



# **ANOKA CONSERVATION DISTRICT**

## **COMPREHENSIVE PLAN 2008-2009**

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## Introduction

The Minnesota Board of Water and Soil Resources requires soil and water conservation districts to prepare and biennially update comprehensive plans to qualify for state funding. A comprehensive plan must also be filed with the U.S. Department of Agriculture for a district to receive assistance from the Natural Resource Conservation Service.

The Anoka Soil and Water Conservation District (Anoka Conservation District) has prepared its comprehensive plan to provide a framework for an overall natural resource management program in Anoka County. Pursuant to this natural resource management program, future annual work plans will be developed to identify objectives and goals within the Comprehensive Plan. The Anoka Conservation District Comprehensive Plan promotes inter-agency cooperation and coordination for the preservation and conservation of the natural resource base in Anoka County.

The Anoka Conservation District has a board of supervisors with a variety of expertise. Currently serving are: Kim Kovich (Chair) a high school/college environmental educator and realtor, Mary Jo Truchon (Member) a community activist, artist and environmental educator, Vici Nass (Treasurer) a laboratory technician, wildlife rehabilitator and environmental educator, Sandra DeLaForest (Member) registered nurse and business owner, and Sean Sullivan (Vice Chair) a specialist in property tax administration with county and city government, and experience in city planning. The District employs eight people with 6.5 full time equivalents: Chris Lord (District Manager), Dennis Rodacker (Wetland Specialist), Becky Wozney (Conservation Technician), Kathy Berkness (Administrative Assistant), Jamie Schurbon (Water Resource Specialist), Gregg Thompson (Landscape Restoration Specialist), Shawn Tracy (Landscape Restoration Specialist), and Nate Zwonitzer (Assistant Conservation Technician).

The plan contains the following:

- District mission,
- brief historical background,
- soils information,
- resource conservation problems,
- cost share program requirements,
- future strategies and objectives,
- current policies,
- adjustments in authorities or programs,
- staffing requirements,
- budgetary needs,
- research, monitoring and inventories, and
- cooperation with other government agencies.

## **Anoka Conservation District Mission**

The mission of the Anoka Conservation District is to:

- inform and assist county residents and landowners in natural resource management,
- conduct research and monitoring for soil and water conservation,
- promote practices for soil and water conservation,
- and serve as a guide to local units of government in land use planning.

## Anoka County Background

The Anoka Conservation District was formed in 1946 at the request of Anoka County residents to address major erosion problems. Over the years, attention to agricultural erosion related problems has slowly changed to primarily urban related erosion and water quality problems. Because the county is generally flat, run-off in agricultural areas has never been extensive and has been addressed through previous programs. Windbreaks and shelterbelts are prevalent across the county, as well as are several functioning agricultural waste systems. There are needs for more grassed waterways, sediment basins, nutrient and pesticide use reduction, conservation tillage and promotion of upland and wetland wildlife habitat enhancement.

Anoka County's natural resource base supports a rapidly growing population of just over 300,000 people with homes and living space, woodlands and forests, abundant surface water, drinking well water from various groundwater aquifers, agricultural production, numerous industries, commercial clusters, vast park land areas and lakes for recreation. If this natural resource base is allowed to deteriorate, the well being and quality of life of every Anoka County resident will be diminished.

Anoka County has a total land area of 273,450 acres. Approximately 50% of the county is densely to moderately densely urbanized. The County continues to urbanize at a rapid rate. The agriculture of Anoka County is primarily in the northwestern portion of the county with isolated pockets in the west, north and southeast.

The soils of central Anoka County are primarily sandy with large areas of organic soils. Soils in the southeast and northwestern portions of the county are loamy tills with textures ranging from sandy to clayey. Rum River, in the southeastern, western and northwestern sectors and adjacent to the Mississippi River. Anoka County has hundreds of lakes and wetland marsh areas. The overall water table of the county is relatively high. Approximately 33% of the county is made up of hydric soils with an historic water table of less than four feet from the surface.

**Table 1: Anoka County Landuse**

<b>Landuse</b>	<b>Acreage</b>	<b>Percent</b>
Agriculture	70,350	25.7
Residential	121,021	44.2
Commercial	7,410	2.7
Industrial	6,115	2.2
Water	8,870	3.2
Other	59,684	22.0
<b>Total</b>	<b>273,450</b>	<b>100.0</b>

*Anoka County GIS, March 28, 2005*

# Soil Survey of Anoka County, Mn USDA Sept. 1977

**Table 2: Soils of Anoka County**

Alluvial Land	Growton Fine Sandy Loam	Meehan Sand
Anoka Loamy Fine Sand Series	Hayden Fine Sandy Loam Series	Millerville Mucky Peat
Becker Very Fine Sandy Loam	Heyder Fine Sandy Loam Series	Mora Fine Sandy Loam
Blomford Loamy Fine Sand	Hubbard Coarse Sand Series	Nessel fine Sandy Loam
Graham Loamy Fine Sand Series	Isan Sandy Loam	Nowen Sandy Loam
Brickton Silt Loam	Isanti Fine Sandy Loam	Nymore Loamy Sand Series
Cathro Muck	Kingsley Fine Sandy Loam Series	Rifle Series
Chetek Sandy Loam Series	Kratka Loamy Fine Sand	Rondeau Muck
Cut and Fill Land	Lake Beaches	Ronneby fine Sandy Loam
Dalbo Silt Loam	Langola Loamy Sand	Sartell Fine Sand Series
Dickman Sandy Loam Series	Lino Loamy Fine Sand	Seelyeville Muck
Duelm Loamy Coarse Sand	Loamy Wetland	Soderville Fine Sand
Dundas Loam	Lupton Muck	Webster Loam
Emmert Series	Markey Muck	Zimmerman Fine Sand Series
Glencoe Loam	Marsh	

**Table 3: Hydric Soils of Anoka County**

Alluvial Land	Kratka Loamy fine Sand	Nowen Sandy Loam
Blomford Loamy Fine Sand	Lake Beaches	Rifle Mucky Peat
Brickton Silt Loam	Loamy Wet Land	Rifle Muck, Woody
Cathro Muck	Lupton Muck	Rifle Soils, Poned
Dundas Loam	Markey Muck	Rondeau Muck
Glencoe Loam	Marsh	Seelyeville Muck
Isan Sandy Loam	Millerville Mucky Peat	Webster Loam
Isanti Fine Sandy Loam		

**Table 4: Highly Erodible Soils of Anoka County**

Chetek Sandy Loam, 6-12% Slope	Heyder Fine Sandy Loam, 18-30% slope
Emmert Gravely Coarse Sandy Loam, 6-12% slope	Heyder Complex, 12-25% slope
Emmert Gravely Coarse Sandy Loam, 12-25% slope	Kingsley Fine Sandy Loam, 12-18% slope
Emmert Complex, 4-12% Slope	Kingsley Fine Sandy Loam, 18-25% slope
Emmert Complex, 12-25% Slope	Nymore Loamy Coarse Sand, 12-25% slope
Hayden Fine Sandy Loam, 6-12% slope	Sartell Fine Sand, 12-24% slope
Hayden Fine Sandy Loam, 12-25% slope	Zimmerman Fine Sand, 12-24% slope
Heyder Fine Sandy Loam, 12-18% slope	

**Table 5: Questionable Highly Erodible Soils**

Braham Loamy Fine Sand, 6-18% slope	Kingsley Fine Sandy Loam, 6-12% slope
Heyder Fine Sandy Loam, 6-12% slope	

### ***Zimmerman-Isanti-Lino Association***

This soil association is mainly a broad undulating sand plain. The naturally occurring high water table is at or near the surface in most depressed areas. Steeper slopes occur next to drainage ways and large depressions. This association makes up about 50% of the county. It is about 45% Zimmerman, 15% Isanti, 10% Lino and 30% soils of minor extent. Much of this association is well suited to urban development. In some areas, however, a high water table severely limits many uses. The association is moderately well suited to farming and provides sites for recreational facilities. Fertility and available water capacity are low. Main concerns of management are controlling soils blowing, improving fertility, and controlling the level of the water table in low lying areas. Much of this association is used for urban development, with additional areas being urbanized every year. Small acreages are used as rural residences or are farmed. Corn, soybeans, and alfalfa are the crops commonly grown. Many former farm fields are planted to coniferous trees which are harvested as Christmas trees. Truck crops and cultural sod are grown on drained organic soils. Additional acres provide wildlife habitat and sites for recreational facilities.

### ***Rifle-Isanti Association***

This soils association is a series of large level bogs and wetlands dominated by organic soils and small sandy island like features that raise several feet above the level of the surrounding bogs. The water table is high. This association makes up about 17% of the county. It is about 60% Rifle, 20% Isanti, and 20% soils of minor extent. Most of this association is poorly suited to urban, farm and recreational uses. Natural fertility is moderate to low. Available water capacity is low to very high. The chief management need is controlling the level of the water table. Drained organics are largely planted with sod and vegetables but have more recently been converted to uses such as golf courses.

### ***Hubbard-Nymore Association***

This soil association is mainly a nearly level to gently sloping outwash plain that is dissected by drainage-ways and pitted by large depressions. Steeper slopes occur next to these large depressions and drainage-ways. This association makes up about 15% of the county. It is about 40% Hubbard, 35% Nymore and 25% soils of minor extent. It is well suited to most urban uses and is moderately well suited to farming and recreation. Fertility and available water capacity are low. The chief management needs are controlling soil blowing, improving fertility, and controlling the level of the water table in low-lying areas. Much of this association is under urban development. Small areas are cultivated. At a few locations, potatoes are grown under irrigation. Poorly drained areas are used for permanent pasture, recreation and wildlife.

### ***Heyder-Kingsley-Hayden Association***

This soil association is a gently undulating to steep morainic landscape of short irregular slopes, scattered small lakes, and scattered depression of organic soils.

This association makes up 10% of the county. It is about 40% Heyder, 20% Kingsley, 10% Hayden and 30% soils of minor extent. Much of this association is well suited to urban development. In some areas, however, poor drainage severely limits many uses. The association is well suited to farming and provides recreational facilities. Fertility and available water capacity are medium to high. Main concerns of management are controlling water erosion and the level of the water table in low-lying areas. Much of this association is farmed. A few steep areas and undrained wetland areas are used for recreation and wildlife. Crops commonly grown are corn, soybeans, and alfalfa. Small acreages are used as rural residences. The urban trend is increasing.

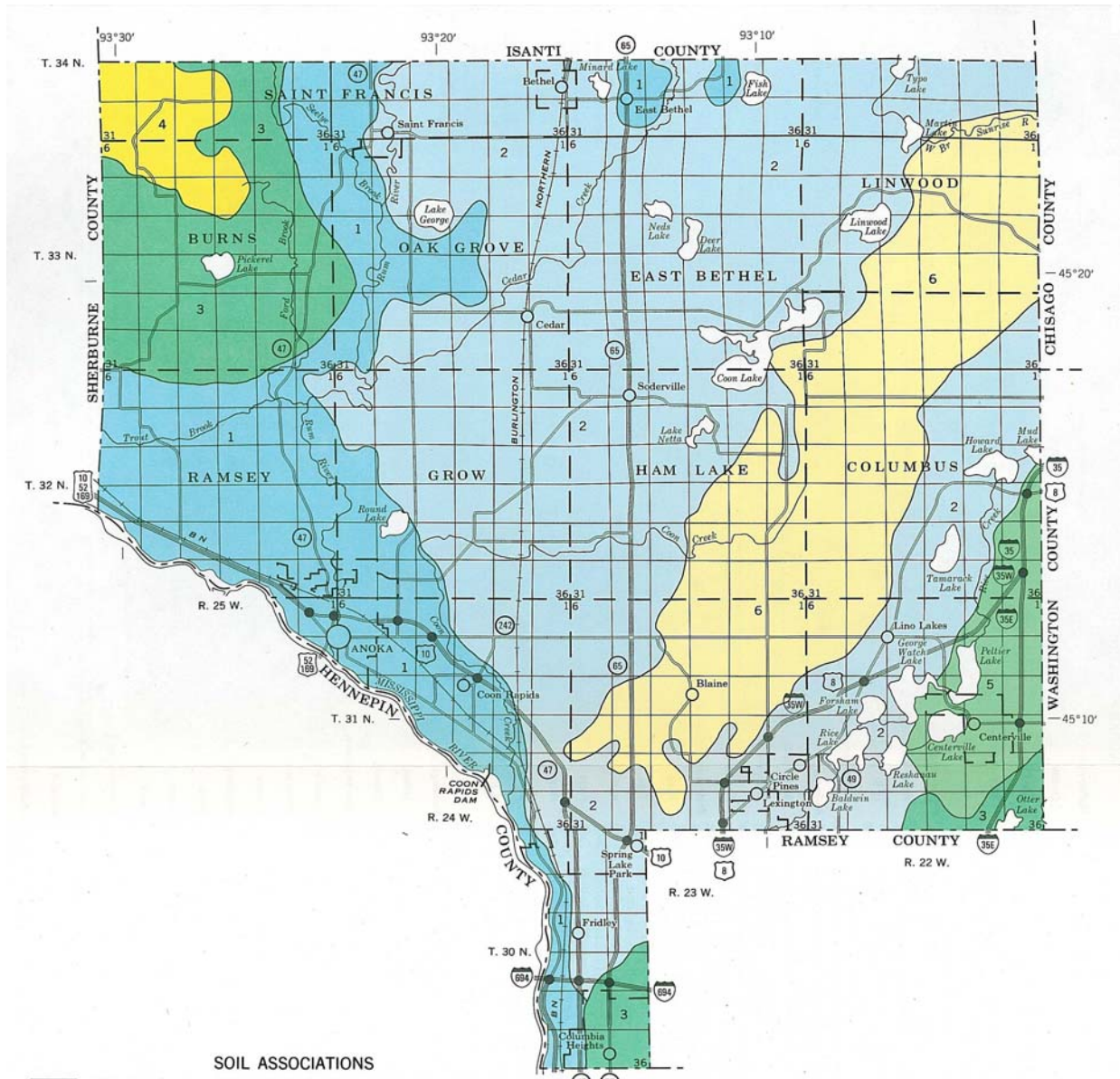
### ***Nessel-Dundas-Webster Association***

This nearly level to gently sloping soil association is a series of undulating ground moraines. Steeper slopes are adjacent to large bogs and drainage-ways. All slopes are short. The soil association makes up about 5% of the county. It is about 35% Nessel, 15% Dundas, 15% Webster and 35% soils of minor extent. Much of this association is moderately to poorly suited to most urban uses. It is well suited to farming and provides sites for recreational facilities. Fertility is high, and the available water capacity is very high. The chief management needs are controlling the level of the water table in low lying areas, controlling erosion in the more sloping areas, and maintaining fertility. About half of the association is farmed. Commonly grown crops are corn, soybeans, and alfalfa. Some undrained wet areas are used for recreation and wildlife. The increasing urban trend is expected to continue.

### ***Emmert-Kingsley Association***

This soil association is a gently undulating to steep morainic landscapes of short irregular slopes and scattered small marshes and depressions of organic soils. This association makes up 3% of the county. It is about 45% Emmert, 30% Kingsley and 25% soils of minor extent. Much of this association is moderately well suited to urban uses and is moderately well-poorly suited to farming and recreational uses. The small areas that are poorly drained are severely limited. Fertility and available water capacity range from very low to high. The chief management needs are controlling water erosion and controlling the level of the water table in low lying areas. A large part of this association is an ordnance de-arming ground. Only a small part is farmed because the soils are steep and droughty. Commonly grown crops are alfalfa, corn silage, and oats. Few areas are used for recreation and wildlife. Small acreages are rural residences. The urban trend continues to increase.

# General Soils Association Map



## SOIL ASSOCIATIONS

- 1 Hubbard-Nymore association: Nearly level to gently sloping, excessively drained soils that are sandy throughout
- 2 Zimmerman-Isanti-Lino association: Nearly level to undulating, excessively drained, somewhat poorly drained, and very poorly drained soils that are dominated by fine sands throughout
- 3 Heyder-Kingsley-Hayden association: Gently undulating to steep, well-drained soils formed in loamy glacial till
- 4 Emmert-Kingsley association: Gently undulating to steep, excessively drained and well drained soils formed in loamy and sandy glacial drift
- 5 Nessel-Dundas-Webster association: Nearly level to gently sloping, moderately well drained and poorly drained soils formed in loamy glacial till
- 6 Rifle-Isanti association: Nearly level, very poorly drained soils formed in organic material and fine sand

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
UNIVERSITY OF MINNESOTA AGRICULTURAL EXPERIMENT STATION

## GENERAL SOIL MAP ANOKA COUNTY, MINNESOTA

Scale 1:190,080  
1 0 1 2 3 4 Miles

Compiled 1974

## **Resource Conservation Issues**

It is not possible for the District to address all issues of degraded natural resource quantity and quality. The following outlined list shows where the district will focus its limited financial and staff resources. This list was developed by the Board of Supervisors with consideration of input from the public and agency staff and officials.

1. Natural Habitats
  - Natural Communities
  - Wildlife Connectivity
  - Wetlands
  - Preservation/Enhancement
2. Water Quality
  - Lake
  - Stream/River
  - Groundwater
  - Wetlands
3. Development Impacts (minimize negative impacts)
  - Guidance
  - Assistance
  - Education
  - Local Accountability
4. Private Land Stewardship
  - Conservation Easements
  - Lakeshore/ Stream Restoration
  - Rain Gardens
5. Influencing Public Policy
  - State Legislature
  - City Ordinances

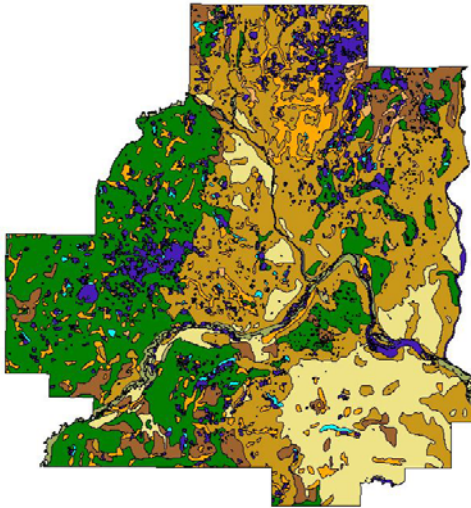
### ***Natural Habitats***

Protection and enhancement of natural habitats ranks high with Anoka Conservation District not only because having abundant wildlife improves the quality of life in Anoka County, but because it is one of the least regulated resource concerns. The lack of regulation is resulting in rapid losses of habitat and the wild flora and fauna it supports. Few programs exist to address these losses.

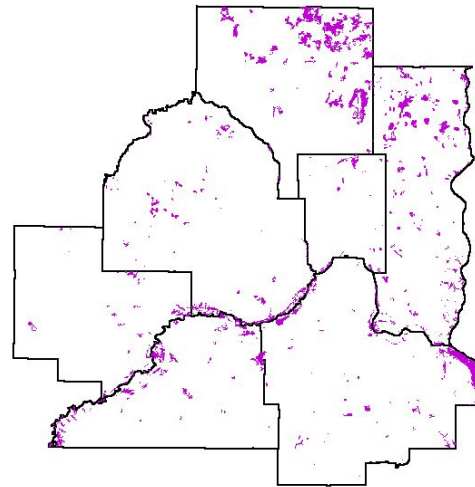
### **Natural Communities:**

Anoka County has the highest concentration of MN County Biological Survey mapped natural communities in the metro area. These areas are recognized as pristine ecological systems, existing today in much the same condition as they did prior to European settlement of the area. Preservation of the few remaining natural communities is a high priority for ACD. Preservation of these areas will be pursued and encouraged at the local and state levels.

Presettlement Vegetation

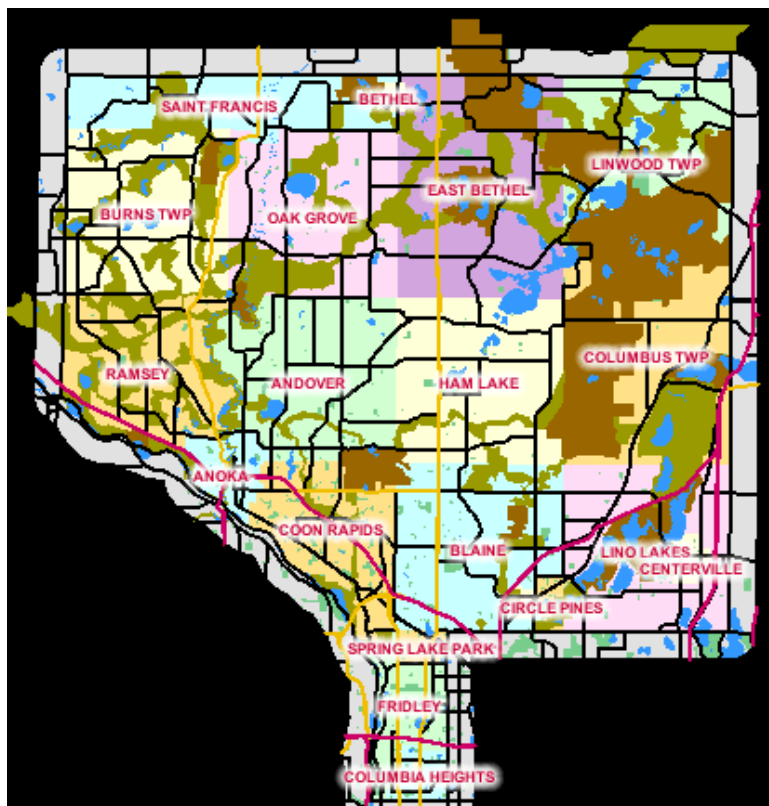


Remaining Natural Communities



**Wildlife Connectivity:**

ACD developed a wildlife corridor plan as a part of the land cover inventory and greenway planning efforts completed from 1999 through 2005. ACD will continue to work with private landowners and local, county, state and federal government programs to help manage lands in a way the allows them to serve as effective wildlife habitat and travel corridors.



### **Wetlands:**

Wetland provide many function and values to Anoka County residents including water quality, flood control, wildlife habitat and open space. To preserve and enhance wetland functions and values in the county, the ACD supports activities which avoid direct and indirect impacts, restore wetlands for flood control and water quality treatment, provide buffer strips around wetlands basins, replace losses in the same watershed or where most needed, avoid natural community wetlands, and restore wetland plant communities for habitat.

Since the inception of the Wetland Conservation Act (WCA) of 1991, wetland losses have decreased dramatically. ACD staff has helped to better educate Local Government Unit (LGU) employees, officials, and residents on the value of wetlands and how to determine if an area is a wetland. ACD is the clearinghouse for information and answers to most WCA related questions.

In addition to providing information, ACD acts as a quality control mechanism by:

- reviewing replacement plans, banking plans and delineations,
- processing wetland enforcement procedures (cease and desist orders, and restoration orders),
- conducting wetland boundary delineations, and
- monitoring replacement wetlands.

In addition to these services, the ACD conducted an assessment of wetland hydrology in hydrologically altered wetlands on mineral and organic soils. Results of the study provided insight on how to conduct hydrologic monitoring to improve the accuracy of determinations. From this study, ACD realized the need to continuously monitor wetland water levels throughout the county as a reference for comparison with wetlands under question. Currently nineteen reference wetlands are being monitored by continuous electronic wells.

### **Preservation/Enhancement:**

Preservation of parcels that are of particular importance for wildlife habitat is a high priority. Efforts to preserve land should be limited to parcels that fall within the identified wildlife corridor network, notwithstanding modifications to the corridor plan. Local government units have broad authorities to help preserve high priority parcels during the development process. Continuing to work with them to develop plans and procedures to facilitate this will remain a strategy of the ACD.

Whether or not a property has permanent protection or natural communities, it still has the potential to provide wildlife habitat. Working with landowners to enhance the wildlife value of their property will continue to be a service of the ACD. Ecosystem restoration and enhancement will be done by providing both technical and financial assistance utilizing programs such as WHIP, EQIP, and Conservation Partners Grants.

## Water Quality

Water quality is among the most important resource concerns shared by the public. Most resource agencies, such as the MPCA, BWSR, DNR, EPA, Met Council, watershed districts and watershed management organizations have programs that focus on the preservation and improvement of water quality. This is the reason that it was not listed as an ACD top priority. We will, however, continue to work with our partners, and independently, to protect and improve our most precious water resources. ACD monitors water quality and quantity in partnership with several local water management organizations. Results are published annually in a water resources almanac and are made available on the internet through a data query and charting tool.

### Lakes:

Lake water quality is typically measured using three parameters; secchi disk depth, Total Phosphorus, and Chlorophyll-a. An index of these parameters allows us to grade the quality of our lakes, as shown in the table below.

Year→	88	89	90	91	92	93	94	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007
Coon		C					C				C	B	A	B	C	B		C		C
Crooked		C					B	C	B	B	B			B		B	B		B	B
E. Twin		B						B		A	B	A	A		A			A		
Fawn	B									A	B	A	A	A	A		A		A	
George		A					B			A	B	A	A		A			B		
Ham						A	B		A	A	B			C	C	B		B	B	B
Howard		F	F	F							F	D	D							
Itasca											A	B	B							
Laddie						B	B	B			B	B	B	B	B	B	B	B	B	
Linwood		C					C			C	C	C	C	C		C		C		C
Martin										D	D	C	D	D		D		D		D
E. Moore							C				C	B	B	C	C	C		C		
W. Moore												B	B	C	C	C		C		
Mud						B						B	C							
Netta										B	C	A		B		A	A		B	B
Pickerel								B		A	A	B	C							
Rogers											C		C			B				D
Round											B	A	B			A		B		C
Sandy						D	D	D		D	D	D	D	D	F	D	D	D		
Typo						F	F	F		F	F	F	F	F		F		F		F

While it is important to continue to monitor water quality, it is more important to install projects that will enable good water quality lakes to remain that way and poor water quality lakes to improve. It is also important to educate lakeshore owners about how to manage their property to maintain and improve water quality in the lake.

### **Streams/Rivers:**

There are several streams that flow to the Mississippi River and one that flows to the St. Croix River in Anoka County. Rice Creek, Coon Creek, the Rum River, Springbrook, Pleasure Creek and Stoneybrook all flow to the Mississippi River that forms the southwestern boundary of Anoka County. The Sunrise River flows north and east to the St. Croix River. Coon Creek and Rice Creek both have watershed districts that act as the primary resource manager so they are of lower priority to ACD. The Sunrise River flows through Carlos Avery WMA and several lakes in northeastern Anoka County. The watershed for Sunrise River is comprised of a lot of public land and is sparsely populated. Efforts to improve the Sunrise River are limited to projects that work to improve the lakes through which it flows. Pleasure Creek, Springbrook and Stoneybrook are all small tributaries that flow directly into the Mississippi River. They are all in heavily developed watersheds. The Rum River begins at Lake Mille Lacs and has a watershed of over one million acres. Its confluence with the Mississippi River is in Anoka.

The Rum River and its tributaries have been identified as ACD's highest priority watershed for several reasons. 1) It currently has good water quality, 2) it provides recreational benefits including fishing, swimming, and canoeing, 3) its watershed comprises over one third of Anoka County, 4) it does not have a watershed district, and 5) its watershed includes areas of dense development, redevelopment and sparse development so there are many opportunities to make positive impacts in the watershed.

ACD conducts routine biological monitoring and chemical monitoring in select areas throughout the watersheds in the county and does special diagnostic studies under contract with WMOs. We have conducted TMDL studies for two lakes and anticipate working with MPCA to complete more. Projects aimed at improved water quality in Anoka County's streams and rivers vary from watershed wide landuse planning, to development based stormwater management, to multi-landowner riverbank stabilizations and restoration, to small residential rain gardens. Water quality improvement and protection is something that ACD staff are trained to consider in all aspects of the services provided.

### **Groundwater:**

Groundwater is the primary drinking water source for residents of Anoka County. Municipalities can help protect groundwater using landuse controls. Groundwater protection through landuse controls is enhanced by the identification of wellhead protection zones. In Anoka County, most of the residents rely on groundwater from either municipal or private wells for drinking

water. In some municipalities, wells have already become contaminated and may no longer be used for drinking water. Identification of wellhead protection zones can enhance resource management in two ways. First, they can enable resource managers to more quickly narrow in on a pollution source when contamination occurs. Second, they can enhance planning and zoning efforts that minimize the likelihood of contamination by prohibiting high risk activities within the well head protection zone. Several municipalities are working together under the umbrella of the County Groundwater Protection Assessment.

The ACD conducted a pilot unused well inventory in the cities of Coon Rapids and Oak Grove in 1992. Data were extrapolated to the whole county to provide an estimate of 13,000-15,000 unused wells in the county. Given the shallow groundwater and permeable soils which subject the upper sand aquifers to non-point contamination from general land use practices, the wells of highest priority for sealing are those in deeper aquifers which penetrate a confining layer. In 1995-1996 the ACD conducted a pilot unused well sealing cost share program that assisted residents with the sealing of approximately 60 wells. During the promotion of the program, the importance of sealing unused wells was explained through many media. The educational benefits of such a program far outweigh the benefits from actually sealing the wells.

Although wells are to be sealed during property transfer, they are often missed due to lack of disclosure by the property owner. In order to improve the effectiveness of this sealing by disclosure program, institutional changes will have to be made on the part of the Minnesota Department of Health.

### **Wetlands:**

Wetlands have many regulatory protections in recognition of the role they play in maintaining water quality in our lakes and rivers. Utilizing wetland characteristics to assimilate nutrients, trap sediment, and attenuate flood waters can result in degradation to the wetland's ecology. It is important to balance the quality of the wetland against the benefits it can provide under active use. Wetland quality and position in the landscape are routinely considered by ACD staff when making management recommendations.

### ***Development Impacts***

Development has both short and long term impacts. During the development and construction phase, there are short term impacts due to erosion from improperly managed sites. Long term impacts are ultimately more important and include loss of habitat on site and water quality and quantity impacts both on site and downstream. ACD can work to minimize both long term and short term impacts by working with local permitting authorities during the development review process.

**Guidance:**

Some permitting authorities request the input of ACD during the development review process. ACD uses this opportunity to make recommendations on topics ranging from habitat protection and enhancement to storm water routing, water quality protection and ground water recharge. Being involved in the development review process enables ACD staff to make progress on several of the high priority resource problem areas.

**Table 6: Plats Reviewed by Anoka Conservation District**

<b>Year</b>	<b>Plats Reviewed</b>	<b>Year</b>	<b>Plats Reviewed</b>	<b>Total Lots</b>	<b>Total Acres</b>
1986	12	1992	15	222	736
1987	19	1993	29	542	1694
1988	18	1994	24	397	1163
1989	30	1995	34	645	2203
1990	20	1996	15	216	1006
1991	21	1997	17	184	626
		1998	8	75	362
		1999	9	116	496
		2000	15	208	858
		2001	12	92	489
		2002	17	562	1171
		2003	18	186	865
		2004	23	483	1866
		2005	15	157	859
		2006	12	90	659
		2007	3	39	216

**Assistance:**

ACD may assist LGUs with the implementation of NPDES, particularly the educational or site inspection components. Permitting authorities in Anoka County typically have full time staff to address these needs. Some contract to engineering firms for some aspects of the mandates, but have failed to comply with the educational mandates.

**Education:**

ACD can provide a vital role to LGUs by helping them to address the educational components of NPDES regulations.

**Local Accountability:**

Vigilance on the part of ACD staff during the course of daily activities to take notice of development activities being undertaken throughout the county and bring issues that we notice to the attention of permitting authorities can help to ensure local accountability. This could be taken to the level of contracting with permitting authorities to conduct development site inspections for them.

## ***Private Land Stewardship***

Working with private landowners is the hallmark of soil and water conservation districts. Most of Anoka County remains in private ownership. ACD will continue to work with willing landowners to implement conservation practices on their properties. We anticipate the bulk of our workload in this area will be with conservation easements, lakeshore and streambank restoration, rain gardens, and habitat improvement projects.

The Association of Metro Soil and Water Conservation Districts, with funding from the Natural Resources Conservation Service employs two landscape restoration specialists. These employees are housed in the ACD office but serve the seven county metro area. In several counties, lakescaping design and project management is the primary service provided. In Anoka County, projects planned under this position included lakeshore restoration, riparian corridor habitat restoration, rain gardens, and backyard conservation design.

### **Conservation Easements:**

Anoka Conservation District is able to hold conservation easements and has only recently initiated a program to do so. In 2005 ACD accepted its first donated conservation easement on 55 acres in Burns Township. In October 2007 the City of Anoka donated a conservation easement to ACD on nearly 200 acres of mixed forest and fields along the Rum River. A landowner in St. Francis donated a conservation easement on 65 acres to the MN Land Trust and plans to donate the fee title to ACD in the future. ACD staff will continue to work with the landowner to implement the natural resources management plan over the coming years. Annual inspections of easements along with contact with the landowner are critical to ensure that the terms of the easement are not violated. ACD's policy is to partner with the local municipality so that they can assume the enforcement authority.

### **Lakeshore and Streambank Restoration:**

Erosion along stream banks and lakeshores is also prevalent in Anoka County. Extensive ditching throughout the county has altered the hydroperiod of the natural streams and creeks. This has led to more dramatic bounces in water elevation that are in many cases sustained for a longer time period than pre-settlement. Changes to the hydrologic system such as these have the unfortunate consequence of accelerated streambank erosion.

Streambank and lakeshore erosion are moving targets, as are most natural processes. The ACD has not conducted an inventory of erosion sites as it would be outdated by the following year. New erosion problems develop and others naturally stabilized with the passing of each season. The ACD has allocated the limited funds received to treat erosion problems to individuals and groups who respond to press releases and express an interest in implementing conservation practices on their land. Since 1990 we have helped fund the following projects:

**Table 7: Anoka Conservation District Cost Share Projects**

<b>Year</b>	<b>Location</b>	<b>Description</b>
1990	Burns Township	Diversion
1990	Rice Creek WD	Phase I - Streambank Stabilization and Dam Removal
1992	Coon Creek WD	Streambank Stabilization - Rip Rap
1992	Fridley - RCWD	Streambank Stabilization - Rock Rip Rap
1992	Rice Creek WD	Phase II - Streambank Stabilization and Dam Removal
1994	Cedar Creek	Streambank Stabilization - Grading and Re-vegetation
1994	Coon Creek WD	Streambank Stabilization
1996	Columbia Heights	Grade Stabilization, Outlet Stabilization
1997	Fridley - RCWD	Streambank Stabilization – Rock Rip Rap
1998	Linwood –Martin Lake - Simonson	Lake Shore Stabilization – Rock Rip Rap and Veg. Buffer
1999	Fridley – RCWD	Streambank Stabilization – Rock Rip Rap – Grade Stab.
1999	Fridley- Rice Creek - Woodcrest	Streambank Stabilization – Rock Rip Rap – Gully Stab.
2000	Coon Rapids – Mississippi River - Dam	Streambank Stabilization – Rock Rip Rap – Buffer
2001	Ramsey – Rum River Central Park	Streambank Stablization – Rock Vanes – Bioengineering – Buffer – Root Wads
2001	Fridley – Moore Lake – City Park	Lakeshore Native Plant Buffer
2002	Ramsey – Rum River - River’s Bend	Streambank Stabilization – Bolder Armament – Native Plant Buffer
2002	Anoka – Rum River South Park	Stream Native Plant Buffer – Rain Garden
2002	East Bethel - Coon Lake - Aymar	Shoreland Buffer
2003	Anoka – Mississippi River - Chamberlain	Riverbank Stabilization – Cedar Tree Revetment – Native Plant Buffer
2003	Oak Grove – Lake George - Faherty	Shoreland Stabilization – Native Plant Buffer
2003	Ramsey – Mississippi River - Johnson	Riverbank Stabilization – Native Plant Buffer
2004	Linwood – Typo Lake - Molitor	Shoreland Stabilization – Native Plant Buffer
2005	Fridley – Locke Lake - Ficenko	Shoreland Stabilization – Native Plant Buffer
2005	Fridley – Locke Lake - Schultz	Shoreland Stabilization – Native Plant Buffer
2006	East Bethel – Coon Lake – Rogers (Brough)	Shoreland Buffer
2007	Coon Rapids – Crooked Lake - Linderberg	Shoreland Buffer

### **Rain Gardens:**

Rain gardens are also known as bio-infiltration basins and in essence are a small aesthetically pleasing garden-like planted depression that holds stormwater runoff long enough to allow it to infiltrate. Complete infiltration should occur with two days in a properly designed rain garden. Rain gardens can fit into any sized landscape and while there may not be sufficient area to treat all runoff from a site, rain gardens are most often designed to capture as much runoff as possible for the available area. Any runoff that can't fit into the rain garden simply bypasses the system and is untreated. For this reason, rain gardens are not used to replace conventional stormwater treatment, but rather to supplement it. They are particularly useful in urban retrofit projects, where space is limited and the original development may have occurred prior to stormwater treatment requirements.

**Table 8: Anoka Conservation District Rain Garden Projects**

<b>Year</b>	<b>Location</b>	<b>Description</b>
2002	Anoka – Rum River South Park	Boat Landing Parking Area Rain Garden and Riverbank Buffer
2004	Andover - Bickford	Residential Rain Garden
2004	Andover – Barbur	Residential Rain Garden
2004	Andover - Churchich	Residential Rain Garden
2004	Andover - Dietzler	Residential Rain Garden
2004	Andover – Eide	Residential Rain Garden
2004	Coon Rapids – Lach – Crooked Lake	Residential Rain Garden & Lakeshore Buffer
2004	Andover – Thompson	Residential Rain Garden
2005	Ramsey - Glosimodt	Residential Rain Garden
2006	Centerville - Lakso	Residential Rain Garden
2006	Anoka – Mueller	Residential Rain Garden
2006	Blaine – Ochocki	Residential Rain Garden
2006	Blaine – Olsvig	Residential Rain Garden
2006	Columbia Heights - Pham	Residential Rain Garden
2006	Fridley – Reynolds	Residential Rain Garden
2006	Columbia Heights – Rombalski	Residential Rain Garden
2006	Linwood - Searing	Residential Rain Garden
2006	Columbia Heights – Zimmer	Residential Rain Garden

### ***Influencing Public Policy***

#### **State Legislature:**

ACD receives approximately one third of its budget from the county, one sixth from the state and one half from grants and fees for service. The instability and

origin of funding places District programs and priorities at the mercy of external forces, which do not lend themselves to addressing the most pressing resource needs of the county. A stable funding source is needed in order for the ACD to have the freedom and capacity to meet the needs of the public without having to compromise the resource by following limited grant opportunities or bowing to pressures to maximize property tax revenue.

**City Ordinances:**

LGU councils/staff could enhance decision making with improved data and inventories. LGU councils and staff are required to make important decisions that have lasting effects with limited information. The ACD is in a position to collect data and conduct inventories in a cost effective manner and supply that data to LGU's. A list of current and needed research, monitoring and inventories is provided later in this plan.

LGU councils/staff would benefit from additional understanding of the resource and conservation measures to incorporate and implement them into their planning. Natural resource systems are complex and dynamic. The roles of wetlands in providing for recreation, flood storage, water treatment, water conveyance, etc. are poorly understood by many in authority. The ACD is in a position to assist LGU's by attending council meetings to offer clarification as necessary.

LGU councils/staff lack the monetary incentive to place a sustainable resource higher than immediate revenue and a higher tax base in their planning efforts. As long as LGU's growth and stability are largely dependent upon property taxes, their incentive is to develop as much and as quickly as possible. This directly conflicts with much of the ACD's positions on resource stewardship and management.

## **Cost-Share Program Requirements**

Cost-share programs are divided into two general categories: agricultural and urban.

### ***Nature and Extent of High Priority Agricultural Problems***

High priority erosion problems are defined as: “Erosion from wind and/or water occurring on Class I-IV soil in excess of 2T tons/acres/year of any soil within 300 feet of a stream or 1,000 feet of a water basin designated as a protected water or wetland by the DNR, eroding in excess of 2T tons/acre/year”. Those areas in Anoka County are all located in the northwest part of the county. Wind erosion is also a problem that is accounted for in this analysis. Eighteen thousand acres of sandy outwash soils have close to 2T erosion potential.

High priority sedimentation problems are defined as: “All areas within 300 feet of a stream or 1,000 feet of a lake where the erosion rate exceeds 3T tons/acre/year and where the Conservation District can show that sedimentation delivery for a watershed out-letting to these waters exceeds 2T tons/acre/year. The lake or stream must be classified by the DNR as a protected water.”

High priority feedlots are defined as: “Those feedlots where the pollution rating (from the Ag. Waste Model) is greater than or equal to one and is discharging pollutants to DNR designated protected waters or wetlands; to shallow soils overlying fractured bedrock; or within 150 feet of a water well.” Feedlots, when improperly located with respect to water resources, and improperly managed to prevent runoff from entering a lake or a stream, can downgrade water quality. There is very little available information on Anoka County feedlots and the information that is available is outdated and no longer reliable.

### ***Agricultural Conservation Measures Needed***

Practices being used to control water erosion are: conservation tillage, grassed waterways, contour farming, strip-cropping, diversions, terraces, water and sediment control basins, and critical area plantings.

Practices used to control wind erosion are: conservation tillage, field windbreaks, wind strip-cropping and permanent vegetative cover.

Practices used to control feedlot pollution are: waste management systems, waste storage ponds, waste storage structures, waste utilization plans and diversions.

### ***Nature and Extent of High Priority Urban Problems***

With a limited agricultural constituency, ACD has noted significant erosion problems associated with urban and urbanizing land uses. Streambank erosion has been accelerated by more dramatic bounces in stream elevations that last for a longer duration. Lakeshore erosion has been accelerated due to the

practice of maintaining a manicured lawn to the waters edge and wind and water erosion have become a greater concern due to mass grading on construction sites.

Ultimately, these all have the potential to degrade surface water quality. Sedimentation is the largest contributor to water quality degradation. Storm sewers are conduits for fertilizers, pesticides, chemicals, solvents, road salt, and other contaminants to open water resources. Any structural, grading or vegetative practice that has the potential to improve and protect water quality is a candidate for cost share.

### ***Urban Conservation Measures Needed***

The following conservation practices may be necessary to address high priority erosion, sedimentation, and water quality problems in Anoka County. Innovative methods are encouraged.

1. Temporary construction site erosion and sediment control practices (silt fences)
2. Grade stabilization structures (check dams, diversion)
3. Streambank and lakeshore protection (rock rip rap, bioengineering)
4. Critical area/slope stabilization (fiber blanket, revegetation)
5. Stormwater conveyance system management (ditch maintenance and ponding)
6. Model ordinances addressing erosion control, stormwater management, wetland preservation, groundwater protection
7. Reduction of sediment/chemical application to lawns and streets

## Future Strategies and Objectives

The ACD reserves the right to schedule objectives during the annual planning process. The Comprehensive Plan outlines goals, objectives and strategies without commitment to specific years.

The ACD Board of Supervisors has identified five major issues to address in Anoka County in the coming years: natural habitats, water quality, development impacts, private land stewardship, and influencing public policy. There are several means of addressing a given issue. ACD has selected the following general mechanisms: educate, fund, research, monitor, inventory, train, review, and promote.

Mechanism	Natural Habitats	Water Quality	Development (minimize impacts)	Private Land Stewardship	Influencing Public Policy
<u>Educate</u> the public by conducting presentations and developing educational materials such as brochures, newsletters, and displays to convey knowledge of and appreciation for natural resource topics dealing with priority issues.	✓	✓	✓	✓	✓
<u>Educate</u> landowners with heritage communities about land stewardship and the value of their resource by providing pertinent information on the website.	✓				
<u>Fund</u> conservation practices on high priority problems by supplying landowners with cost share funds and technical assistance.		✓		✓	
<u>Monitor</u> lake and stream water quality in the high priority water bodies to maintain a baseline of data and to identify trends		✓			
<u>Monitor</u> lake, stream, and groundwater levels to better understand water quantity trends and interactions.		✓			
<u>Monitor</u> precipitation primarily utilizing a volunteer network.		✓			
<u>Monitor</u> water resources to diagnose the nature of problems uncovered via routine monitoring.		✓			
<u>Promote</u> habitat creation and reforestation through distribution of tree and shrub seedlings at an annual sale.	✓			✓	

Mechanism	Natural Habitats	Water Quality	Development (minimize impacts)	Private Land Stewardship	Influencing Public Policy
<u>Promote</u> the establishment of a greenway network and protection of natural communities by conducting greenways planning and educational programs.	✓		✓	✓	✓
<u>Promote</u> utilization of upland buffers around wetlands to provide habitat as compensation for wetland fill beyond the 1:1 replacement minimum.	✓	✓	✓		✓
<u>Promote</u> conservation design development where feasible to maintain larger contiguous habitats.	✓	✓	✓		✓
<u>Promote</u> acquisition of heritage communities by the local, county and state parks.	✓	✓			✓
<u>Promote</u> ecological restoration of degraded wetlands.	✓			✓	
<u>Promote</u> conservation ethic to LGU's by attending council meetings to forward stewardship agenda.	✓			✓	✓
<u>Promote</u> storm water management, erosion control, and water quality awareness to LGU's by attending council or P&Z meetings to explain the rationale for recommendations supplied as part of the plat review process.		✓	✓		✓
<u>Promote</u> wise natural resource utilization by expanding plat review service to municipalities not currently utilizing the service.	✓	✓	✓	✓	✓
<u>Promote</u> water quality awareness by making sample bottles available for drinking water analysis.		✓		✓	
<u>Promote</u> water quality awareness to Lake Associations by undertaking cooperative programs to benefits lakes.	✓	✓		✓	
<u>Promote</u> disclosure of the resource limitations of a property at the time sale (soils, wetlands, flood plain, etc.).		✓	✓	✓	✓
<u>Promote</u> LGU and county funding mechanisms that are not based on property taxes thereby removing the incentive for full development without conservation.	✓	✓	✓		✓
<u>Promote</u> stable funding for SWCD's by supporting the MASWCD in its efforts and by directly contacting county commissioners and legislators.					✓
<u>Promote</u> compliance with existing statutes, rules and guidance regarding conservation issues.	✓	✓	✓	✓	✓

Mechanism	Natural Habitats	Water Quality	Development (minimize impacts)	Private Land Stewardship	Influencing Public Policy
<u>Promote</u> efforts to place the cost of environmental regulation on those responsible for its degradation (fees for discharge and grading).		✓	✓		✓
<u>Review</u> preliminary plats, DNR and COE permits and make recommendations for erosion control, habitat enhancement and protection and water quality and quantity management.	✓	✓	✓	✓	✓
<u>Review</u> WCA related permits and delineations and promote wetland avoidance/restoration/utilization for water quality treatment, flood water attenuation, and wildlife habitat and provide quality control for delineations and exemption determinations.	✓	✓	✓	✓	✓

## Current ACD Policies

ACD policies are reviewed and approved annually and are maintained as separate documents or are incorporated into employee, supervisor, or operational handbooks as appropriate.

## Adjustments in ACD Authorities and/or Programs

Resolutions to initiate the programs and services described above will be prepared as appropriate. ACD's statutorily derived authorities are sufficient to implement this plan.

## Staffing Requirements

Currently the District has six full-time employees: a District Manager, a Water Resource Specialist, a Wetland Specialist, a Natural Resources Planner, two Landscape Restoration Specialists (serving the seven county metro area), 4/5<sup>th</sup> time Administrative Assistant, a 1/4 time Conservation Technician and a 1/2 time Assistant District Technician. The District utilizes volunteers during summer months to assist with routine monitoring. If ACD assumes a large role in NPDES compliance and TMDL development and implementation, then the addition of one or two full-time seasonal employees is estimated.

## Budgetary Needs and Projections

### Expenses

Year	Personnel	Operating	Capital	District Projects	Federal Projects	State Projects	Local Projects	Cost Share
1998	129,630	38,657	3,862	26,593	0	48,928	0	10,080
1999	160,470	38,990	22,050	17,823	0	52,847	0	10,080
2000	221,887	44,335	13,429	20,815	55,183	50,538	0	13,965
2001	255,403	49,848	11,743	28,725	85,818	70,063	1,243	20,000
2002	305,817	61,310	37,406	22,655	29,164	25,651	14,018	16,893
2003	327,590	50,590	13,080	30,416	79,563	56,240	19,062	10,540
2004	389,142	52,775	2,801	28,760	81,013	56,241	45,522	14,000
2005	401,939	51,171	8,948	20,941	5,314	54,878	8,629	12,220
2006	410,736	56,909	11,647	21,385	2,928	48,286	21,431	0
2007*	451,476	60,022	19,616	21,450	7,019	92,893	19,238	0
2008*	423,501	59,500	6,106	21,650	4,400	73,979	48,049	28,000
2009*	435,000	58,000	10,000	21,750	4,000	65,000	30,000	28,000

### Revenues

Year	Charges for Services	Interest	Local Grants	County Allotment	County Grants	State General	State Grants	Federal Grants	Cost Share
1998	51,560	5,036	3,963	94,013	12,111	20,201	83,407	0	10,280
1999	56,415	4,990	3,948	98,150	13,543	19,260	81,080	0	10,280
2000	72,045	14,296	18,107	114,640	17,680	22,752	93,432	83,035	13,965
2001	76,700	7,931	15,880	126,000	19,360	24,253	100,682	118,809	20,000
2002	115,959	1,889	39,252	137,500	25,621	24,469	86,292	68,905	19,566
2003	116,962	1,471	42,635	143,233	24,574	25,304	107,077	108,039	12,442
2004	115,376	435	78,465	125,000	56,415	24,039	167,557	130,578	17,500
2005	125,133	620	20,791	138,750	39,975	25,304	139,859	67,240	15,275
2006	135,408	843	11,061	144,000	34,842	25,000	155,755	74,115	0
2007*	194,584	500	2,000	140,000	49,174	25,000	163,615	80,000	0
2008*	196,767	500	1,000	146,500	89,062	25,000	121,357	60,500	28000
2009*	195,000	500	1,000	150,000	50,000	25,000	140,000	60,500	28000

\* Projected

## Appendix

**Table 9: Cooperation with Other Government Agencies**

USDA	Watershed Districts
Nat. Res. Conservation Serv.	Coon Creek
Farm Service Agency	Rice Creek
US Army Corps of Engineers	Area IV Assoc. of SWCD's
US Geologic Survey	Assoc. of Metro SWCD's
MN Department of Natural Resources	Water Management Organizations
Forestry	Sunrise
Enforcement	Six Cities
Waters	Lower Rum
Fish and Wildlife	Upper Rum
MN Geologic Survey	Local Municipalities
Met Council	Area Schools
Board of Water and Soil Resources	League of Women Voters
MN Pollution Control Agency	University of MN
MN Assoc. of SWCD's	Non-profit groups
Anoka County	Lake Associations
Extension Service	Coon
Finance and Central Services	Martin
Community Health Env. Services	Linwood
Highway Department	Crooked
GIS	Fawn
Parks	George
Surveyor's Office	Crooked
Attorney's Office	

**Table 10: Research, Monitoring and Inventories**

<b>Activity</b>	<b>Existing</b>	<b>Needed</b>
Lake level monitoring	20 lakes	Existing is adequate
Rain gauges	32 Volunteers	Existing is adequate
Inventory drained wetlands for restoration		SRWMO, Burns, CCWD, RCWD
Land Cover MLCCS	Completed for entire county	Existing is adequate
Groundwater monitoring	14 DNR Observation Wells	1 more well in western part of county
Stream levels/hydrographs	Crest gauges in Coon Creek and continuous gauges in Rum River tributaries and in Sunrise River.	Existing is adequate
Groundwater quality	Scattered studies by Anoka Co. Env. Health and ACD, and MPCA monitoring of superfund sites.	Make sample bottles available
Surface water quality	Studies including current Rum River outlet monitoring, lake monitoring, stream monitoring in Lower Rum River WMO, Sunrise River WMO, and Rice Creek WD, biomonitoring throughout county.	Stream monitoring in Upper Rum River WMO, Six Cities WMO and Coon Creek WD.
Wetlands water levels	15 continuous monitoring gauges throughout county.	Approximately 2 more in southern and western parts of the county

Monitoring and inventory data are not extensively described in this report because all monitoring and inventory data are made available on ACD's website, [www.AnokaNaturalResources.com](http://www.AnokaNaturalResources.com) using the mapping utility and the data access tool. ACD also prepares an annual Water Resources Almanac that is distributed to WMOs.