas have been drained. Management needs also include control of erosion and maintenance of tilth.

Maxfield-Skybert Association -
This is a nearly level poorly drained and somewhat poorly drained, silty soils formed in loess manteld, medium textured glacial till on ground moraines.

- Landscape -
  The landscape is one of broad flats, drainage-ways and swales, and slight rises. The configuration is generally smoother than in other parts of the survey area, and differences in elevation between the broad flats and slight rises and the

drainage ways and swales range from 5 to 15 feet. The drainage pattern is generally well developed.

- Uses –
  This is used for row crops and hay. Corn, soybeans and some hay are the principal crops.
- Limitations –
  The major limitations to use are wetness.

E. Climate

Information taken from the Mower County Soil Survey, Prepared by the National Climatic Data Center, Asheville, North Carolina

The total precipitation was 31.6 inches as shown on Table 2. Of this, 23 inches, or 70 percent, usually falls in April through September, which is the growing season for most crops. In 2 years out of 10 the rainfall in April through September is less than 18 years.

Average seasonal snowfall is 52 inches with an average of 35 days, where at least 1 inch of snow is on the ground. The average relative humidity in mid-afternoon is about 65%. The sun shines 65% of the time in the summer and 40% in the winter.

Table 2
TEMPERATURE AND PRECIPITATION
(Recorded from 1951-1980 at Grand Meadow, MN)

	TEMPERATURE						PRECIPITATION				
MONTH	AVERAGE DAILY MAX	AVERAGE DAILY MIN	AVERAGE	2 YEARS IN 10 WILL MAX<	2 YEARS IN 10 HAVE MIN>	AVERAGE # OF GROWING DEGREE DAYS*	AVERAGE	2 YEARS IN 10 LESS THAN	2 YEARS IN 10 MORE THAN	AVERAGE # OF DAYS 0.10 IN OR MORE	AVERAGE SNOW-FALL
	° F	° F	° F	° F	° F	Units	Inches	Inches	Inches		Inches
JAN	20	1.1	10.6	42	-27	0	0.95	0.29	1.48	3	13.10
FEB	26	6.4	16.2	46	-21	0	0.87	0.25	1.37	3	9.40
MAR	36.1	18.1	27.1	64	-11	0	2.08	0.93	3.05	5	11.80
APR	53.7	34	43.9	84	13	35	2.77	1.60	3.81	7	7.90
MAY	67.5	45.7	56.6	88	27	242	4.14	2.62	5.51	8	0.00
JUN	76.6	55.6	66.1	93	41	483	4.61	2.67	6.32	8	0.00
JUL	81	59.8	70.4	95	46	632	4.1	1.80	6.05	7	0.00
AUG	78.8	57	67.9	92	42	555	4.07	1.39	6.27	7	0.00
SEP	70.2	47.9	59.1	89	30	278	3.27	1.17	5.01	6	0.00
OCT	59.3	37.4	48.4	85	19	104	2.24	0.72	3.48	4	0.30
NOV	41.5	23.6	32.6	68	-5	0	1.51	0.36	2.42	4	4.40
DEC	26.7	10.2	18.5	53	-20	0	0.99	0.38	1.49	3	9.80
YEARLY:											
Average	53.1	33.1	43.1	-	-	-	-	-	-	-	-
Extreme	-	-	-	96	-28	-	-	-	-	-	-
Total	-	-	-	-	-	2,329	31.60	24.98	37.6	65	51.7

* A growing degree-day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Source: Soil Survey of Mower county, MN, USDA, SCS.

TABLE 3
FREEZE DATES IN SPRING AND FALL
(Recorded from 1951-1980 at Grand Meadow, MN)

PROBABILITY	TEMPERATURE		
	24° F or >	28° F or >	32° F or >
1 year in 10 later than--	Apr 25	May 5	May 20
2 years in 10 later than--	Apr 20	Apr 30	May 15
5 years in 10 later than--	Apr 10	Apr 21	May 6
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct 15	Sep 29	Sep 22
2 years in 10 earlier than--	Oct 19	Oct 4	Sep 27
5 years in 10 earlier than--	Oct 29	Oct 13	Oct 6

TABLE 4
GROWING SEASON
(Recorded from 1951 – 1980 at Grand Meadow, MN)

PROBABILITY	DAILY MINIMUM TEMPERATURE DURING GROWING SEASON		
	<24° F	<28° F	<32° F
	Days	Days	Days
9 years in 10	180	154	132
8 years in 10	187	161	139
5 years in 10	201	175	153
2 years in 10	214	188	166
1 year in 10	221	195	173

F. Population

It is not possible to accurately determine the present population within the area of the District because the boundary of the District does no conform to boundaries of political governments such as townships and cities. The latter units are used by the census bureau to record population counts. Population of townships and cities partially or as a whole within the District are present in Table 5.

Table 5

Population of Affected Municipalities

Municipality & Townships	Population By Decades				
Freeborn	**1960**	**1970**	**1980**	**1990**	**2000**
Bath Township	754	654	603	484	479
Clarks Grove	353	480	620	675	734
Bancroft Twp	1452	1392	1395	1086	1065
Geneva Twp	763	609	574	481	439
Geneva City	347	358	417	444	449
Hollandale City	363	287	290	289	292
Riceland Twp	877	695	577	495	489
Hayward Twp	649	638	491	459	438
Newry Twp	787	596	601	510	500
Moscow Twp	940	823	661	619	605
Oakland Twp	582	540	490	426	430
Total	7867	7072	6719	5968	5920
Change	-795	-353	-751	-48	
Mower County					
Udolpho	595	577	535	487	458
Lansing	2101	1828	1558	1270	1292
Austin Twp	3052	2777	2386	1760	1396
Austin City	27,908	25,074	23,020	21,926	23,314
Mower Total	33,656	30,256	27,499	25,433	26,460
Watershed Total	41,523	37,328	34,218	31,411	32,380
Change	-4,195	-3,110	-2,807	+969	

Since no township is entirely within the boundary, and some of the municipalities listed are only partially within the boundary, the population of the District is less than any total figure in the above table.

G. Land Use

Most of the land in the District is devoted to agricultural crop and livestock production.

The central, low, flat, portion produces corn, soybeans, sugar beets, potatoes, onions, carrots and other garden truck crops. The remaining land in the District supports cash corn and soybean crops with limited livestock production.

The City of Hollandale is within the District; parts of the cities of Geneva and Clarks Grove, all in Freeborn County. The unincorporated communities of Oakland, Maple Island, Newry, Lerdal and Moscow are also located within or near the boundary of the District, all in Freeborn County. Part of the Western territory of the City of Austin in Mower County is situated within the District. This area in Austin is residential in nature. Outside the city limits of Austin, land use in Mower County in the District is primarily for agricultural purposes. There is growth in the rural areas west of the City of Austin. Several areas have been platted and developed. There is no large forested land within the District except for farmstead tree plantings and scattered groves.

The area is well served by a good network of township and county roads supplemented by a few state highways. Interstate 35 crosses the upper reaches of the watershed from North to South just West of Lake Geneva. Interstate 90 from the east crosses over Turtle Creek just northwest of the City of Austin and proceeds westerly, just south of the southern boundary of

the District. Just west of Freeway 35, is a railroad system from the Twin Cities to Albert Lea southerly. Another railroad crosses the lower end of the District above the City of Austin and proceeds westward along the southerly boundary of the District to the City of Albert Lea and west.

Energy and telephone lines located along most roads, adequately serve the residents of the District. Some of the telephone lines are buried.

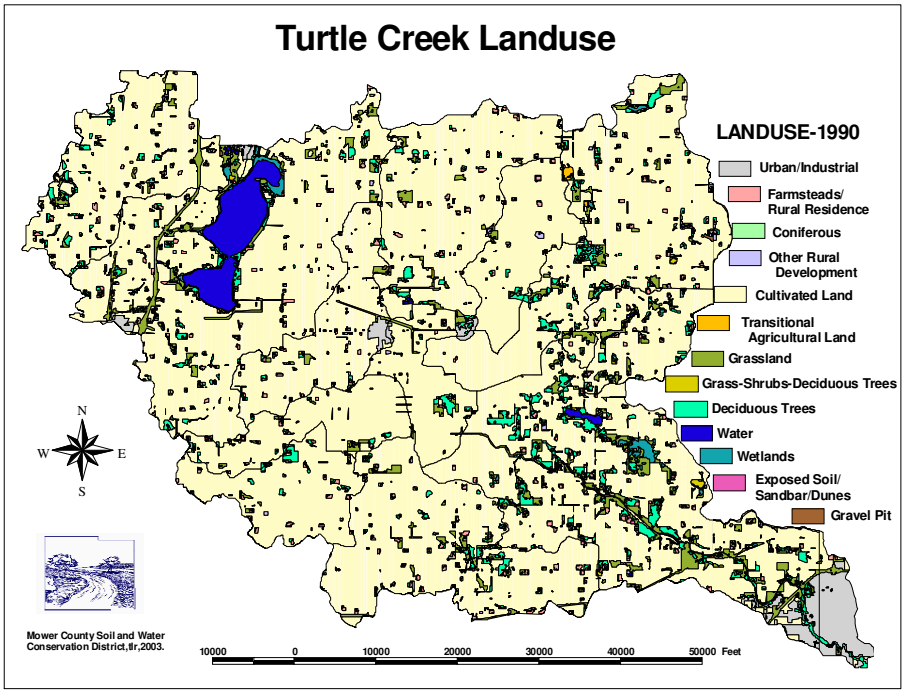
There are a few bodies of water within the District. Geneva Lake, the source of Turtle Creek, lies in the western end of the District. The surface area of this meandered lake is 1944 acres. The Lake has little depth because of siltation and is usable for most lake recreation purposes. The outlet to Turtle Creek is controlled by a dam.

On March 5, 1945, after a public hearing, the Commissioner of DNR established 1211.1 feet above sea level, National Geodetic vertical datum-1929 datum, as the Natural ordinary high water elevation of Geneva Lake. The supervision of the operation of the dam resides with the Freeborn County Commissioners.

Early in the 20th century Rice Lake and Oak Lake, both meandered lakes, were drained. Newry Lake, located in the northeast corner of Newry Township, was about 38 acres in size. It is now a marshy area with limited open space for water.

There were, at the time of settlement, low wet areas within the District. By the 1930's many of these sites were drained and are now used for agricultural purposes. In recent times, the State acquired a 253 acre Wildlife area in Moscow Township, identified as the Cerex WMA. There are some remaining small areas of wetland. Rules of the District provide supervision of proposed drainage actions. The manager's efforts are directed at conserving remaining wetlands.

Map 4



Section 6
Water Resources

A. Major Sub watersheds

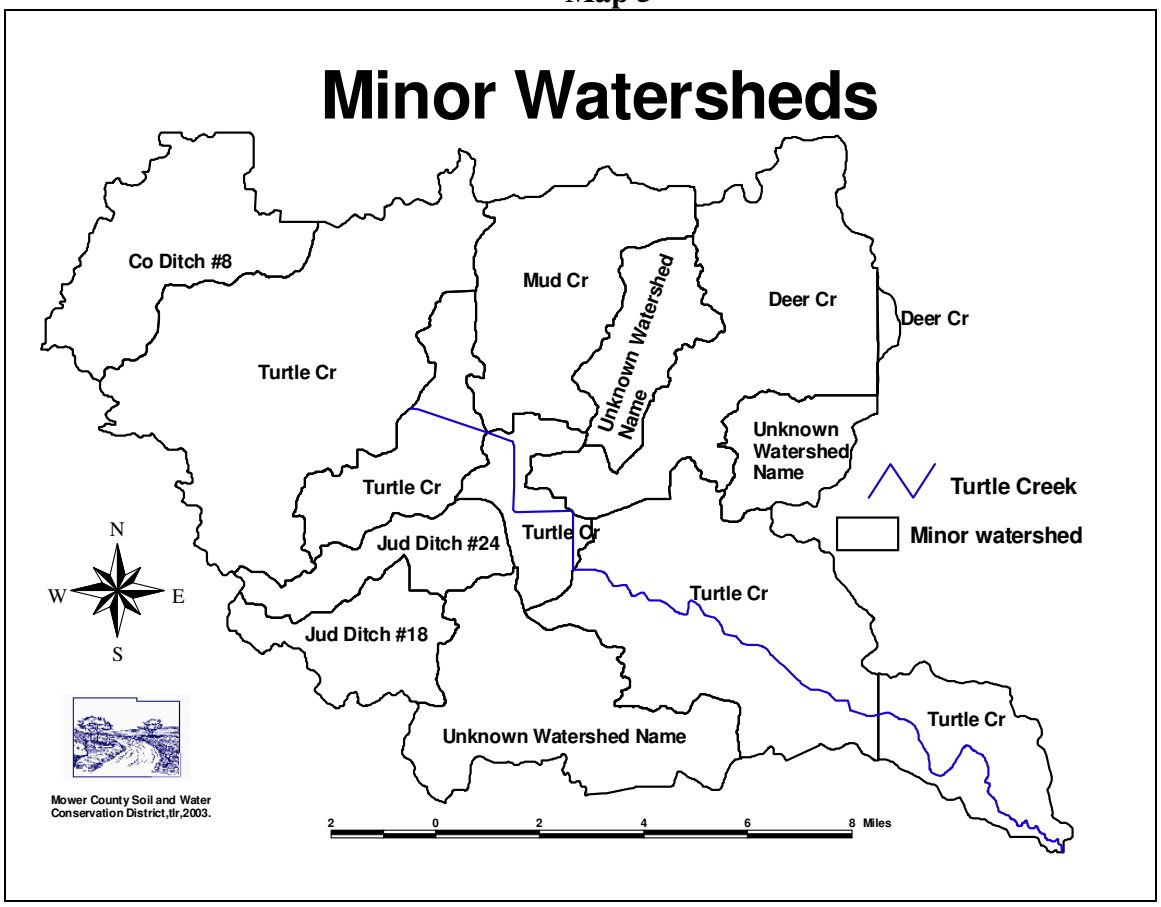
To define the sub-watersheds within, there is an unnamed creek which outlets into Lake Geneva in Section 18 of T 104 N., R 20 W. This creek drains about 10,240 acres. This acreage is the headwaters area above Lake Geneva and is located in the northwest corner of the District.

Deer Creek and Mud Creek, located in the northeast quadrant of the watershed provides drainage of approximately 30,080 acres to Turtle Creek.

By far the largest sub-watershed unit in the watershed is Turtle Creek. This watershed land drains naturally and through improved drains about 65,920 acres. It is located generally in the south half of the watershed.

The outlet of Turtle Creek itself and of the watershed is into the west side of the Cedar River on the south side of the City of Austin in Mower County. The Cedar River begins in Dodge County, Minnesota, flows south through Mower County, thence southeasterly through northeastern Iowa into the Iowa River, and thence into the Mississippi River above the City of Burlington, Iowa.

Map 5



B. Surface Waters

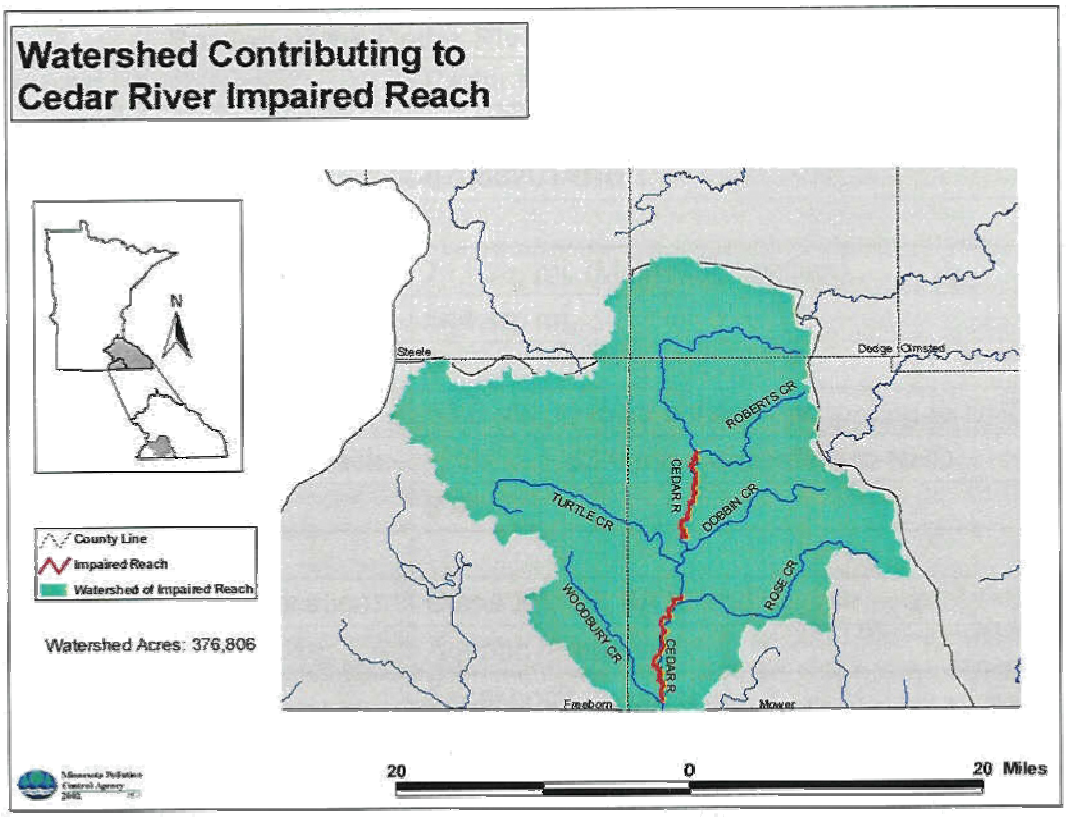
a. Streams

Turtle Creek Watershed is a minor watershed within the major watershed of the Cedar River, which begins in Southern Dodge County, flows through the city of Austin, and then southward into Iowa.

The Cedar River Watershed, which includes Turtle Creek, is a part of a regional TMDL plan to lower fecal coliform levels in the Lower Mississippi Basin in Minnesota. According to the report the strategy to reduce source reduction will be successfully implementing the new Minnesota feedlot rules which should help to reduce the transport of fecal coliform and other pathogens from livestock sources. Manure management plans are being developed as a part of the feedlot program. As active participants with the Basin Alliance for the Lower Mississippi, Turtle Creek Watershed would be likely to be included in the residential wastewater treatment plant and the Conservation Reserve Enhancement Program. Innovative funding for low interest loans is available to residents in Mower County for septic system upgrades. Continuing monitoring in the watershed will provide a process of evaluation.

Two reaches of the river are listed as impaired for fecal coliform bacteria on Minnesota's 1998 303 (d) list. These impaired reaches are located on the Cedar River above the Austin Dam and just upstream of the Iowa border.

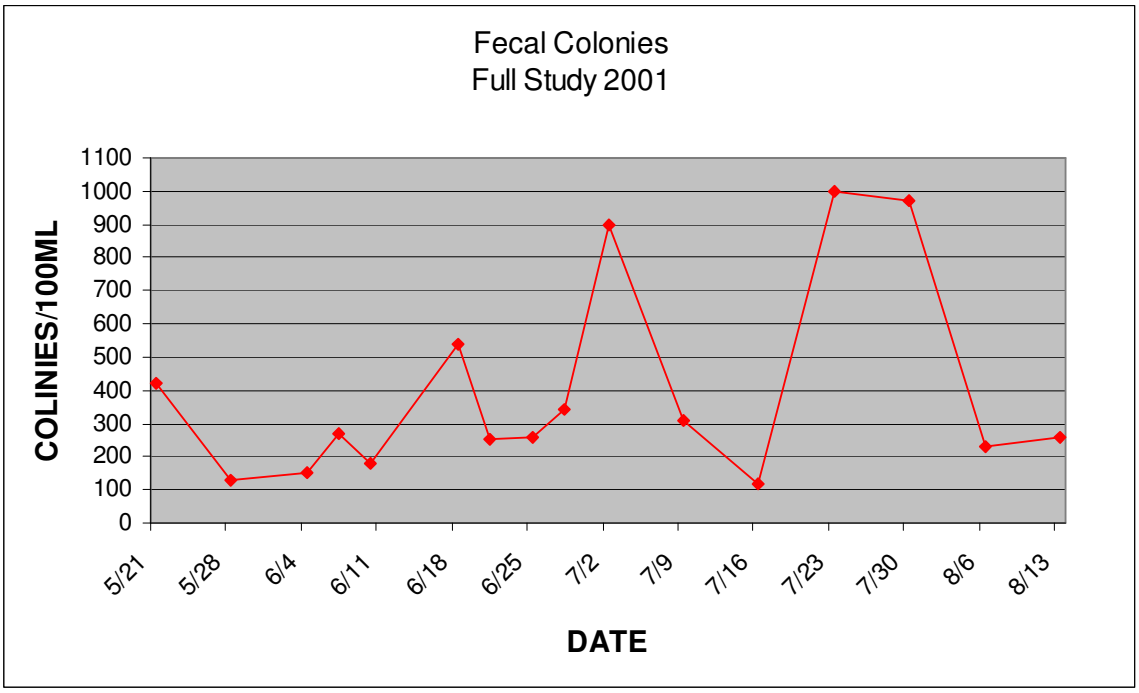
Map 6



In 2000 and 2001, Mower County monitored the tributaries flowing into the Cedar River. Turtle Creek was one monitoring station at the bridge where Turtle Creek crosses on 4th Drive SW in Austin. This is just before the stream enters the Cedar River.

In 2000, only part of the summer was captured. In 2001, staff was able to capture the entire summer. Diagram 2 shows the results of the 2001 season at the Turtle Creek monitoring station. Sampling began in May and ended in August. Analytical tests on these samples included total suspended solids (TSS), fecal coliform bacteria, transparency and nitrates (nitrate-nitrogen).

Diagram 2
Results of the Monitoring Study on Turtle Creek for Fecal Coliform
Environmental Services – Mower County

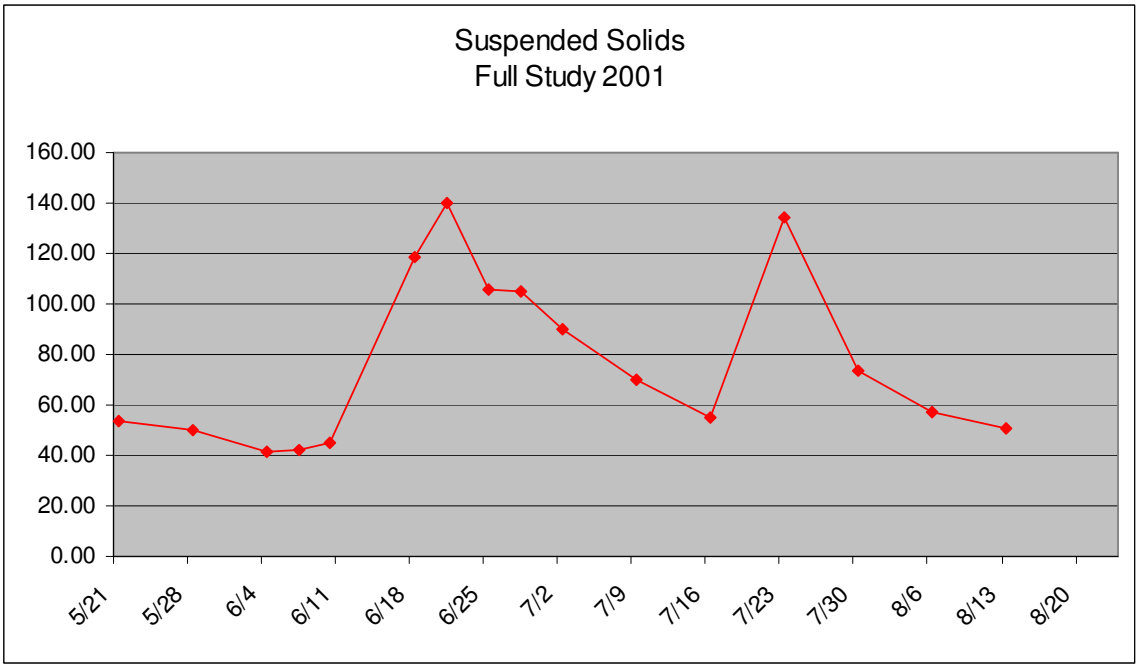


(State Standard is 200 colonies\100ml)

In the report "Water Quality Study of the Cedar River and it's Tributaries" done by Mower County states: "The fecal coliform bacteria and total suspended solids peaked immediately following the heavy rain and snow runoff in on the Turtle Creek site."

Analyzing the fecal coliform results from the Mower County study, 16 samples were collected with 12 exceeding the state standard at the Turtle Creek monitoring site. According to the Total Maximum Daily Load (TMDL) report done by MPCA, the most significant pollutant sources in the Cedar River Watershed appear to be unsewered communities, nonconforming individual sewage treatment systems and improper application of manure

Diagram 3
Results of the Monitoring Study on Turtle Creek for Suspended Solids
Environmental Services – Mower County



(State Standard is 45 mb/l)

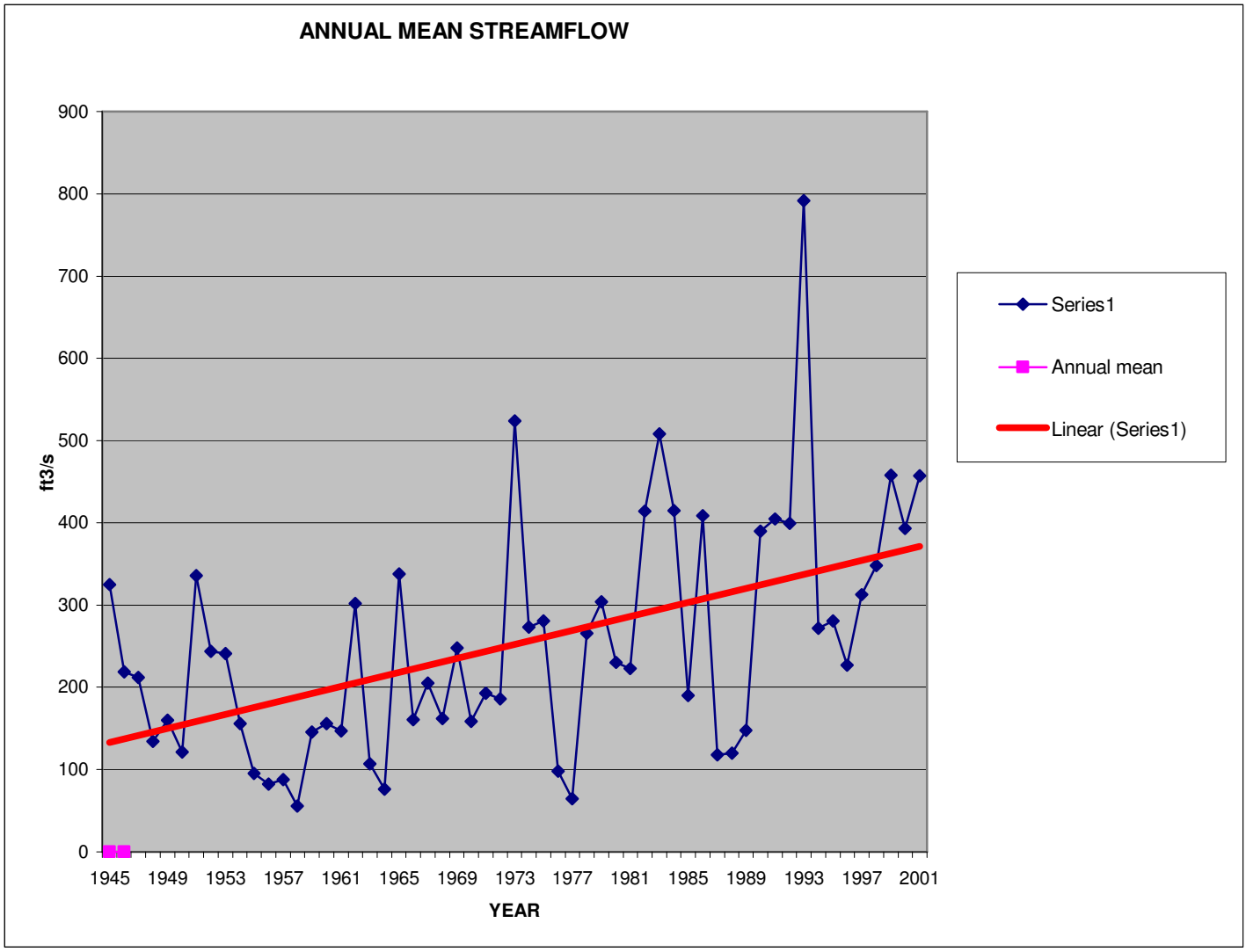
In the report "Water Quality Study of the Cedar River and it's Tributaries" done by Environmental Services Mower County, "The short term study of the Cedar performed the summer of 2000 and 2001 reinforces the fact that suspended solids are consistently lower north of Austin and increase in the Cedar River south of Austin. Turtle Creek shows the highest average suspended solid results in both 2000 and 2001".

According to the TMDL study for the Cedar River Watershed, an estimated 60 percent of land within 100 feet of streams and ditches is cultivated cropland with only 32 percent in permanent vegetation. With the assistance from the SWCD's and NRCS offices in the two Counties, conservation programs including the Conservation Reserve Program, Wetland Reserve Program, Reinvest in Minnesota and Conservation Reserve Enhancement Program will be beneficial in buffering streams and ditches to lower sedimentation entering the surface waters.

b. Stream Flow Information

Stream flow in the Turtle Creek Watershed is characterized by high peak flows and low to intermittent base flows. Local citizens and their representative leadership have repeatedly and consistently identified flood control as a high priority watershed management issue. This is understandable, because frequent floods have caused economic and social hardship. The water quantity goal of the District is to reduce damaging flood flows.

Diagram 4
Cedar River USGS Gage Station



(*source: USGS information & Environmental Services in Mower County)*

Diagram 4 shows the stream flow at the USGS gauge station south of Austin. The blue line shows the average flow of the year. The red line is a trend line that shows an increase in flow over the years.

c. Flood Concern

The Cedar River meanders on a southerly course through the City of Austin. Dobbins Creek joins the Cedar River from the east, just downstream from Oakland Avenue. Turtle Creek joins the Cedar River from the west just downstream from the community wastewater treatment facility. Industrial, commercial, and residential developments occupy the flood plain areas of the three streams within the City limits of Austin. Portions of the flood plain area have been inundated by past floods and substantially greater areas are within reach of potentially greater floods. The major

historical floods have resulted from either a combination of snowmelt and heavy rainfall or heavy rainfall alone over the watershed upstream from Austin.

Minnesota Enhanced Flood Forecast/Warning System through the Department of Natural Resources and the USGS has a gauge near Oakland that monitors the flow of Turtle Creek.

The US Geological Survey has maintained a stream gauging station on the Cedar River near Austin since October, 1944. The gage is located on the bank of the Cedar River about 1.1 miles downstream from Turtle Creek.

Map 7

USGS Monitoring Station

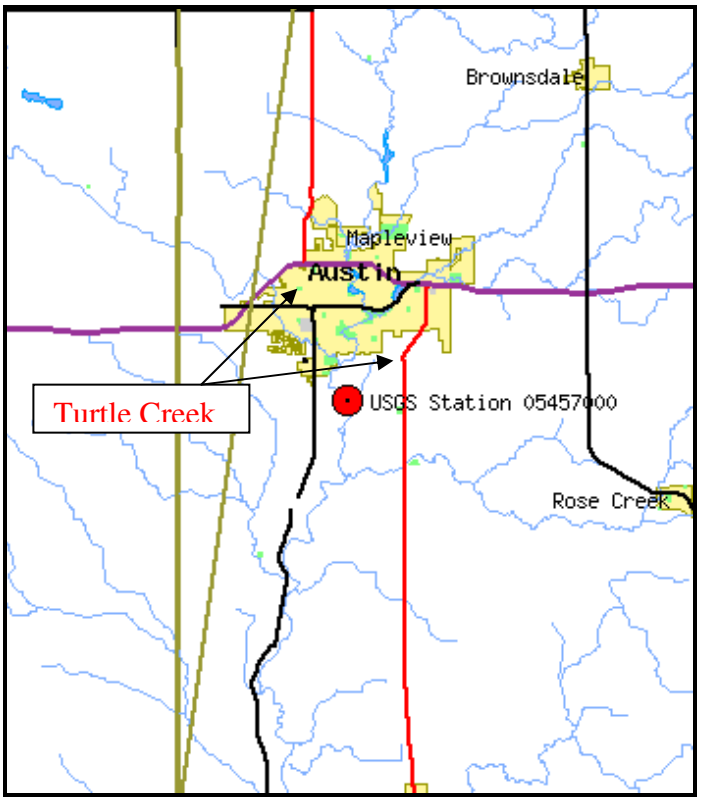
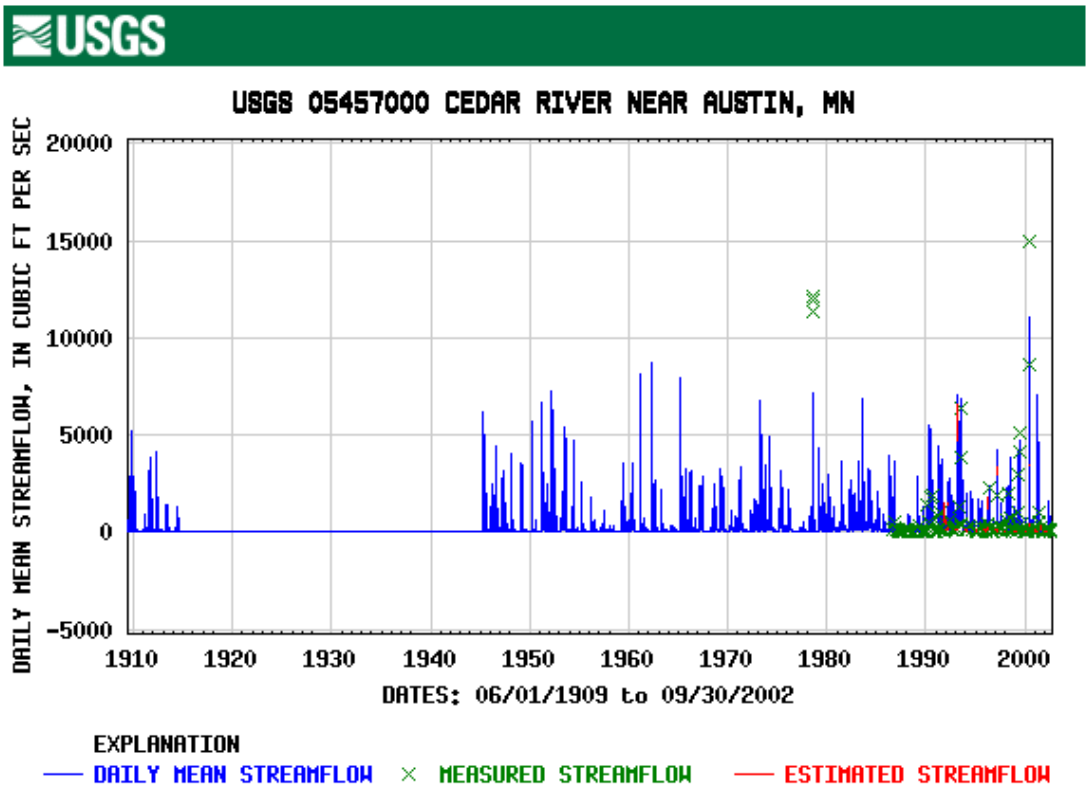


Diagram 5



The greatest recorded flood flow on the Cedar River at Austin occurred on July 10, 2000. The maximum discharge was 15,500 cubic feet per second (c.f.s.) and it produced a gauge height of 22.9 feet. Table 6 lists the ten highest known floods.

TABLE 6

Ten Highest Known Floods in Order of Flow Magnitude
Cedar River at Austin, Minnesota

Date of Flood	Gage Height (Ft.) Feet	Maximum Discharge (c.f.s.)
July 10, 2000	22.90	15,500
July 17, 1978	20.35	12,400
August 15, 1993	19.43	10,800
July 7, 1978	18.14	10,200
March 29, 1962	17.18	9,530
March 1, 1965	18.87	9,400
March 26, 1950	17.81	8,800
July 2, 1983	17.01	8,690
April 6, 1965	16.21	8,410
March 26, 1961	17.03	8,290

(source: www.austin.mn.us/engineering/flood.htm)

Wetland restorations can provide significant flood control if designed to do so. In general, those with no surface outlet or with small piped outlets are most effective.

The Basin Alliance for the Lower Mississippi Basin has incorporated a strategy in their scoping document to encourage high-quality wetland restorations and creations.

Cultivated cropland produces a significantly higher volume of runoff from rainfall events than does grassland. Converting from crops to grass or trees will reduce flood volume. The amount of runoff reduction that can be achieved from a conversion during a 100 year 24 hour storm ranges from 1\4 inch on fine clay soils to 1 ½ inch on sandy soils. Targeting lands that are currently flood prone will also reduce local flood damages. State and Federal programs including the Continuous Conservation Reserve Program, Wetland Reserve Program and Conservation Reserve Enhancement Program are some that provide landowners opportunities to enroll their flood prone areas into wetland restorations.

Culvert sizing is also another flood control technique that incorporates road and other man made buffers to provide short-term retention of floodwater and reduce peak flows. This could be an option for the Board of Managers to consider when listening to the public regarding their flooding concerns and controlling the flow of water. A plan could be in place that would focus on identifying strategic settings on the landscape to reduce flow volumes and velocities, improve water quality and reduce downstream flooding and sediment. Upstream restorations and storm water management structures will allow for the downsizing of culverts while reducing storm

water runoff and soil erosion. Studies throughout the state have been done and put into place; therefore the Watershed District could utilize available information to investigate if a similar project would work for Turtle Creek Watershed.

Solution of the District's stream flow problems is unlikely to be accomplished by the construction of any one project or any one point in time. Rather, it is expected to require multiple applications of various techniques, which may take place over a long period of time. The importance of this plan is to provide a framework for future water management and related activities to ensure that all of the elements, however and whenever implemented, will work together in a complimentary way.

During major flood events, almost all areas of the watershed contribute floodwaters. However, due to location or other characteristics, some area may consistently contribute more to the peak flow. By obtaining baseline-monitoring information on flow, it will assist the District to prioritize areas for practices that will help slow the water down.

d. Lakes

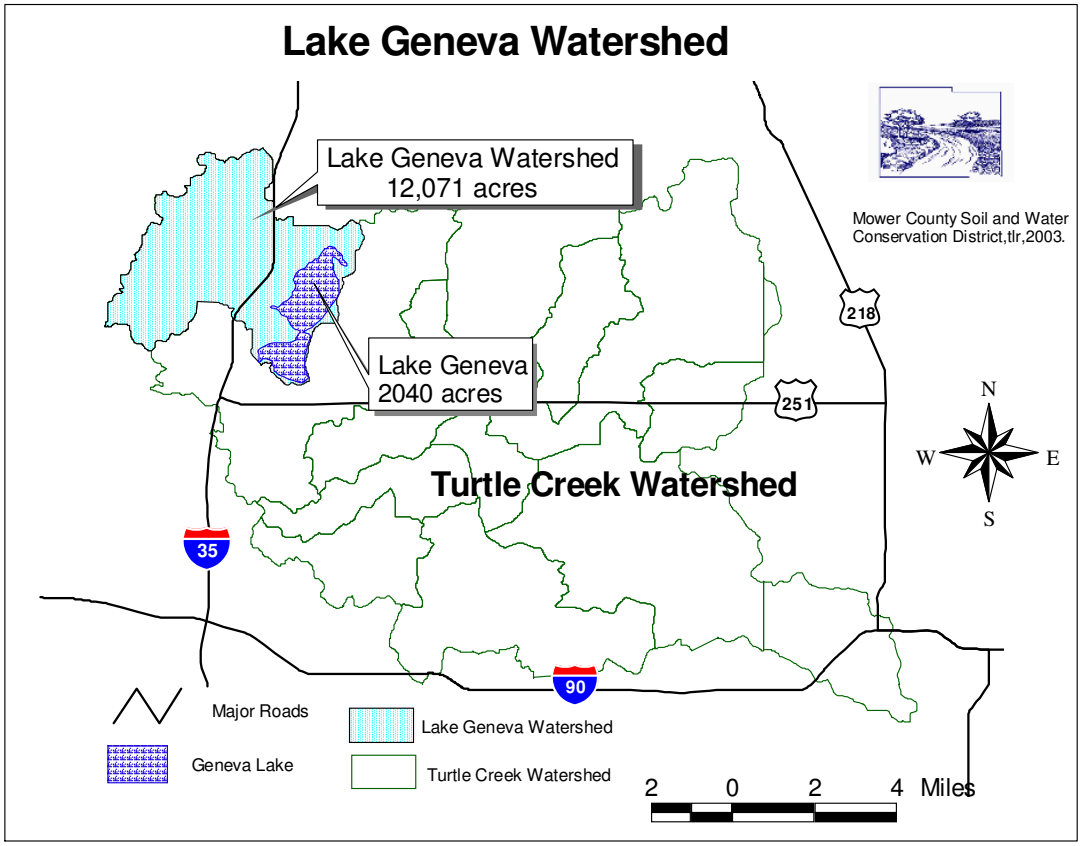
Geneva Lake covers 2040 acres. In 1945, a DNR lake management report states that "there was no evidence of pollution or contamination other than slight drainage from two farmyards." Turbidity was high and moderate algae bloom was taking place. Chemical analysis revealed "adequate" fertility. Submerged aquatic vegetation was "abundant", but emergent vegetation (reeds & bulrushes) were scarce due to grazing and farming of the shoreline. No carp were sampled during the investigation.

In 1968, the surveys state that the "Lake suffers from excess fertility, shoreline abuses and rough fish action, all contributing to the turbidity".

In 2002, the DNR survey states "Plant distribution is very poor. Only one submerged plant was found on the entire basin. There were very few floating-leaf and emergent mactophytes as well. There were a few stands/clumps of cattail widely scattered. Carp are present; many large fish observed in shallow water in the north bay of the basin. Water clarity was also very poor. The water is very brown and turbid across the entire basin. Secchi reading were all 0.5 feet or less across the survey"

Taking the opportunity to prioritize Lake Geneva Watershed for implementation of best management practices, significant impacts can be significant on the water quality of the lake as well as the Turtle Creek Watershed can be achieved. Due to the fact that it is the headwaters of Turtle Creek Watershed, a manageable size and a lake to study the impacts of the practices, it would be a potential for an area to apply for outside funding through the State and/or federal government.

Map 8



e. Wetlands

According to the Basin Alliance for the Lower Mississippi Scoping document, it is estimated that approximately half of the acreage of pre-settlement wetlands in the Lower Mississippi River Basin (880,000 acres according the CURA estimate) has been drained and developed for economic uses such as farming and urban development. The remaining wetland acres perform valuable functions that need protection – hence the statewide goal of "no net losses of wetlands," which this strategy embraces.

When a wetland watershed is altered to accommodate agriculture or urbanization (housing, industry and retail) its hydrology will also be affected. Water level changes in the wetland often also become more frequent and prolonged.

Not all wetlands are equal in terms of their biodiversity, wildlife habitat and aesthetic values. Likewise, not all wetlands are equal in terms of the water quality benefits they provide. In order to make wise resource management decisions for the individual wetlands, and for the surrounding water and land resources, those charged with managing the resources must have the tools to help gather information that will lead them to the best management decisions.

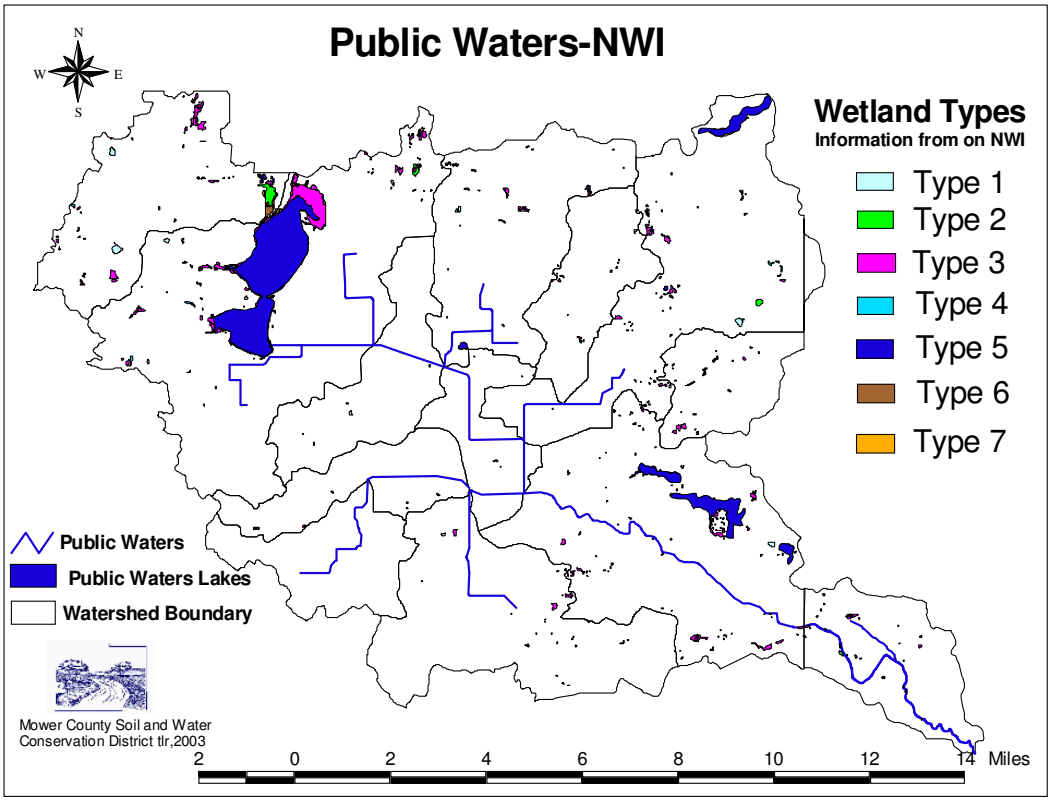
There are approximately 3196 acres of wetlands in the District based on the National Wetlands Inventory (NWI) Map that was developed by the USFWS. They are broken down by type and acreage as follows.

Table 7

WETLAND TYPE – NWI	ACREAGE
Type 1 Seasonally Flooded	91
Type 2 Fresh Meadow	169
Type 3 Shallow Fresh Marsh	1,030
Type 4 Deep Fresh Marsh	39
Type 5 Open Fresh Water	1,733
Type 6 Shrub Swamps	113
Type 7 Wooded Swamps	21

Source: NWI Maps

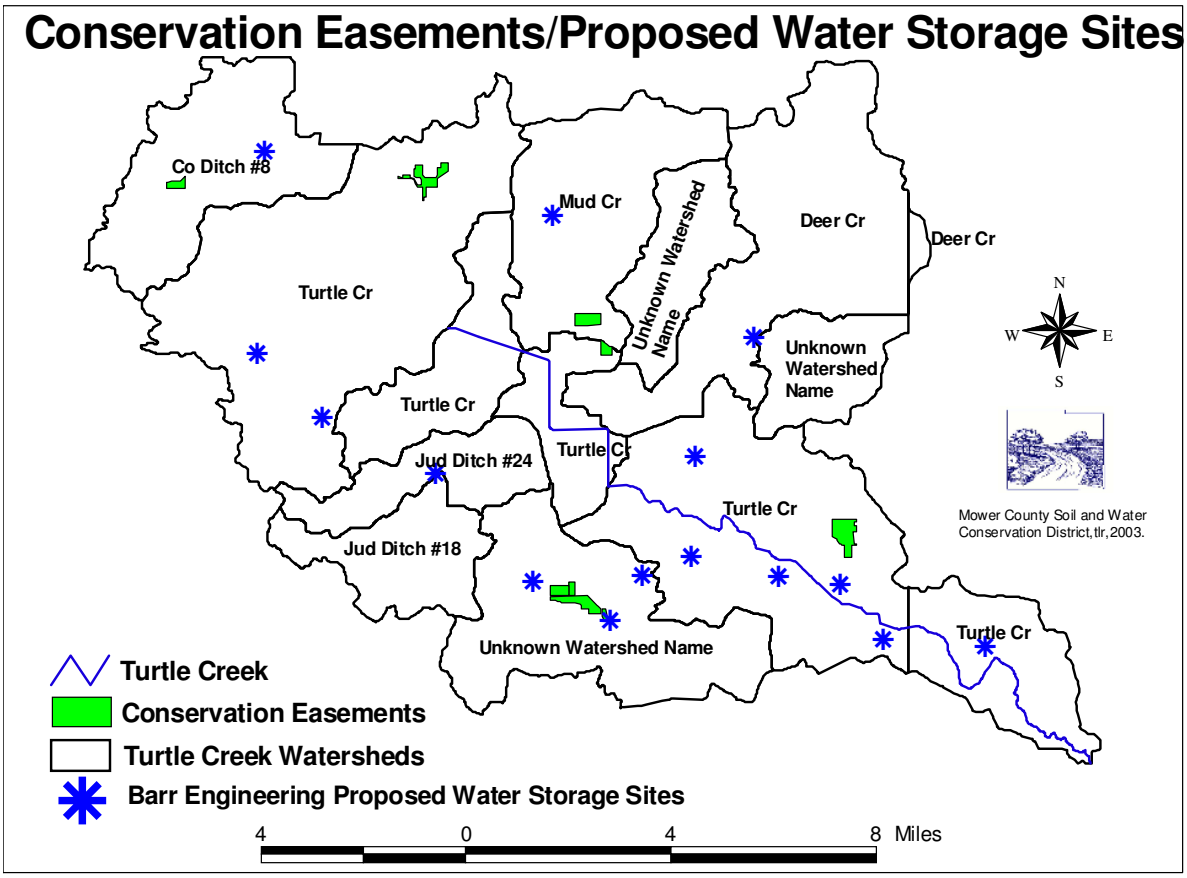
Map 9



Over the last few years the landowners in the District have had many flooding challenges. With those challenges came government programs to take seasonally flooded crop land and enroll it into a wetland restoration or buffer program.

The federal Wetland Reserve Program (WRP), Emergency Watershed Program (EWP), Conservation Reserve Program (CRP), the Farmable Wetland Program (FWP) and the State Reinvest in Minnesota (RIM) Program have peaked the interest of quite a few landowners in the District. 13 additional landowners are presently going through the process of enrolling in these areas into contract and/or easement programs.

Map 10



Also, a consideration for wetland restoration has been the State Banking program. In January 1997, the "Geneva Lake Restoration Project" was approved for deposit in the State Wetland Bank. The wetlands are privately owned for a total of 20 acres. The project consists of 4.8 acres of Type 4, 10.2 acres of Type 3, 1.7 acres of Type 2, 3.3 acres of Type 1, all new wetland credits, and 11.4 acres of public value credits (upland buffer) located in the SE 1\4 of section 18 of Geneva Township.

f. Private/Public Drainage Systems

In addition to the public drainage systems, many landowners between the 1940's and the 1970's installed on the farm drainage on their land.

The managers promulgated the rules and monitor them. Land to be drained now; utilizing an existing drainage system for an outlet, not previously assessed for drainage benefits, is required to have permission of a proper drainage authority before the managers consider an application for farm drainage by a land operator. The managers seek to stop all unauthorized drainage in order to bring into proper order the removal of excess water from the land surface.

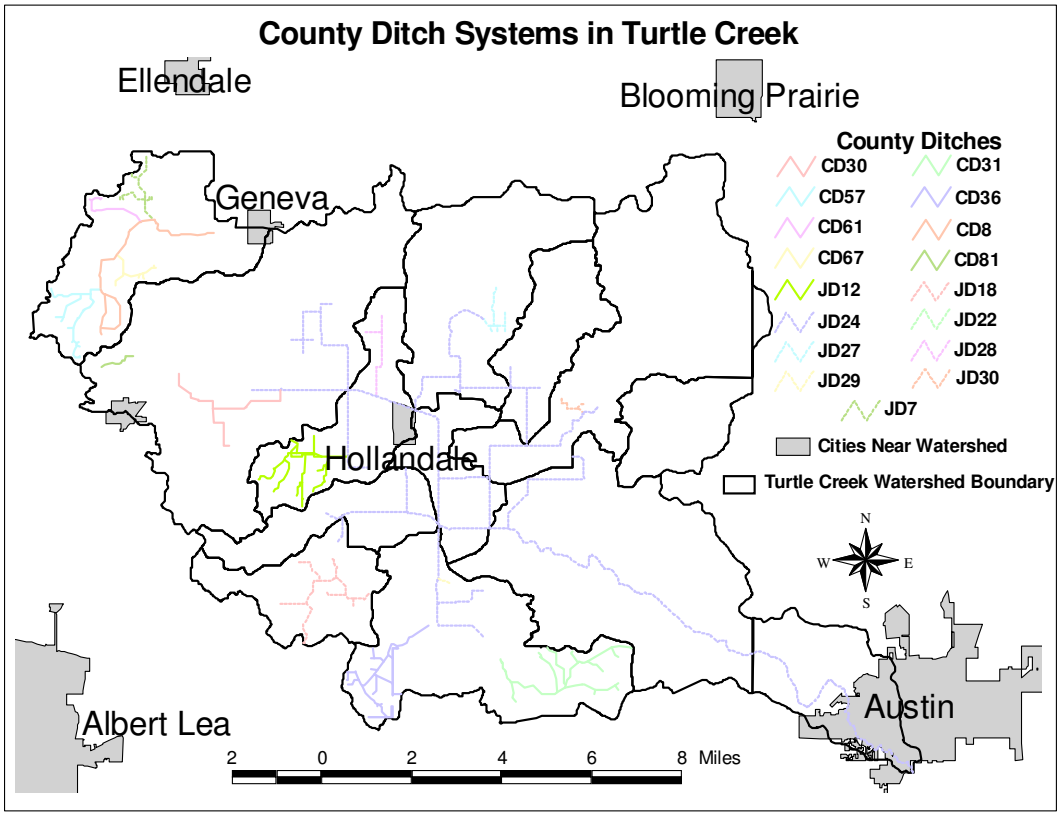
Because there are a number of public drainage systems of varying age, a large network

of public and private roads, and existing on-the-farm drainage channels, minor water problems exist at a number of places in the District, under certain run off conditions.

The Board of Managers oversees the continued maintenance of the drainage system. The ditches are designed to handle large flow volumes. During low flows sediment accumulates in the channels bottom necessitating periodic clean-out maintenance. This routine maintenance results in additional cost to Watershed District as well as the private citizens that are living within the watershed. The University of Minnesota and the Minnesota Pollution Control Agency are investigating the use of a "compound" channel design that may reduce/and or eliminate the need of periodic ditch maintenance.

Compound channels incorporate smaller self maintained channels within larger flood channels. The smaller channels provide proper water and sediment transport during times of low flow. The design has the potential to reduce/eliminate dollars spent on ditch clean-out maintenance.

Map 11



Map 12

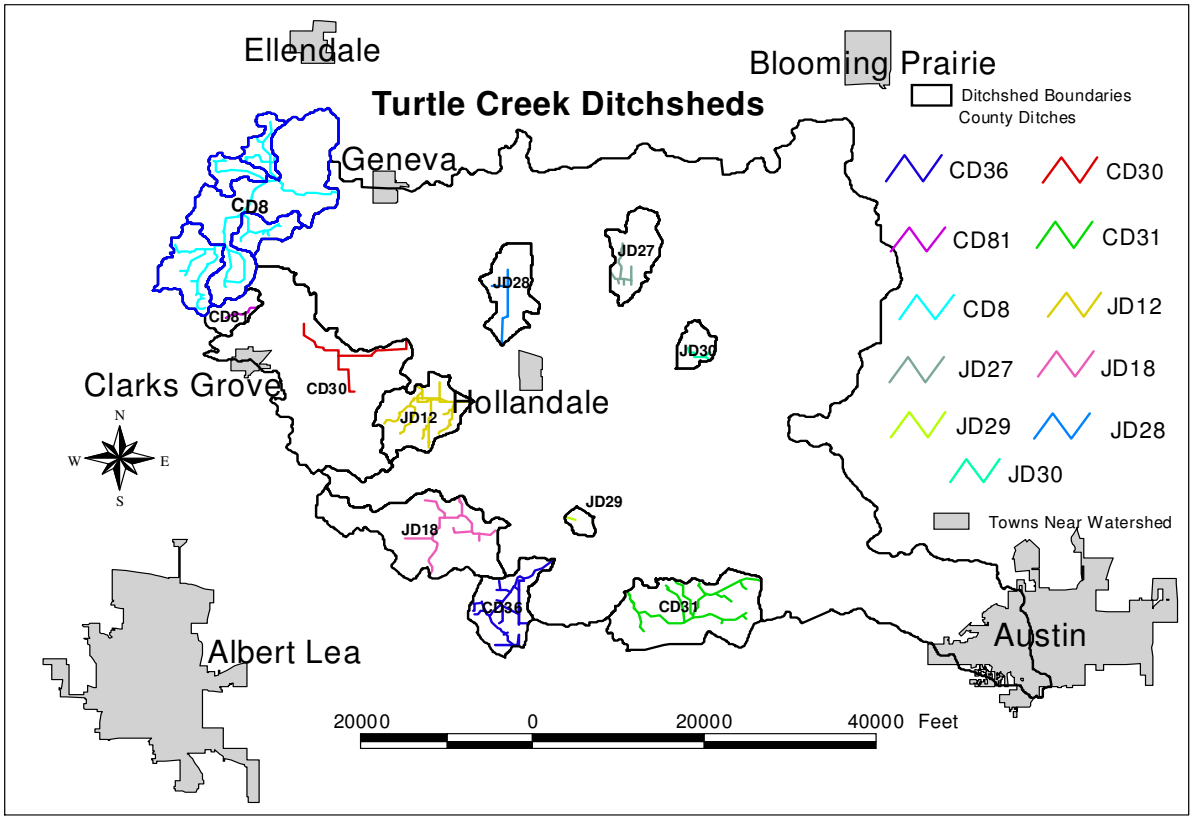

Ellendale
Blooming Prairie
Turtle Creek Ditchsheds
Ditchshed Boundaries
County Ditches
Geneva
CD36
CD30
CD81
CD31
CD8
JD12
JD27
JD18
JD29
JD28
JD30
Towns Near Watershed
CD8
JD27
JD28
CD81
JD30
Clarks Grove
CD30
Hollandale
JD12
N
W
E
S
JD29
JD18
CD36
CD31
Albert Lea
Austin
20000
0
20000
40000 Feet

Table 8
PUBLIC DRAINAGE SYSTEMS
WITHIN THE DISTRICT

System	Location	Size/acres	Outlet
County # 8	NW Corner of District above Lake Geneva, mostly Bath Twp	6180 acres	Lake Geneva
County 30	NE Corner of Bancroft Township, West edge of Riceland Twp.	6250 acres	J.D. #24
County 31	SW corner of Moscow township	2950 acres	J.D #24
County 36	Along Southwest boundary in Riceland Township	2310 acres	JD #24
Judicial 12	Sections 4 & 5 and parts of contiguous sections in Riceland Twp	1570 acres	JD #24
Judicial 18	Most all of sections 19, 20, 28, 29 and parts of contiguous sections Riceland township.	3600	JD #24
Judicial 24	Greater part of Geneva Newry and Moscow townships and NE half of Riceland Twp.	80,000	Turtle Creek and Cedar River
Judicial 27	Parts of Section 18, 19, and 30 of Newry Township North of Turtle Creek	1190	JD #24
Judicial 28	Parts of Section 22,23, 26, 27 of Geneva Twp, north of Turtle Creek	1240	JD #24
Judicial 29	Part of Section 21 of Riceland Township	110	JD #24
County #81	Section 26 of Bathe Township		

g. Water Management Structures

Table 9

Dam	Name	Nearest City	Owner	Hazard	Permit
359	Geneva Lake	Hollandale	Freeborn County	3	
387	Johnson Pool	Moscow	Johnson	3	19634.56-359

- **Watercourse Crossings**

As previously stated, the District land has upon it a well organized network of county and township roads and some state highway mileage. All of the crossings of Turtle Creek from its outlet in Section 31, T 104 N, R 20 W to its confluence with the Cedar River are bridges of adequate design. At other natural and drainage systems road crossing adequate bridges or culverts have been designed and installed.

No new locations of culverts or bridges are expected to be built within the watershed. When existing bridges or culverts are to be replaced by the owner of the structure plans of such proposal are reviewed by the managers before replacement work.

- **Dams and Retention Structures**

There is a control structure on the SE corner of the lake, at the beginning of Turtle Creek. The natural ordinary high water elevation for Lake Geneva was established by the Minnesota Commissioner of Conservation (now the Department of Natural Resources) 1211.1 feet above sea level on March 5, 1945.

The supervision of this dam rests with the Freeborn County Board of Commissioners. No other retention or stabilization structure exists in the District.

C. Existing Water Management Plans & Programs

The Districts managers recognize the importance of having a comprehensive plan that both captures local vision and is inclusive of the goals and objectives of other natural resources agencies. During the planning process, members of the BWSR, MPCA, MNDNR, County Water Planners, USFWS USACE, MNDOT, SWCD, NRCS and other were invited to participate in the planning process. These individuals were asked to provide input to the District's planning process on the goals, politics and objectives: Included in this update were priorities of the following plans that cover the Turtle Creek Watershed:

- County Water Management Plans
- Soil and Water Conservation District Plans
- Natural Resource Agency Plans
- DNR Lake Plan for Geneva Lake
- Basin Alliance for the Lower Mississippi Basin in MN (BALMM) Scoping Document
- Other local government water management plans
- TMDL implementation

Part II. Overall Issues, Watershed Policies/Goals and Objectives

The goals section is organized within four Major Areas of District Involvement. Watershed Management, Water Quality Protection, Water Quantity Management and Stewardship

Major Area I. Watershed Management – (WM)

Resource Findings:
Turtle Creek Watershed District has a 5 member Board of Managers that oversee the operations. The Watershed District includes parts of Freeborn and Mower Counties and multi municipalities. It is difficult, without staff, to focus on more than just maintaining the drainage system, therefore many opportunities in implementing natural resource programs are lost.

Primary Role of the Watershed District:
Manage the watershed from an effective Watershed Management Plan that addresses goals and that meet the needs of the watershed public.

Goal #1 – Intergovernmental Cooperation
Pursue partnerships to provide effective, efficient and consistent water management activities throughout the watershed.

Action Policy WM1a
Have a representative on the water advisory committee for Freeborn and Mower Counties.

Action Policy WM1b
Become active and attend SWCD board meetings. Request that agendas be mailed to the District and attend meetings when agenda items are relevant to the Watershed's goals and focuses.

Action Policy WM1c
Have representative from the District attend meeting for the Basin Alliance for the Lower Mississippi Basin. (BALMM)

Action Policy WM1d
Explore the possibility of entering into an agreement with a LGU for administrative services. Approach an LGU for administrative services for a few hours a month in moving the District forward with projects and programs.

Action Policy WM1e
Coordinate District initiated projects with appropriate groups/individuals.

Action Policy WM1f
If and when a Cedar River Watershed project is formed, become an active participant.

Action Policy WM1g
Actively pursue non-tax levy funding sources and seek partnerships to fund District projects.

Action Policy WM1h
Where mutually beneficial, assist other governmental agencies and organizations achieve their water quality and watershed goals and objectives within the Watershed District.

Action Policy WM1i
Actively pursue environmental education projects with existing environmental education entities.

Goal #2
Restructure and expand the Citizen Advisory committee to establish strong connections for the Turtle Creek Watershed District.

Action Policy WM2a
Review the membership of the Citizen advisory committee. Address the questions; Does it meet the needs of the watershed? Is there representation from different areas of the watershed?

Action Policy WM2b
Expand the Citizen advisory committee to include technical advisors including NRCS, SWCD, BWSR, MPCA and DNR.

Action Policy WM2c
Request periodic updates from agencies to address the needs of the watershed.

Action Policy WM2d
Meet with the Citizen Advisory Committee to review annual work plan, projects and future undertakings.

Action Policy WM2e
Utilize the Citizen advisory committee to assist the board in their work plan and implementation of goals for the 10-year watershed plan.

Goal #3 – Financing
Utilize planning, education and partnerships to cost effectively fulfill District goals and address water resource management issues.

Action Policy WM3a
Utilize appropriate financing mechanisms for the finance of all district activities, including by not limited to mechanism and procedures outline in MN Statues 103D.

Action Policy WM3b
Actively pursue non-tax levy funding sources in order to reduce the tax levy financing burden on the residents of the District where appropriate seek partnerships and cooperative agreements to finance projects and education projects.

Goal #4: Encourage partners and residents to work together on a lake management plan for Geneva Lake.

Action Policy WM4a
Appoint a lake advisory committee to discuss the lake management plan for Geneva Lake.

Action Policy WM4b
Encourage the management of the lake to include retaining high waters during storm events

Action Policy WM4c
Facilitate discussions between DNR, County, residents and users of the lake with the implementation of the lake management plan.

Action Policy WM4d
Consider Geneva Lake sub watershed a priority area for conservation practice and program implementation.

Action Policy WM4e
Encourage wetland restorations, buffers and other best management practices above Geneva Lake to improve and protect the water quality of the lake. Work with the SWCD and NRCS offices in assisting the District in promoting best management practices.

Goal #5
Continue to maintain the drainage system while researching new and innovative projects that will be benefit the system economically as well as protect the resource.

Action Policy WM5a
Work with the Drainage Inspector and landowners in coordinating annual and long range maintenance plans for the drainage system.

Action Policy WM5b
Research new ways of maintaining ditches that have economic and environmental benefits, this could include Channel Restoration. Work with the DNR and MPCA for information on projects similar to channel restoration work.

Action Policy WM5c
Develop a report outlining the research and alternatives that would benefit the watershed.

Action Policy WM5d
Pilot a ditch system to study and compare costs for channel restoration and other innovative maintenance projects.

Major Area II. Water Quality - (WQUAL)

Resource Findings:

- Sedimentation. Improvements in agricultural operations have helped reduce sediment loading, but significant problems remain in each sub watershed. The monitoring done by Environmental Services in Mower County, sediment loading is present and exceeding State standards.
- As a part of NRCS/SWCD Tillage Transect Survey done in 2002 in Freeborn County, 50% of the cropland has conservation tillage on the land.
- Limited monitoring information is available in the watershed and what is available shows that Turtle Creek is exceeding state standards in Fecal Coliform and Suspended Solids.
- The water quality of Lake Geneva has shown degradation over time. Plant population has decreased along with rough fish being prominent. Water clarity is also very poor.

Primary Role of Watershed District:
Encourage and implement practices to improve and protect the quality of surface water in the District.

Goal #1: Increase ditch miles of filterstrips by implementing a buffer initiative.

Action Policy WQUAL1a
Work with partners to include the NRCS/SWCD updating fact sheets outlining the benefits of filterstrips in the watershed economically as well as protecting the resource.

Action Policy WQUAL1b
Work with the Drainage Inspector on identifying high priority erosive areas for filterstrips.

Action Policy WQUAL1c
Work with partners to map or obtain GIS layers that identify areas where filterstips are needed. Coordinate with FSA, SWCD, DNR and NRCS the information that has already been mapped for identifying areas.

Action Policy WQUAL1d
Develop a map showing priority areas in the watershed.

Action Policy WQUAL1e
Work with individual landowners promoting filterstrips and financial incentives that are a part of the CCRP.

Action Policy WQUAL1f
Analyze the watershed identifying priority areas that do not have the 1 rod strip along the ditch and/or have not been reimbursed for the strip to enroll into CCRP.

Action Policy WQUAL1g
Work with the NRCS office in requiring all strips to be planted to native grasses.

Goal #2
To preserve and protect topsoil, while reducing sedimentation runoff to the surface waters of Turtle Creek.

Action Policy WQUAL2a
Work with the NRCS/SWCD offices to demonstrate BMP that reduce soil erosion.

Action Policy WQUAL2b
Support and implement best management practices to reduce erosion and sedimentation.

Action Policy WQUAL2c
Promote reducing surface runoff and increase infiltration through conservation tillage.

Action Policy WQUAL2d
Promote reducing water erosion by restoring drained/cropped wetlands and uplands buffers using native grasses.

Action Policy WQUAL2e
Implement a buffer initiative.

Action Policy WQUAL2f
Promote installation of conservation practices and enrollment of highly erodible lands into the CRP, RIM and CREP programs.

Action Policy WQUAL2g
Work with the NRCS/SWCD offices to partner implementation of the 2002 farm program.

Action Policy WQUAL2h
Conservation tillage can reduce the average soil erosion by two-thirds. Promote and support the University of Minnesota "Tillage Best Management Practices for Water Quality Protection in Southeastern Minnesota".

Goal #3
Develop baseline monitoring data for each sub watershed in the Turtle Creek Watershed.

Action Policy WQUAL3a
Implement a citizen monitoring program through the MPCA and/or Iowa Water.

Action Policy WQUAL3b
Support and increase the number of rain gauge monitors in the watershed with a goal of one participant per sub watershed. This information will then be incorporated into the monitoring program for the watershed.

Action Policy WQUAL3c
Gather data on each sub-watershed to include drainage and environmental concerns, pending projects, opportunities for conservation activities, water treatment, pollutant trapping and water storage.

Action Policy WQUAL3d
Update the stage-discharge relationship (rating curve) for the flood warning system on Turtle Creek. Build monitoring plan around this station.

Action Policy WQUAL3e
Develop a 2 year monitoring program that will provide baseline data. This monitoring program will include measuring flow, fecal coliform, nitrates, turbidity and suspended solids at the one existing gauging station.

Action Policy WQUAL3f
Expand monitoring efforts in the watershed by utilizing computerized equipment to tract stage/flow in strategic locations within the watershed.

Goal 4
Reduce level of pollutants in surface waters of the watershed as identified in the Total Maximum Daily Load (TMDL) analysis.

Action Policy WQUAL4a
Support the TMDL studies done in the Lower Mississippi Basin/Cedar Watershed.

Action Policy WQUAL4b
Work with BALMM in TMDL implementation. Support the implementation of recommendations from the TMDL studies to reduce pollutants.

Major Area III. Water Quantity - (WQUAN)

Resource Findings:

- The draining of wetlands in the watershed has reduced flood storage capacities.
- Turtle Creek Watershed District has a well developed drainage system which tends to increase runoff. The low flat topography and peat soil of the center part of the district tends to slow down the runoff from the upper half of the watershed.

Primary Role of Watershed District:
Effectively manage the flow of floodwaters within the District.

Goal 1: Preserve existing flood levels of the District waters at or below the 100-year flood elevations.

Action Policy WQUAN1a
Inventory and define 100-year flood elevations for all water bodies within the district.

Action Policy WQUAN1b
Support and increase the number of rain gauge monitors in the watershed with a goal of one participant per sub watershed. This information will then be incorporated into the monitoring program for the watershed

Goal 2: Examine cost effective options to reduce agricultural and urban flood damages through wetland restorations.

Action Policy WQUAN2a
Identify priority areas for wetland restorations. Those areas would provide a high degree of benefit to the hydrology, water quality and biological diversity. Utilize existing information to include the Barr engineering study and DNR hydrology study for flood insurance.

Action Policy WQUAN2b
Engage non-government in wetland restoration project to include Ducks Unlimited, MN Waterfowl Assn and Pheasants Forever.

Action Policy WQUAN2c
Restore wetland critical areas that have been identified using RIM, WRP, FWP and Wetland Bank Program.

Goal 3: Examine cost effective options to reduce agricultural and urban flood damages through studies of culverts.

Action Policy WQUAN3a
Research the possibility of a demonstration project to down size culverts for flood prevention in the upper end of the watershed.

Action Policy WQUAN3b
Visit and/or discuss with other areas of the State that have completed similar downsizing projects the pros and cons of downsizing culverts.

Action Policy WQUAN3c
Develop a report on the study and decide if the District wants to move forward with a demonstration project.

Major Area IV. Stewardship/Education - (STEW)

Water issues, particularly water quality, depend on actions taken by private citizens. As such, the District water resources are heavily dependent on the day to day land use decisions of private individuals. By improving the District's information dissemination capabilities and implementing a program of district-wide education on the impact of activities on the drainage system and water resources, individuals should better be able to evaluate the impacts of their day to day actions. The Board of Managers believes this is the best approach for addressing non-point pollution in the

watershed. This strategy can provide the opportunity to reduce long-term costs associated with correcting problems.

Primary Role of Watershed District:
Provide the residents and landowners with information to assure the protection and improvement of the Turtle Creek Watershed.

Goal 1 – Watershed Concept
Residents, landowners and government officials will be provided information of the concept of the watershed and that individual land use practices and choices determines the quality of water resources. Working with the DNR watershed coordinator to provide this information piece.

Goal 2 – Understand Water Resources
Residents, landowners and government officials will be provided information on the basics of lake, stream and wetland factors the impact water quality, flood control and wildlife habitat.

Goal 3 – Communications
Residents, landowners, local, state and federal government will be given updates of District initiatives, projects and challenges.

Action Policy STEWa
Maintain an active citizen advisory committee to provide input and assistance on District activities

Action Policy STEWb
Develop a public information piece that can be distributed to landowners that brings them information that will benefit them as landowners and also the watershed. Topics could include: Watershed basics, success stories of BMP's in watershed, current and future projects, annual report of activities of board.

Part III. General Issue Action Tables

General Issue Action Tables					
Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
Watershed Management (WM)	**1. Intergovernmental Cooperation**	**WM1a--**Have a representative on the water advisory committee for Freeborn and Mower Counties.	Managers	2004 and on	
		WM1b--Become active and attend SWCD board meetings. Request that agendas be mailed to the District and attend meetings when agenda items are relevant to the Watershed's goals and focuses.	Managers	2004 and on	
		WM1c--Have representative attend meeting for the Basin Alliance for the Lower Mississippi Basin. (BALMM) Send a representative to the monthly BALMM meeting representing the District.	Managers or Admin Services	2004 and on	
		WM1d--Explore the possibility of entering into an agreement with a LGU for administrative services. Approach an LGU for administrative services for a few hours a month in moving the District forward with projects and programs.	Managers	2004	6000.00 per year
		WM1e--Coordinate District initiated projects with appropriate groups/individuals.	Admin Services	2004 and on	
		WM1f--If and when a Cedar River Watershed project is formed, become an active participant.	Managers	2007	
		WM1g--Actively pursue non-tax levy funding sources and seek partnerships to fund District projects.	Admin Services	2006	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
		WM1h--Where mutually beneficial, assist other governmental agencies and organizations achieve their water quality and watershed goals and objectives within the Watershed District.	Managers & Admin Services	2004	
		WM1i--Actively pursue environmental education projects with existing environmental education partners.	Managers, Extension, DNR, MPCA	2004	
	2. Restructure and expand the Citizen Advisory committee to establish strong connections for the Turtle Creek Watershed District.	**WM2a--**Review the membership of the Citizen advisory committee. Address the questions; Does it meet the needs of the watershed? Is there representation from different areas of the watershed?	Managers	2003	
		WM2b--Expand the Citizen advisory committee to include technical advisors NRCS, SWCD, BWSR, MPCA & DNR.	Managers	2003	
		WM2c--Request periodic updates from agencies to address the needs of the watershed.	NRCS, SWCD, BWSR, DNR, MPCA, Counties & Cities	2004	
		WM2d--Meet with the Citizen advisory committee to review annual work plan, projects and future undertakings.	Managers & Committee Members	2003 quarterly	
		WM2e--Utilize the Citizen advisory committee to assist the board in their work plan and implementation of goals for the 10 year watershed plan.	Managers & Committee Members	2003	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
	3. Financing - Utilize planning, education and partnerships to cost effectively fulfill District goals and address water resource management issues.	**WM3a**--Utilize appropriate financing mechanisms for the finance all district activities, including by not limited to mechanism and procedures outline in MN Statues 103D.	Managers & Admin Services	2003	
		WM3b--Actively pursue non-tax levy funding sources in order to reduce the tax levy financing burden on the residents of the District where appropriate seek partnerships and cooperative agreements to finance projects and education projects.	Admin Services	2004	
	4. Encourage partners and residents to work together on a lake management plan for Geneva Lake.	**WM4a**--Appoint a lake advisory committee to discuss the lake management plan for Geneva Lake.	Managers	2003	
		WM4b--Encourage the management of the lake to include retaining high waters during storm events	Managers & DNR	2003	
		WM4c--Facilitate discussions between DNR, County, residents and users of the lake with the implementation of the lake management plan.	Managers	2003	
		WM4d--Consider Geneva Lake sub-watershed a priority area for conservation practice and program implementation.	Managers DNR, NRCS, SWCD	2004	
		WM4e--Encourage wetland restorations, buffers and other best management practices above Geneva lake to improve and protect the water quality of the lake. Work with the SWCD and NRCS offices in assisting the District in promoting best management practices.	Admin Services, NRCS, SWCD	2004	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
	5. Continue to maintain the drainage system while researching new and innovative projects that will be benefit the system economically as well as protect the resource.	**WM5a**-- Work with the Drainage Inspector and landowners in coordinating annual maintenance plans for the drainage system.	Managers	2003	
		WM5b--Research new ways of maintaining ditches that has economic and environmental benefits. For example: Channel Restoration. Work with the DNR and MPCA for information on projects similar to channel restoration work.	Admin Services, DNR & MPCA	2006	
		WM5c--Develop a report outlining the research and alternatives that would benefit the watershed.	MPCA & DNR		
		WM5d--Pilot a ditch system to study and compare costs for channel restoration and other innovative maintenance projects.	Student Intern & MPCA	2006	4000.00
Water Quality (WQUAL)	**1. Increase ditch miles of filterstrips by implementing a buffer initiative.**	**WQUAL1a--**Work with partners to include the NRCS/SWCD updating fact sheets outlining the benefits of filterstrips in the watershed economically as well as protecting the resource.	Admin Services	2004	
		WQUAL1b --Work with the Drainage Inspector to identify identifying high priority erosive areas for filterstrips.	Admin Services	2004	
		WQUAL1c--Work with partners to map or obtain GIS layers that identify areas where filterstips are needed. Coordinate with FSA, SWCD, DNR and NRCS the information that has already been mapped for identifying areas.	Student Intern & MPCA	2004	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
		WQUAL1d--Develop a map showing priority areas in the watershed.	Student Intern & MPCA	2004	
		WQUAL1e--Work with individual landowners promoting filterstrips and financial incentives that are a part of the CCRP.	NRCS, SWCD, FSA	2004	
		WQUAL1f--Analyze the watershed, identifying priority areas that do not have the 1 rod strip along the ditch and/or have not been reimbursed for the strip to enroll into CCRP.	Student Intern & MPCA	2004	
		WQUAL1g--Work with the NRCS office in requiring all strips to be planted to native grasses.	Managers and NRCS	2003	
	2. To preserve and protect topsoil while reducing sedimentation runoff to the surface waters of Turtle Creek.	**WQUAL2a--**Work with the NRCS/SWCD offices to demonstrate BMP that reduce soil erosion.	NRCS & SWCD	2003	
		WQUAL2b--Promote and implement best management practices to reduce erosion and sedimentation.	Managers	2003	
		WQUAL2c—Promote reducing surface runoff and increase infiltration through conservation tillage.	Managers	2003	
		WQUAL2d—Promote reducing water erosion by restoring drained/cropped wetlands and uplands buffers using native grasses.	NRCS & SWCD	2003	
		WQUAL2e--Implement a buffer initiative.	Admin Services Managers	2004	
		WQUAL2f--Promote installation of conservation practices and enrollment of highly erodible lands into the CRP, RIM and CREP programs.	NRCS & SWCD	2003	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
		WQUAL2g--Work with the NRCS/SWCD offices to partner implementation of the 2002 farm program.	Managers	2003	
		WQUAL2h-- Conservation tillage can reduce the average soil erosion by two-thirds. Promote and support the University of Minnesota's "Tillage Best Management Practices for Water Quality Protection in Southeastern Minnesota".	Extension, NRCS, SWCD, Managers	2005	
	3. Develop baseline-monitoring data for each sub watershed in the Turtle Creek Watershed.	**WQUAL3a** -implement a citizen-monitoring program through the MPCA and/or Iowa Water.	Freeborn County & Managers		
		WQUAL3b--Support and increase the number of rain gauge monitors in the watershed with a goal of one participant per sub watershed. This information will then be incorporated into the monitoring program for the watershed	SWCD & Managers		
		WQUAL3c--Gather data on each sub-watershed to include drainage and environmental concerns, pending projects, opportunities for conservation activities, water treatment, pollutant trapping and water storage.	Student Intern & MPCA	2005	4000.00
		WQUAL3d--Develop a 2-year monitoring program that will provide baseline data. This monitoring program will include measuring flow, fecal coliform, nitrates, turbidity and suspended solids at the one existing gauging station.	DNR & MPCA Mower County, SWCD & Managers	2005	3000.00

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
		WQUAL3e – Expand monitoring efforts in watershed by utilizing computerized equipment to tract stage/flow in strategic locations within the watershed	Managers & MPCA	2008	6,000.00 Equip. 4,000.00 staff time
Water Quantity- (WQUAN)	**1. Preserve existing flood levels of the District waters at or below the 100-year flood elevations.**	**WQUAN1a**--Inventory and define 100-year flood elevations for all water bodies within the district.			
	2. Examine cost effective options to reduce agricultural and urban flood damages through wetland restorations.	**WQUAN2a**--Identify priority areas for wetland restorations. Those areas would provide a high degree of benefit to the hydrology, water quality and biological diversity. Utilize existing GIS information to include the Barr engineering study and DNR hydrology study as well as other information.	Student Intern	2005	4000.00
		WQUAN2b--Engage non-government in wetland restoration projects to include Ducks Unlimited, MN Waterfowl Assn and Pheasants Forever.	Managers	2004	
		WQUAN2c--Restore wetland critical areas that have been identified using RIM, WRP, FWP and Wetland Bank Program.	SWCD, NRCS		
	3. Examine cost effective options to reduce agricultural and urban flood damages through researching culverts.	**WQUAN3a**--Research the possibility of a demonstration project to down size culverts for flood prevention in the upper end of the watershed.	Student Intern	2005	
		WQUAN3b--Visit and/or discuss with other areas of the State that have completed similar downsizing projects the pros and cons of downsizing culverts	Managers, DNR, BWSR & MPCA	2006	

Major Area	*Goal*	*Action Policy*	*Responsibility*	*Timeframe*	*Cost*
		WQUAN3c--Develop a report on the study and decide if the District wants to move forward with a demonstration project.	Admin Services	2007	
Stewardship/ Education (STEW)	**1.Understand Watershed Concept**	**STEW1-**-Residents, landowners and government officials will be provided information of the concept of the watershed and that individual land use practices and choices determines the quality of water resources. Work with the DNR watershed coordinator to provide this information piece.	Admin services and DNR	2004	1000.00
	2.Understand Water Resources	**STEW2--**Residents, landowners and government officials will be provided information on the basics of lake, stream and wetland factors the impact water quality, flood control and wildlife habitat.	Admin services, DNR, BWSR & MPCA	2004-2006	1000.00 per year
	3. Communications - Residents, landowners, local, state and federal govt. will be given updates of District initiatives, projects & challenges.	**STEW3a**--Maintain an active citizen advisory committee to provide input and assistance on District activities	Managers	On-Going	
		STEW3b--Develop a public information piece that can be distributed to landowners that brings them information that will benefit them as landowners and also the watershed. Information pieces could include: Watershed basics, success stories of BMP's in watershed, current and future projects, annual report of activities of board.	Admin services, Managers, BWSR and MPCA	On-Going	1000.00 per year

Part IV. Administrative Procedures

1. Funding of District Activities
   The Turtle Creek Watershed District intends to fund most of it's administrative and plan activities through the district wide administrative levy. The levy authority for watershed programs is under Minnesota Statues 103B and 103d.

   The District reserves the right to consider other financing mechanisms such as sub watershed taxing in special circumstances or special cases.

   The District may also pursue additional financial resources such as grants, donations, in-kind services and /or participation by other governmental units or agencies. By pursuing these funding sources it can greatly reduce the District's financial burden when implementing projects. Federal, State and local grant opportunities include the following:

Program	Grant Possibilities	Agency
Environmental Quality Incentive Program (EQIP)	Practices & Education	NRCS
319 EPA Funding	Monitoring & Practices	MPCA
Clean Water Partnership	Monitoring & Practices	MPCA
Conservation Partners	Education & Habitat	DNR
Flood Damage Reduction	Water Management	DNR
Challenge Grants/Water Planning	Education, Monitoring and Conservation	BWSR
Water Planning	Practices & Education	Freeborn County

2. Anticipated Date of Plan Revision
   The anticipated effective term for the plan is 10 years following adoption, or 2013. The District will conduct an review of the plan in 2008 with input of the Citizen Advisory committee to amend the plan if necessary.

3. Plan Amendment
   The District recognizes the need to amend the Plan from time to time to reflect changes in proposed land uses, update technical data as more accurate site information become available, and to modify goals, policies and standards and implementation procedures as a result of future legislation or problems become evident.

4. Annual Monitoring and Evaluation
   Any Watershed management plan requires an annual monitoring and evaluation program to review activities that were completed, if necessary, to reprioritize implementation activities in the watershed to meet local needs or to capitalize on funding opportunities from other programs. To accomplish this, the District will develop an annual activity report which is compliant with Minnesota Statutes Section 103D.

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