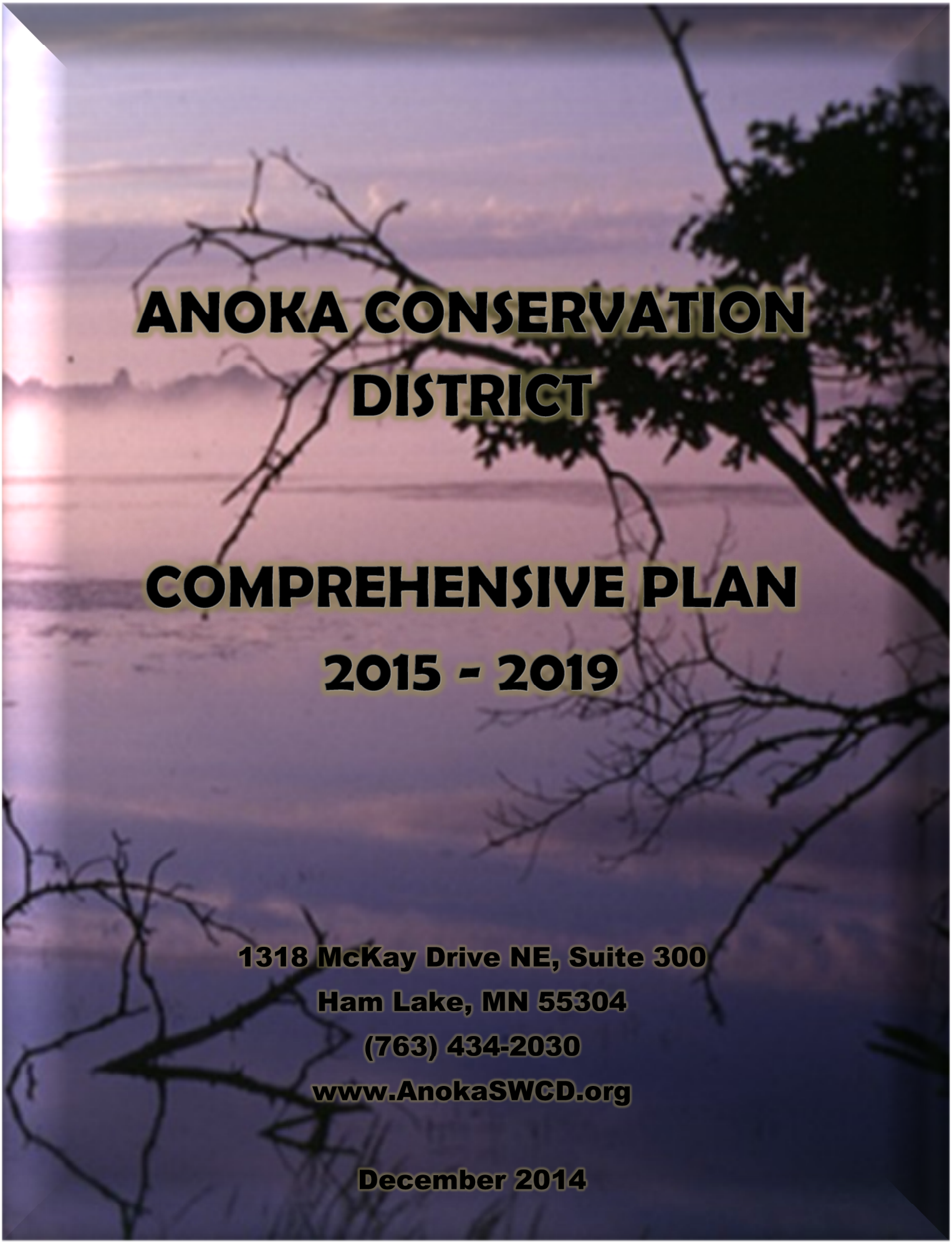

ANOKA CONSERVATION DISTRICT

COMPREHENSIVE PLAN

2015 - 2019

1318 McKay Drive NE, Suite 300
Ham Lake, MN 55304
(763) 434-2030
www.AnokaSWCD.org

December 2014

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Introduction

About this Plan

The Anoka Soil and Water Conservation District (Anoka Conservation District) has prepared this comprehensive plan in accordance with requirements of the Minnesota Board of Water and Soil Resources. The plan must be filed with the U.S. Department of Agriculture for the district to receive assistance from the Natural Resources Conservation Service. The plan provides a framework for overall natural resource management priorities in Anoka County. Future annual work plans will be developed with specific tasks to address the priorities and goals within this 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 planning process was initiated with an online survey of stakeholders including local, state and federal agency staff and officials, the general public, conservation cooperators, and other natural resource professionals. 144 responses were received and their input was considered throughout the planning process.

Anoka Conservation District

Since its formation in 1946 by petition of Anoka County residents, Anoka Conservation District (ACD) has worked with public and private landowners to address natural resource management challenges. The focus has changed over the years from agricultural related problems to issues related primarily to urban development. Grassed waterways and shelterbelts have given way to greenway corridors, streambank stabilization and rain gardens.

Mission

The mission of the Anoka Conservation District is to conserve and enhance the natural resources of Anoka County.
We do this by:

- conducting monitoring and analysis,
- informing landowners and local government in natural resource management, and
- leveraging technical and financial resources to promote natural resource stewardship practices.

Guiding Principles

- Focus on long-term resource sustainability.
- Make informed and ethical decisions.
- Promote cost-effective and efficient resource management.
- Partner with both public and private sectors.
- Retain highly qualified, knowledgeable staff.
- Utilize technology to achieve efficiency and enhance work products.
- Keep natural resources issues visible in Anoka County.
- Respond to opportunities and changing needs.
- Develop diverse programs, partners and funding sources.

- Utilize education and outreach in addition to technical and financial assistance to encourage natural resource stewardship.

Authorization and Jurisdiction of Conservation Districts

Soil and Water Conservation Policy

Soil and Water Conservation Districts are authorized under Minnesota Statutes Chapter 103C known as the Soil and Water Conservation District Law. Soil and water conservation policy reads as follows (103C.005)

> *Maintaining and enhancing the quality of soil and water for the environmental and economic benefits they produce, preventing degradation, and restoring degraded soil and water resources of this state contribute greatly to the health, safety, economic well-being, and general welfare of this state and its citizens. Land occupiers have the responsibility to implement practices that conserve the soil and water resources of the state. Soil and water conservation measures implemented on private lands in this state provide benefits to the general public by reducing erosion, sedimentation, siltation, water pollution, and damages caused by floods. The soil and water conservation policy of the state is to encourage land occupiers to conserve soil, water, and the natural resources they support through the implementation of practices that:*
>
> *(1) control or prevent erosion, sedimentation, siltation, and related pollution in order to preserve natural resources;*
> *(2) ensure continued soil productivity;*
> *(3) protect water quality;*
> *(4) prevent impairment of dams and reservoirs;*
> *(5) reduce damages caused by floods;*
> *(6) preserve wildlife;*
> *(7) protect the tax base; and*
> *(8) protect public lands and waters.*

Soil and Water Conservation District Authority

In order to carry out its mission, ACD has several powers granted in law. The following paraphrases those authorities.
SWCDs may;

- Conduct resource surveys and demonstration projects,
- Carry out soil and water conservation measures on any lands in the district with the consent of the landowner,
- Cooperate or enter into agreements with any governmental agency or individual landowner for the purpose of carrying on a program of erosion prevention and control,
- Purchase or accept property and income and provide equipment and supplies that will help to bring about conservation practices,
- Construct, install, improve, maintain, and operate such structures and works as may be necessary for proper performance of the district,

- Develop a comprehensive and annual plan for the conservation of soil and water resources. These plans are required for the district to receive state grant funds,
- Assume land by purchase, lease or otherwise to improve, maintain, operate, and administer any soil and water conservation project undertaken by federal or state government,
- Sue or be sued,
- Require compensation or contributions for goods and services provided,
- Make application or enter into an agreement with any designated authority for federal assistance,
- Perform any other acts necessary to secure and use federal aid,
- Acquire land, easements, or rights-of-way needed in connection with works of improvement installed with federal assistance,
- Use necessary funds to provide membership in state and national associations that pertain to district operations, and is authorized to participate and appropriate necessary funds to defray expenses of district representatives for meetings of such groups,
- Procure necessary insurance,
- Publish any information related to the activities of the district,
- Provide advice to or consult with county or municipal representatives, and
- Present an annual budget to the board of county commissioners.

Organizational Structure

Staff

Staff attend to the daily activities designed to achieve the goals set by the Board of Supervisors.

Table 1: Staff Positions

Position	Duties
District Manager	Personnel management. Financial tracking and reporting. Secure funds and partnerships. Manage grants and projects. Develop programs and services to achieve Board objectives.
Office Administrator	Office administration. Grant administration. Website management. Financial tracking.
Water Resource Specialist	Watershed planning and project management
Conservation Specialist	Assist landowners with Best Management Practice (BMP) design, funding and installation. Conduct subwatershed level analysis to identify and rank BMP opportunities.
Wetland Specialist	Assist project applicants with WCA compliance. Wetland management consultation.
Water Resource Technician	Water quality and quantity monitoring and analysis on lakes, rivers, wetlands, and groundwater.
Seasonal Technician	Assist with all district activities as needed.

Supervisors

The Anoka Conservation District has a board of supervisors with a variety of expertise elected to four year terms. The Board of Supervisors determines the priorities and goals for the districts and charges the staff with developing the programs and services necessary to address those priorities. Legislation passed during the 2014 session will result in supervisors being elected according to population-based districts beginning with the 2016 election. Historically supervisors were elected at-large, with each supervisor representing a specific geographic area in which they must reside.

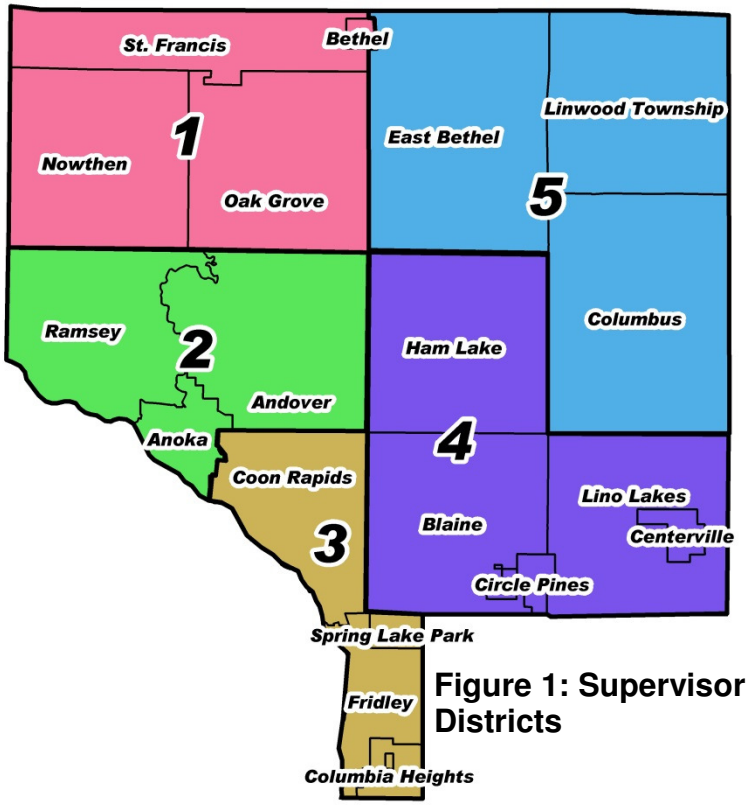


Figure 1: Supervisor Districts

Table 2: Supervisors Currently Serving

District	Supervisor	Term	Office	Contact
1	Karla Komec	12/31/16	Member	19521 Cleary Road NW Nowthen, MN 55303 763/688-3955
2	Jim Lindahl	12/31/16	Vice Chair	17275 Tulip St. NW Andover, MN 55304 763/753-3449
3	Karl Tingelstad	12/31/18	Member	12895 Kerry St NW Coon Rapids, MN 55448 763/439-5213
4	Mary Jo Truchon	12/31/18	Chair	12917 Buchanan St NE Blaine, MN 55434 763/757-3084
5	Vici Nass	12/31/16	Treasurer	23340 Isetta St NE East Bethel, MN 55005 651/462-3923

Meetings and Committees

Regular board meetings of the ACD are generally held on the third Monday of each month. A yearly meeting schedule is posted on ACD's official website, www.AnokaSWCD.org and in the office of the ACD. Regular board meetings and committee meetings are held at the District office in Ham Lake unless otherwise noted.

ACD supervisors also serve on committees to analyze detailed information on issues requiring intensive review prior to full board action. Some committees are internal and others function on a metro or statewide level. Supervisors choose to participate in

committee meetings to offer personal expertise in the area of discussion or to gain more knowledge of the subject matter. Committees provide recommendations to the full board of supervisors.

Internal Committees

Internal committees are comprised of three supervisors but are not authorized to take action on behalf of the full board. Their function is to consider complex topics in greater detail and provide a recommendation for action to the full board. The ACD has three internal committees.

Finance Committee
The finance committee reviews the District's finances and prepares annual budgets. The finance committee ensures that the District operates within its financial means and reviews all equipment purchases and personnel changes to ensure that they fall within the District approved budget.

Operations Committee
The operations committee reviews issues related to the programs and services of the District and provides additional guidance to staff on projects and procedures. The operations committee is also responsible to review and formulate policy recommendations.

Personnel Committee
The personnel committee is responsible to review and make recommendations to the full board on all personnel management issues of the District including but not limited to employee recruitment, compensation, benefits, evaluations, discipline and dismissal.

External Committees

There are also several external committees that supervisors take part in. Supervisors that take part in external committees are expected to represent the interests of the District during the meetings and events and report back to the District on the activities of the organization. During the preparation of this comprehensive plan, District Supervisors were involved in the following groups:

- Metro Conservation Districts
- Metropolitan Association of Conservation Districts
- Rice Creek Watershed District Citizens Advisory Committee
- Coon Creek Watershed District Citizens Advisory Committee
- MASWCD Committees
- Anoka County Water Resources Management Taskforce

Policies

ACD policies are reviewed and approved annually and are incorporated into the ACD Handbook, which covers personnel, supervisor, and operational topics. Natural resource policies are included at the end of this plan.

Resource Conservation

Natural resource management occurs in a very dynamic setting. Land use, regulatory standards and agencies, financial and technical capacities of local, state and federal resource managers, personnel, priorities and goals are in a constant state of change. Additionally, the resources themselves change in terms of their quality, quantity and distribution. Emerging issues promise to further complicate the natural resource management setting. ACD is committed to remaining proactive rather than reactive by considering emerging issues throughout the natural resource management process.

Emerging Issues

Climate change is speculative and does not benefit from consensus. What is known is that the composition of the gases in the atmosphere are changing and it seems to coincide with the industrial revolution and the reliance on fossil fuel burning to supply the world's energy needs. How this change in composition will ultimately influence weather patterns, ocean currents, precipitation regimes and vegetation is uncertain, but it warrants mention and consideration during planning efforts. Changing precipitation patterns have already resulted in updates to the precipitation frequency tables by the National Oceanic and Atmospheric Administration (Atlas 14), which indicate that normal and extreme precipitation amounts have increased, leaving previously installed stormwater infrastructure undersized. Agencies must be prepared to adapt to changes that do occur and make appropriate adjustments to programs to reduce or alleviate the resulting problems.

Groundwater supplies in Minnesota have not been an issue of concern in past planning efforts. Recent projections indicate that areas of Anoka County may experience drinking water shortages in the next twenty years. As surficial groundwater is depleted, we can anticipate shallow domestic wells drying up, wetlands being converted to non-wetland, stream base flows being compromised, shallow lakes becoming wetlands, recreational lakes becoming smaller, shallower and experiencing water quality problems, and vegetation transitioning to more drought tolerant species. Anoka County is the recharge area for many of the deeper aquifers relied upon by the Twin Cities and surrounding suburbs to the south for commercial and domestic water supplies. Overuse in those communities will result in lower water tables in Anoka County. Efforts to conserve water by optimizing turf and crop irrigation techniques and reducing the footprint of highly manicured lawn can put a dent in the issue. Increasing rain water infiltration should be considered during planning efforts and project design. This can be challenging because large flat sandy uplands are optimal groundwater recharge areas and they also have the highest pressure to be developed to residential and commercial uses. When this happens, much needed rain water infiltration tends to be dramatically reduced.

Infiltration and groundwater quality protection can be in conflict with each other. Under the direction of the MN Pollution Control Agency, many municipalities continue to have source water protection strategies that prohibit the infiltration of stormwater in effort to protect shallow groundwater from contamination. Several stormwater constituents such as nitrates, chlorides, pathogens, and heavy metals are not adequately filtered by the sandy soils of the Anoka Sand Plain. Ultimately, policy

makers have to choose between having ground water supplies that are adequate but require treatment before consumption, or inadequate water supplies that do not need to be treated; historic strategies err in favor of the latter.

Invasive species threaten native ecosystems and the services they provide in all Minnesota biomes, which has broad implications for natural resource managers. Invasive species can compromise fisheries and aquatic recreation, diminish forest products, and denude habitat for wild game. The only viable long-term strategy is to slow the spread and reduce the damage until biological controls can be developed to keep invasive species populations in check. Purple Loosestrife is a good example of an invasive species brought under control with the introduction of biological competitors. Well-established invaders such as Eurasian Water Milfoil, Reed Canary Grass, Curly Leaf Pondweed, Gypsy Moths, Spiny Water Fleas, Common Buckthorn, Leafy Spurge, Common Carp, Zebra Mussels, Garlic Mustard, and Spotted Knapweed continue to consume a lot of technical and financial resources to curtail. Emerging threats include:

- Wild Parsnip; a roadside weed that causes severe blistering rashes upon contact.
- Asian silver carp; known for jumping at the sound of boat engines.
- Emerald Ash Borer; threatens to completely decimate Minnesota's extensive populations of ash trees.

Declining pollinator populations in Minnesota and nationwide threaten to undermine food production and native ecosystem functions. In 1991 a new type of insecticide was developed that works in very low concentrations and functions as a systemic pesticide, being taken up by plants and migrating throughout every part of the plant. From roots and stems to leaves and pollen, neonicotinoid based insecticides provide full plant protection and one treatment can last for many months or even years. This combination of persistence and systemic function make all plant components poisonous to insects for as long as the plant lives. Even the pollen becomes poisonous to bees, moths and butterflies that consume and transport it. These chemicals are known to disorient honeybees, native bees and butterflies and make them less resistant to disease, and may be a significant contributor to honeybee hive collapse.

Soil health is being compromised by excessive cultivation, removal of topsoil, application of pesticides (fungicides, insecticides and herbicides), lack of vegetative cover, and compaction. Healthy soil provides a stable matrix that resists erosion, infiltrates water, cycles nutrients, adsorbs pollutants, provides drought tolerance, drives plant productivity, and sustains a complex food web. Healthy soils support a diverse ecosystem of bacteria, fungi, invertebrates (worms and arthropods) and other microscopic organisms in a matrix of mineral and organic matter that provides structural stability. All soil ecosystem elements are interdependent and comprise a living system that needs to be nourished with water, organic matter, nutrients, warmth and atmospheric gases. Maintaining healthy soils is critical to maintaining healthy terrestrial and aquatic ecosystems and is the foundation of a robust food web.

Best Management Practice inspection and maintenance is a long-term cost that many agencies are not equipped to address in terms of staffing or finances. As BMPs installed two decades ago reach the end of their design life, it is critical to maintain them

in order to continue to reap the benefits they were installed to achieve. Unfortunately, grant funding sources are not designed to help defray this cost and few government entities have incorporated active maintenance programs into their budgets. This challenge can be seen with stormwater quality treatment ponds installed in the early 1990s that now require expensive dredging and sediment disposal to maintain intended functionality. At a smaller scale, agency staff are dealing with the inspection and maintenance of potentially dozens of practices installed in cooperation with landowners such as riverbank and lakeshore stabilization, ecosystem restorations, and rain gardens. The staff time and expertise required to conduct routine inspection and provide maintenance guidance is daunting for local government entities.

Nitrogen pollution in surface water, most prevalently in the form of nitrate, has emerged in recent years as a priority concern statewide due to a number of studies showing the toxic effects of nitrate on aquatic life, nitrogen's role in the dead zone in the Gulf of Mexico, and the potential to contaminate drinking water beyond the 10mg/L consumption threshold. An extensive Minnesota Pollution Control Agency report completed in June 2013 indicates that the bulk of the problem in Minnesota is found in the drain tiled agricultural areas of the southern third of the state. Nitrate discharge concentrations in watersheds in Anoka County are all well below the 10 mg/L threshold.

Habitat loss and fragmentation due to development, disturbance, and invasive species encroachment has the potential to push many indigenous species out of the county. When the housing market crashed and development came to a screeching halt in the late 2000s, this issue took a back seat to more pressing economic challenges. With the recovery of the housing sector, we are once again seeing many of our remaining natural areas forever lost to development. This occurs not only due to mass grading and the installation of roads, utilities, dwellings and structures, but also due to large acreage mowing, which essentially converts complex ecosystems into biological voids, supporting little more than a suite of a few invertebrates adapted to turf grass.

Resource Priorities and Goals

The Anoka Conservation District Board of Supervisors identified the following five priority resource areas (in bold) with corresponding goals (bulleted) during the comprehensive planning process with consideration of input from the public and agency staff and officials. ACD realizes that it is not practical to address all issues of degraded natural resource quantity and quality within the five year scope of this plan. As part of the comprehensive planning process, however, we did consider the breadth of natural resource challenges and opportunities and developed strategies designed to achieve the greatest overall benefit.

Water Quality

- Maintain high quality surface waters
- Improve impaired surface waters
- Protect drinking water

Water Quantity

- Stop long-term aquifer depletion and where possible replenish aquifer levels
- Control stormwater runoff and the resultant erosion

- Reduce localized flooding and related damage

Natural Habitats

- Preserve and enhance ecological diversity in Anoka County
- Maintain ecological corridors and systems to support indigenous wildlife

Wetlands

- Achieve no net loss in, and where possible improve, the quality and quantity of wetlands

Soils

- Maintain and enhance soil health

Resource Management Collaboration

Anoka County natural resources are managed by several entities with varying jurisdictions. It is important that ACD remains continually engaged with each entity to

- avoid duplication of efforts,
- maximize efficiencies,
- capitalize on common interests between and among entities,
- direct limited financial and staff resources toward the most cost-effective approaches, and
- apply management strategies at a scale most appropriate to meet identified goals and objectives (e.g. lakesheds vs. regional aquifer recharge areas vs. multi-county wildlife corridors or invasive species management).

The following tables identify scale, partnering entities, and priorities for ACD's natural resource management collaborations.

Table 3: Multi-County/Regional Collaboration

Priority	Jurisdiction	Partners
Ecological restoration of oak savanna and other declining habitats	Anoka Sand Plain	Anoka Sand Plain Partnership, State of MN Agencies, Non-Profits, County and Municipal Parks Departments
Groundwater recharge	Recharge areas for each of the major metro aquifers.	Land use authorities within as-yet-to-be-identified groundwater management areas, Soil and Water Conservation Districts, Watershed Districts, Counties, Met Council, State of MN
Aquatic and terrestrial invasive species management (e.g. silver carp, zebra mussels, Eurasian milfoil, wild parsnip, buckthorn, leafy spurge, purple loosestrife, gypsy moth, and emerald ash borer)	Varying scales as appropriate for the species of concern	State of MN Agencies, municipal weed inspectors, USDA NRCS, County and Municipal Departments

Table 4: County-Wide Collaboration

Priority	Jurisdiction	Partners
Coordinate a comprehensive monitoring program for surface and ground water quality and quantity.	Anoka County	Watershed Districts, Water Management Organizations, MN DNR, Metropolitan Council, MN PCA
Coordination and implementation of the Wetland Conservation Act	Anoka County	Wetland Conservation Act LGUs, BWSR, MN DNR, US ACE
Update wildlife corridor plan and work with land use authorities for integration into planning efforts	Anoka County	Land use authorities throughout Anoka County, County Departments, State of MN

Table 5: Major Watershed Level Collaboration

Priority	Jurisdiction	Partners
Provide leadership and expertise to implement strategies that result from the completion of Watershed Restoration and Protection reports, Total Maximum Daily Load reports and Stormwater Retrofit Analyses in collaboration with partners throughout the major watersheds.	Rum River	Lower Rum River WMO, Upper Rum River WMO, County water planners and SWCDs from Mille Lacs Lake to the Mississippi River, Municipalities throughout the watershed
	St. Croix	Sunrise River WMO, County water planners and SWCDs from Chisago and Washington Counties, Municipalities throughout the watershed
	Mississippi Metro	Rice Creek Watershed District, Coon Creek Watershed District, Mississippi WMO, Hennepin Co. Env. Services, Ramsey SWCD, Municipalities throughout the watershed

Table 6: Minor Watershed Level Collaboration

Priority	Jurisdiction	Partners
Coordinate water resource monitoring, catchment level water quality modeling and BMP opportunity identification, and implementation of BMPs in accordance with approved water plans	Upper Rum River	Upper Rum River WMO, Lake George Improvement District, Cities (St. Francis, Nowthen, Oak Grove, East Bethel, Bethel)
	Lower Rum River	Lower Rum River WMO, Cities (Ramsey, Anoka, Andover)
	Sunrise River	Sunrise River WMO, Lake Associations (Martin Lake, Linwood Lake, Coon Lake), Cities (East Bethel, Linwood, Columbus)
	Coon Creek	Coon Creek Watershed District, Lake Associations (Ham Lake, Crooked Lake), Cities (Ham Lake, Columbus, Andover, Blaine, Coon Rapids, Fridley, Spring Lake Park)
	Rice Creek	Rice Creek Watershed District, Lake Associations (Golden Lake), Cities (Columbus, Blaine, Fridley, Lino Lakes, Circle Pines, Lexington, Centerville)
	Mississippi	Mississippi WMO, Cities (Fridley, Columbia Heights, Hilltop)

Resource Condition

This plan does not include a comprehensive inventory of the natural resources of the county. Natural resources quality and distribution are continually changing. It is only through a continual monitoring and inventory program that we are able to maintain an up-to-date understanding of natural resources. As an alternative to providing a written inventory, the ACD Board of Supervisor provides updated information on natural resources through our website, www.AnokaSWCD.org through a combination of videos, brochures, reports such as the annual Anoka Water Almanac, and stormwater retrofit analyses. Additionally, mapping data are available through the MN DNR Data Deli and the Anoka County GIS website, and water quality data may be accessed through MPCA's online EQUIS database. Additional hydrologic data collected by ACD are available through ACD's data access tool on our website. Current inventory and resource monitoring data are also available to public by contacting staff. The purpose of the following summary is to provide context to the planning structure outlined in this document.

Anoka County Natural Resource Setting

Anoka County's natural resource base supports a rapidly growing population of over 330,000 people (2010 U.S. Census Bureau) in an area of 273,450 acres. Approximately 50% of the county is densely or moderately urbanized with homes and places to work. The remaining portion of the county supports scattered agriculture and open space, including extensive county and city park systems and vast areas of state wildlife management areas.

Table 7: Anoka County Landuse

Landuse	Acreage	Percent
Agriculture	68435	25.0
Residential	122386	44.8
Commercial	7515	2.7
Industrial	6250	2.2
Water	8,870	3.2
Other	59994	21.9
Total	**273,450**	**100.0**

Anoka County GIS, December 2009

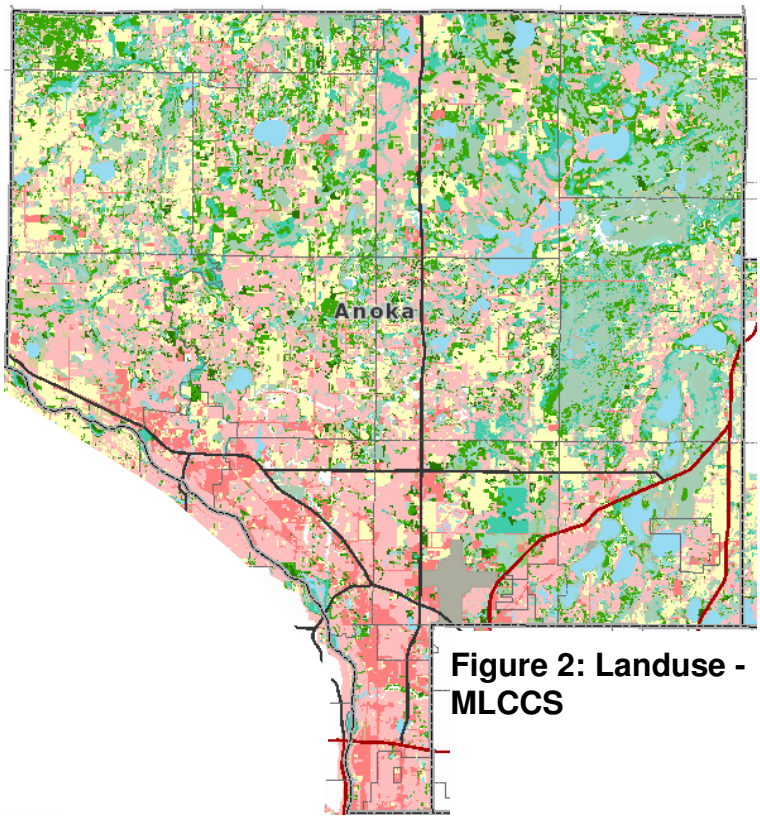


Figure 2: Landuse - MLCCS

Anoka County is largely within the Anoka Sand Plain, a large expanse of permeable sandy soils interspersed with large wetland complexes. Many of the wetlands have been converted to sod and vegetable farms with the addition of extensive ditch systems. In the last twenty years, drained peatlands have given way to residential development. The dry sandy soils have low fertility and little water holding capacity and so are only suitable for a few crops. They are ideal for development however, requiring very little investment to be made suitable for roads and structures. As a result, the sandy uplands have been under heavy development pressure.

The Anoka Sand Plain is also characterized by a high groundwater table, typically within three to eight feet of the surface. This high water table is due to a combination of shallow topography and highly permeable sandy soils. Wetlands form where groundwater levels are near or just above the surface. Areas where exposed groundwater is many feet deep result in a landscape dotted with shallow lakes. Many of the lakes are connected to each other with streams, creating chains of lakes. As shallow groundwater levels fluctuate so do the water levels in the lakes, streams and wetlands that dominate the landscape.

The Anoka Sand Plain takes on regional importance when considering that it is widely considered to be the recharge area for many of the deeper aquifers that supply drinking water to communities throughout the Twin Cities Metro Area. Mismanagement of Anoka County's water resources will not only diminish the quality of life of every Anoka County resident, but also compromise the availability of abundant clean drinking water for the entire metropolitan area.

Water Quality

Water quality is among the most important resource concerns. Both surface water and groundwater quality are resource management priorities for ACD. Anoka County listed impaired waters are shown in Figure 3. Waters may be listed as impaired for a number of reasons including nutrients, sediment, pathogens, biota, turbidity and heavy metals. Impairments in Anoka County span all of these categories.

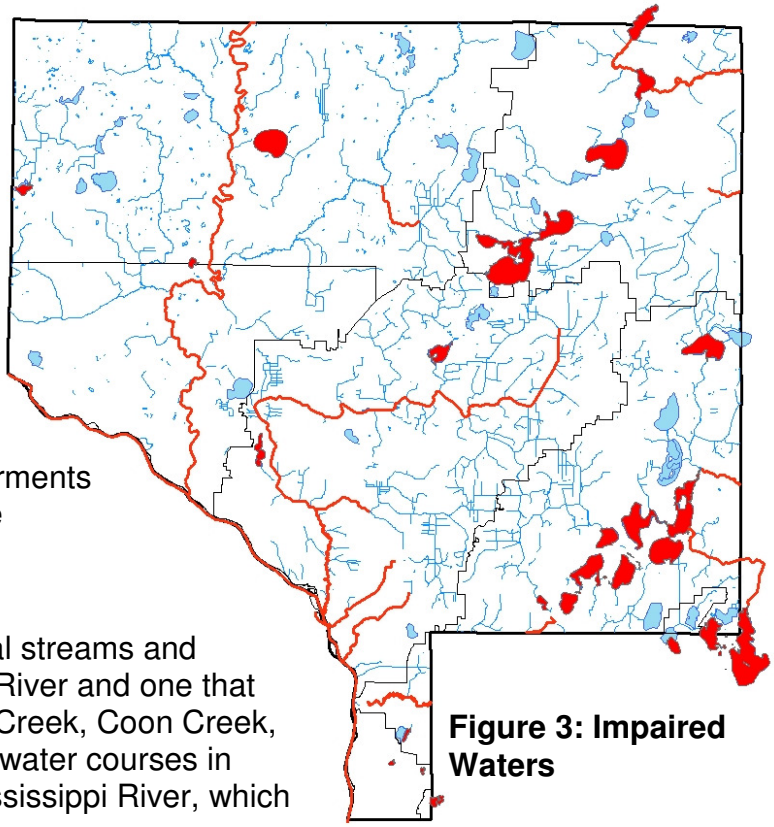


Figure 3: Impaired Waters

Streams/Rivers

In Anoka County there are several streams and rivers that flow to the Mississippi River and one that flows to the St. Croix River. Rice Creek, Coon Creek, and the Rum River are the major water courses in Anoka County that flow to the Mississippi River, which

forms the southwestern boundary of Anoka County. Springbrook, Stonybrook and Oak Glen Creek are all small tributaries in heavily developed watersheds that flow directly into the Mississippi River. Coon Creek and Rice Creek are larger watersheds and both have well-staffed watershed districts that act as the primary water resource management entity. The Sunrise River flows through Carlos Avery Wildlife Management Area and several lakes in northeastern Anoka County to the St. Croix River. The watershed for Sunrise River is comprised largely 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. 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 the City of Anoka.

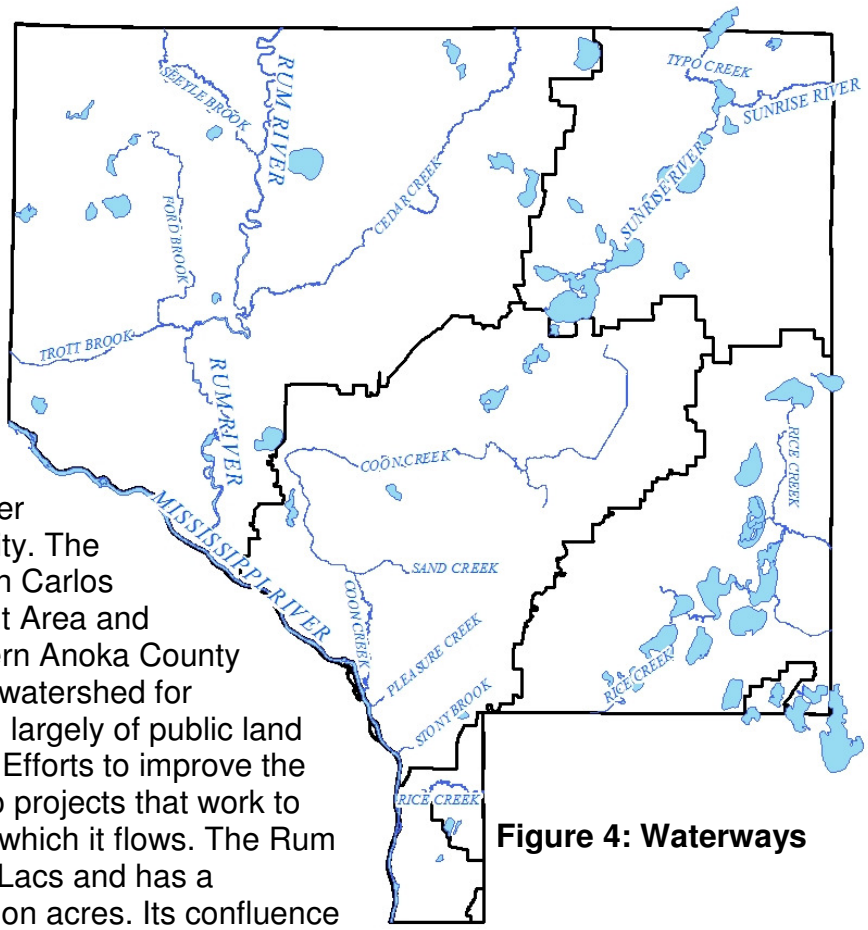


Figure 4: Waterways

The Rum River and its tributaries (Cedar Creek, Trott Brook, Ford Brook, and Seelye Brook) 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 staff also work in partnership with other governmental units in the county to manage other river and stream resources.

Lakes

Lake water quality is typically measured using three parameters; secchi disk depth, Total Phosphorus, and Chlorophyll-a. The Metropolitan Council developed the lake water quality report card in 1989. Each lake receives a letter grade, that is based on average summertime (May-Sept) chlorophyll-a, total phosphorus and secchi depth. In the same way that a teacher would grade students on a "curve," the lake grading system compares each lake only to other lakes in the region. Thus, a lake that gets an "A" in the Twin Cities Metro might only get a "C" in northern Minnesota. The goal of this grading system is to provide a single, easily understandable description of lake water quality.

Grade	Percentile	TP (µg/L)	Cl-a (µg/L)	Secchi Disk (m)
A	< 10	<23	<10	>3.0
B	10 - 30	23 – 32	10 - 20	2.2 - 3.0
C	30 – 70	32 – 68	20 – 48	1.2 – 2.2
D	70 – 90	68 – 152	48 – 77	0.7 – 1.2
F	> 90	> 152	> 77	< 0.7

Year→	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cenaiko																	B	A	A	A	B	A	A	A	A	A	A	B	B	B	B	B		
Centerville	C		C					D												C	C		C	C	A									
Coon				C					C					C			C	B	A	B	C	B		C		C		C						
Coon (E. Bay)				C					C	C	C		C	C	C		B	B	A	B	C	B		C	C	C	B	A	B	B	B	B	B	A
Coon (W. Bay)																														A		A		B
Crooked			C		C				C					B	C	B	B	B		B		B	B		B	B		B	B		B	A		A
East Twin	B		C						B						B		A	B	A	A		A			A			A		A	A		A	
Fawn								B									A	B	A	A	A	A		A		A		A		A		A		
George	A	A		A					A					B			A	B	A	A		A			B			B			B		B	B
George Watch	F	D	D		D		D	D	F	D	F					F	D	F	D	D	F	D	D	F	D	F	F	D	D	D	D	F		
Golden					D	C	D	F	F	F	F		D			C	D	C	C	C	D	D	D	D	C	C	C	C	C	C				
Ham				C									A	B		A	A	B		C	C	B		B	B		B	A		B	B		A	A
Highland																			D	C	D	F	F	F	F	F	F							
Howard									F	F	F							F	D	D														
Island			C																				B	B	C	C	B	B	C	C	C	C		
Itasca																		A	B	B														
Laddie													B	B	B			C	B	B	B	B	B	B	B			B			B			
Linwood	C		C						C					C			C	C	C	C	C		C		C		C	C	C			C		
Lochness																											A	B		B	C	C		
Martin			D														D	D	C	D	D		D		D		D	D	D			D		C
Minard																																	A	A
East Moore	C	C	C	C	B	C	C							C				C	B	B	C	C	C		C									
West Moore	C	F	C	B	C	F	C												B	B	C	C	C		C									
Mud													B						B	C														
Netta																	B	C	A		B		A	A		B	B		B	A		A	A	
Peltier			D										D	F	D	D	D	D	D	D	F	F	D	D	D	F	D							
Pickerel															B		A	A	B	C											A	C		B	A
Reshanau																										D	D	D	D	D	D	D		
Rogers																		C		C			B			D		B	B					
Round																		B	A	B			A		B		C		C	C		A		A
Sandy													D	D	D		D	D	D	D	D	F	D	D	D								D	
Typo													F	F	F		F	F	F	F	F		F		F		F		F			F		D

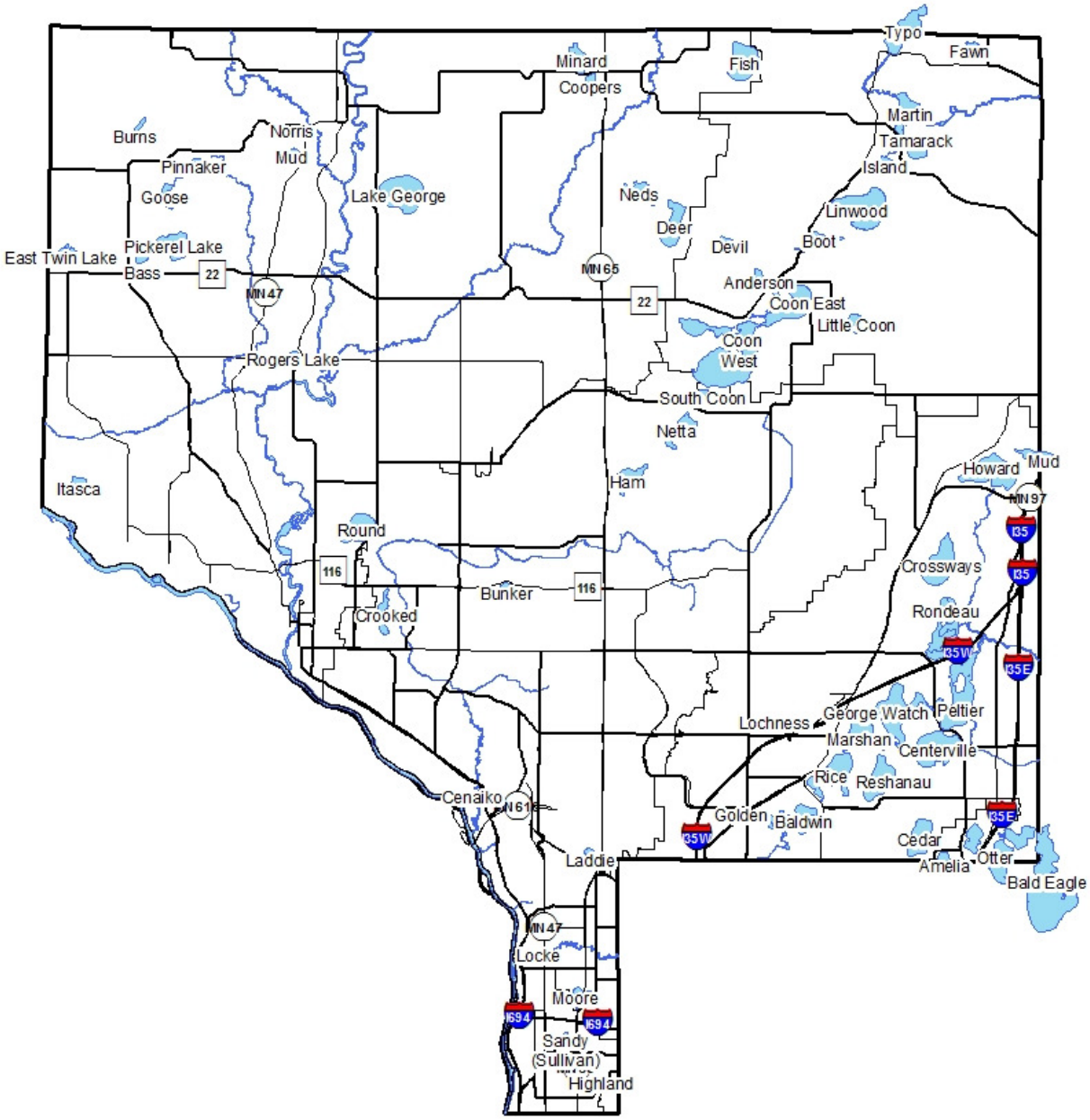


Figure 5: Lake Resources

Groundwater

In Anoka County, most residents, agriculture, and businesses rely on groundwater from either municipal or private wells for drinking water, irrigation and other uses. Groundwater supplies in Anoka County are particularly vulnerable to contamination due to the permeable sandy soils. Figure 6 prepared by the MN Geologic Survey (MGS) illustrates geologic sensitivity of the uppermost aquifer (red – very high, orange – high, yellow – moderate, green – low). In some municipalities, wells have already become contaminated and may no longer be used for drinking water without expensive treatment. Municipalities can help protect drinking water by using landuse controls.

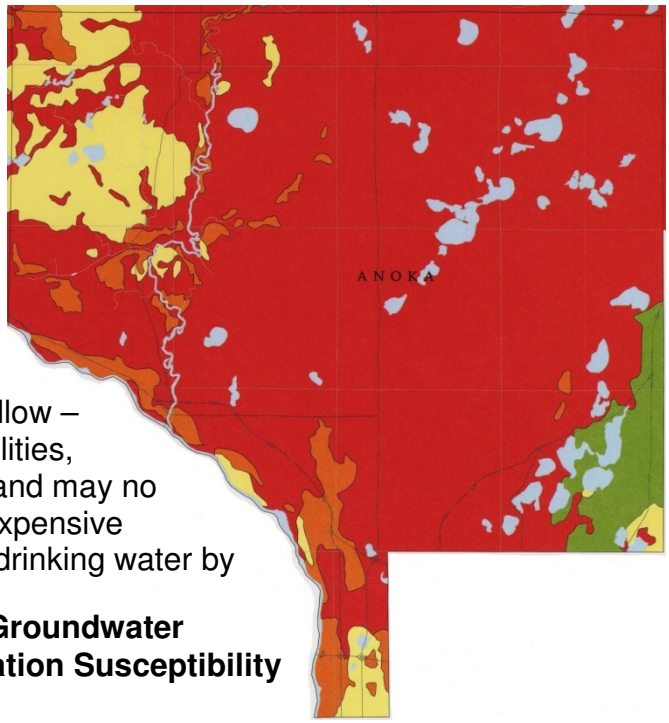


Figure 6: Groundwater Contamination Susceptibility

Protection of municipal drinking water supplies through landuse controls is enhanced by the identification and management of drinking water supply management areas (DWSMA) in two ways. First, identification of DWSMAs can enable resource managers to more quickly narrow in on a pollution source when contamination occurs. Second, DWSMA identification can enhance planning and zoning efforts to minimize the likelihood of contamination by prohibiting high risk activities in sensitive areas. Several municipalities are working together under the umbrella of the Anoka County Groundwater Municipal Wellhead Protection Group to manage DWSMAs.

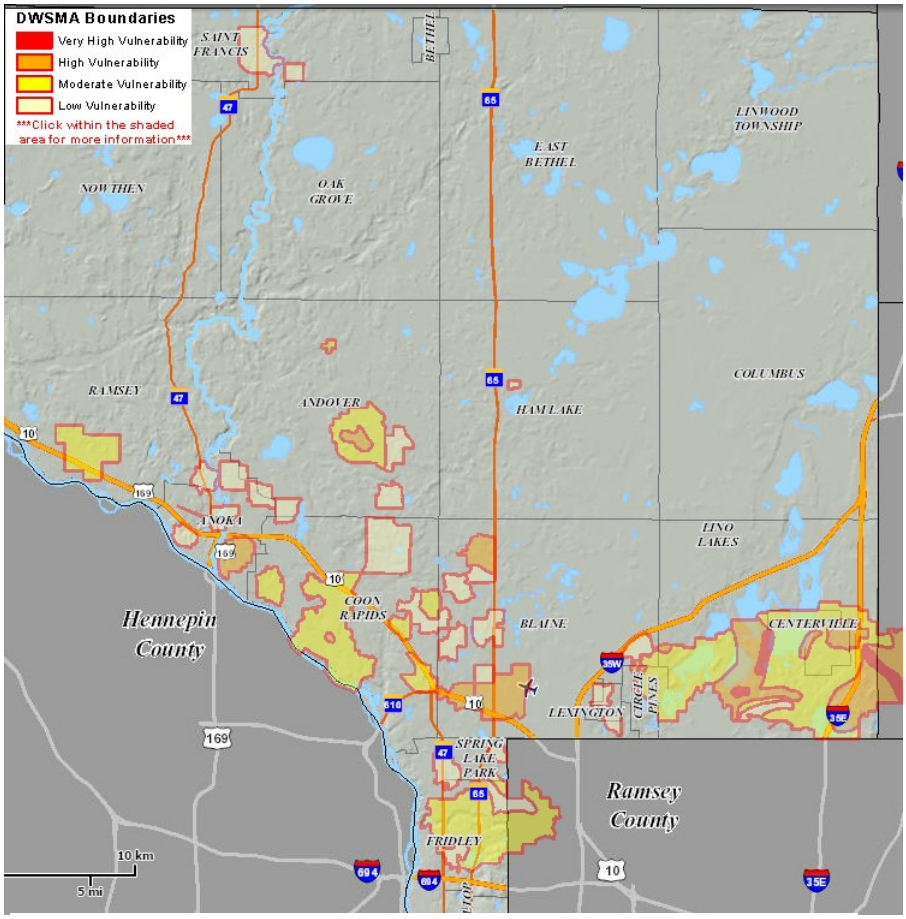


Figure 7: Drinking Water Supply Management Areas

Water Quantity

Water quantity is a concern for three reasons;

- flooding can cause damage to structures and septic systems and can cause erosion,
- depleted surficial aquifers lower water tables resulting in the drainage of wetlands, reduced lake water levels, reduced stream base-flow, and stress on plant life adapted to historic water levels, and
- shortages in drinking water supplies.

The Metropolitan Council completed a study that concluded that several metropolitan communities would experience drinking water shortages between now and 2030. Figure 8 shows anticipated drawdown where groundwater and surface water is closely connected. This drawdown will dramatically impact surface water elevations.

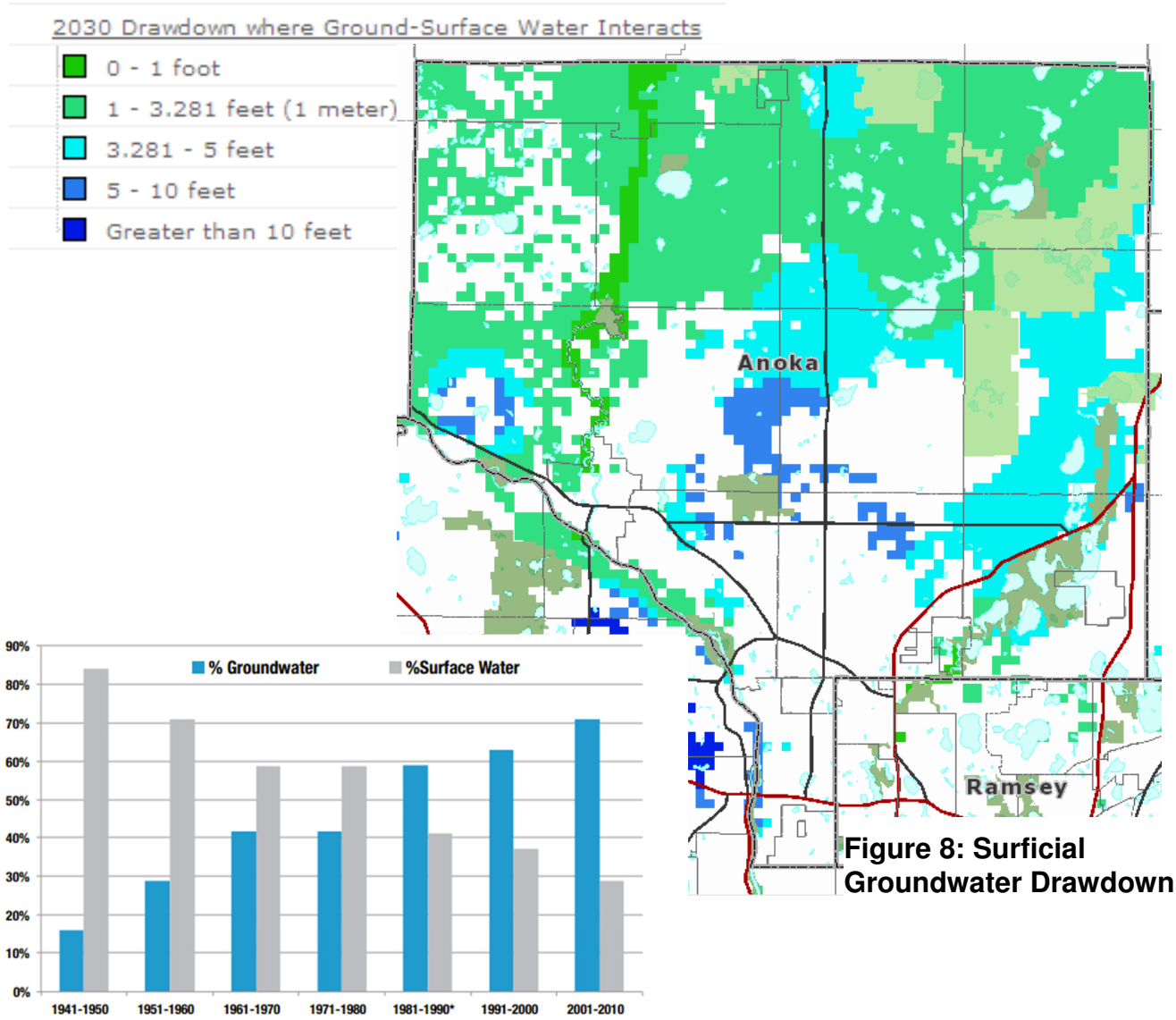


Figure 8: Surficial Groundwater Drawdown

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. More programs are needed 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.

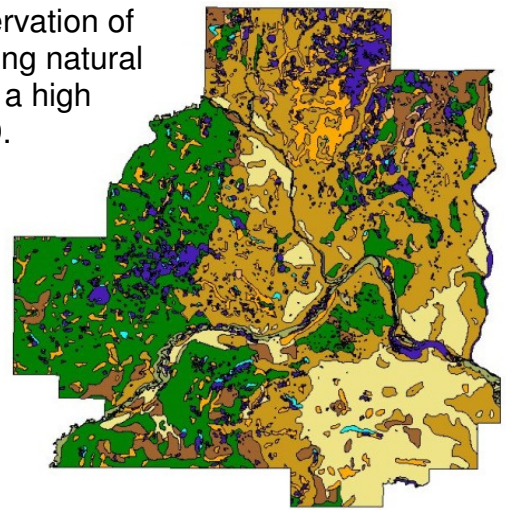


Figure 9: Presettlement Vegetation

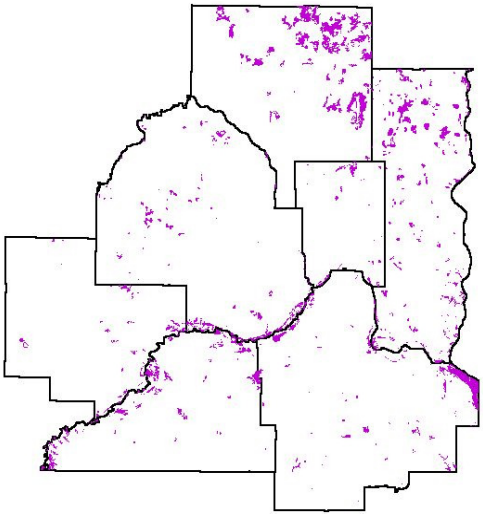


Figure 10: Remaining Natural Communities

Wildlife Connectivity

ACD developed a wildlife corridor plan as part of the land cover inventory and greenway planning efforts completed in 2005. The corridor plan should be updated to identify parcels protected during the last decade. ACD will continue to work with private landowners and local, county, state and federal government programs to help manage lands in a way that allows open space to serve as effective wildlife habitat and travel corridors.

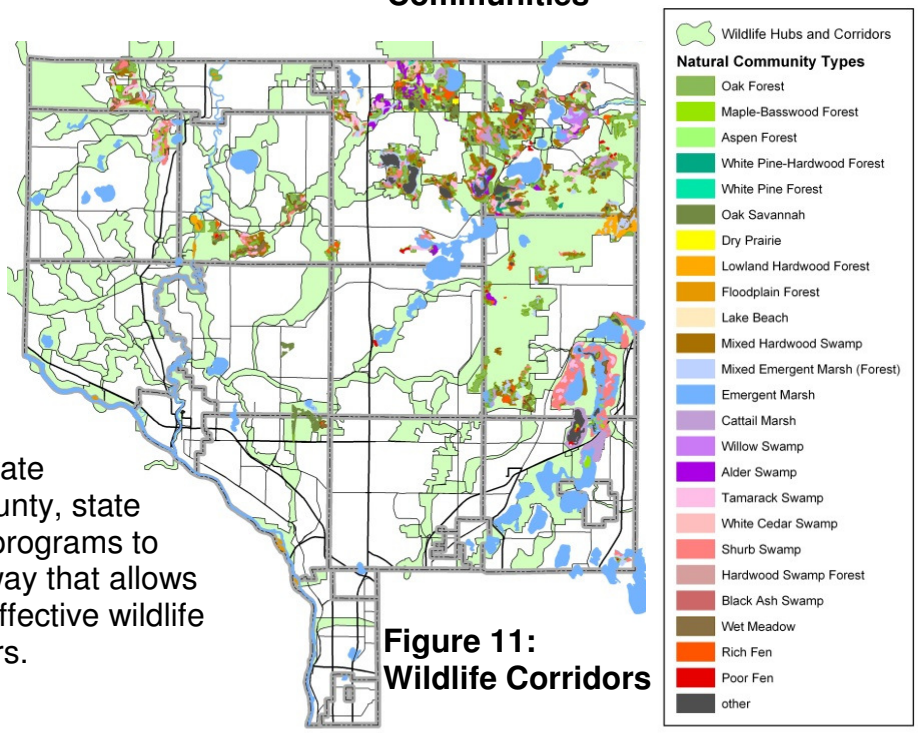


Figure 11: Wildlife Corridors

Wetlands

Anoka County is rich in wetland resources with nearly 30% of our land area covered in wetland. Anoka County is also unique in the seven county metro area as the only county with more than 50% of its original wetland acreage intact. Figure 12 is the National Wetland Inventory and shows wetlands that fall under MN Department of Natural Resources (DNR) jurisdiction in dark blue and those that fall under the jurisdiction of the Wetland Conservation Act in lighter blue. Lakes are included under DNR jurisdiction.

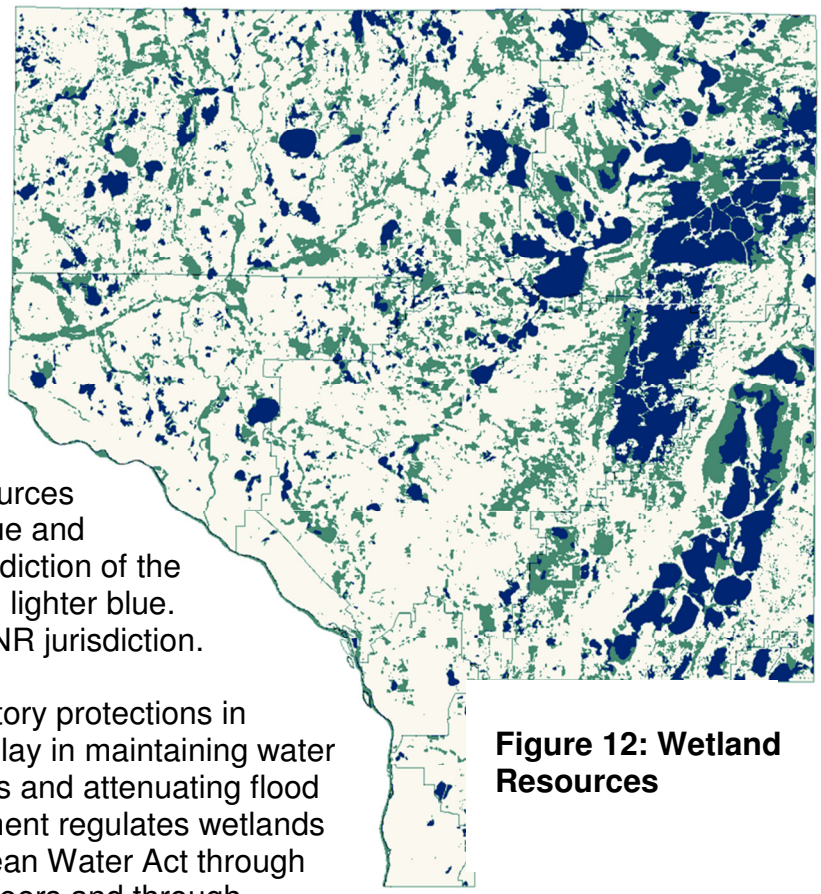


Figure 12: Wetland Resources

Wetlands have many regulatory protections in recognition of the role they play in maintaining water quality in our lakes and rivers and attenuating flood waters. The federal government regulates wetlands under Section 404 of the Clean Water Act through the US Army Corps of Engineers and through Swampbuster on agricultural lands. The state regulates larger, permanently ponded wetlands through the DNR and the remaining wetlands through local government units under the Wetland Conservation Act of 1991.

Wetlands provide many functions and values to Anoka County residents including water quality, flood control, wildlife habitat and open space. Utilizing wetland characteristics to assimilate nutrients, trap sediment, and attenuate flood waters can result in degradation of 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.

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.

Soils

A clear understanding of soil resources is the basis of sound natural resource management. Soil characteristics influence water flow and water chemistry, determine the composition and abundance of plants that can be grown in an area, and impact the type of structures that can be built and selection of the most suitable building materials. Although Anoka County is located within the Anoka Sand Plain, which is characterized by flat topography, high water tables, sandy upland soils and expansive peatland in the low lying areas, the soils are surprisingly complex. Not only are there areas in Anoka County of glacial till but there are also large areas of alluvial soils, laid down by river systems. Figure 13 is provided to illustrate this complexity, showing the number of soil associations and is purposely not labeled. Looking at the geomorphologic types provides a simpler picture of the different types of soils in Anoka County. Resource planning and management techniques and strategies vary within these areas.

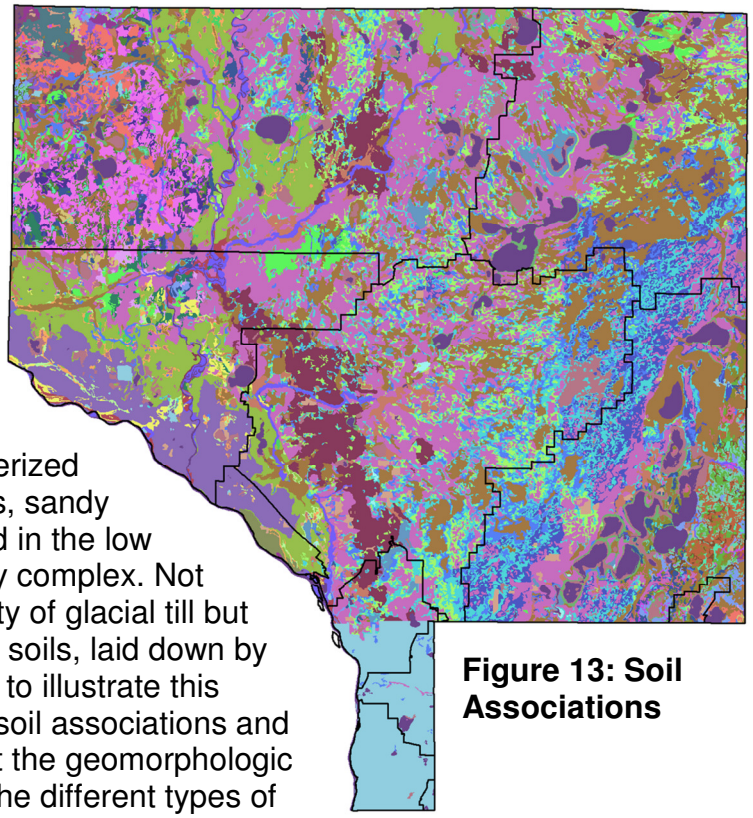


Figure 13: Soil Associations

ACD helps landowners to manage soils to reduce erosion for water quality improvement and to establish and maintain desirable vegetation. While we promote sound agricultural conservation practices and soil health, we rely on the Natural Resources Conservation Service to be the primary point of contact for our agricultural producers.

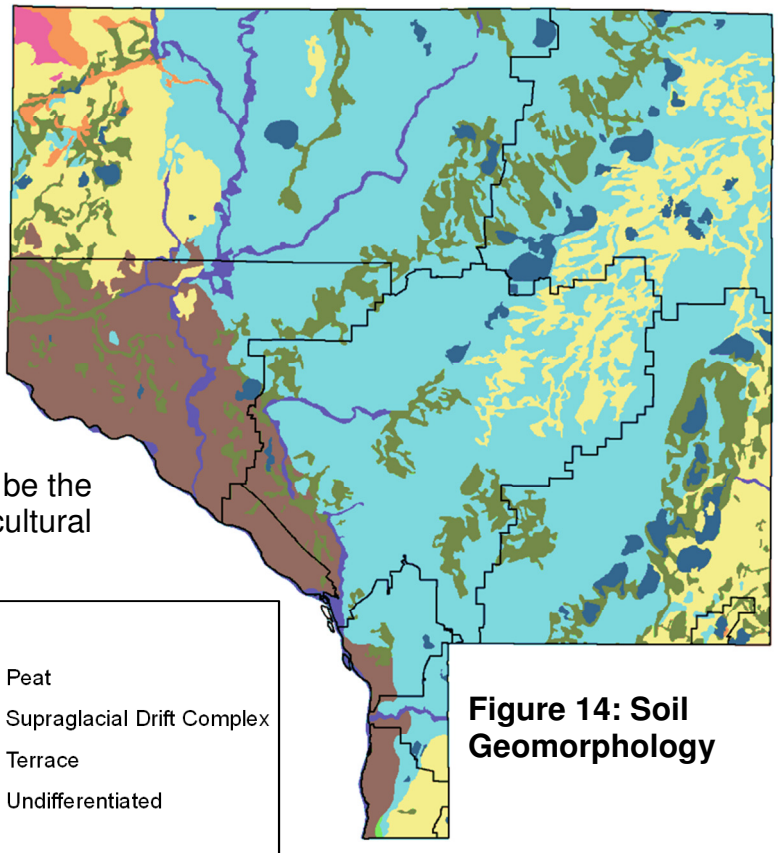


Figure 14: Soil Geomorphology

Existing Resource Management Efforts

Managing Anoka County's water, soil, plant and animal resources to ensure long-term sustainability requires an array of programs and services. The following summarizes the efforts of ACD over the last decade. Many of these programs are routine and will be continued while other programs come and go with the changing needs and opportunities in the county. Generally, ACD programs fall into the following categories; monitoring, inventory, analysis, planning, land protection, technical assistance, financial assistance, administrative assistance, product sales and equipment rental, education, and general ACD operations.

Monitoring

In order to focus limited financial and technical resources it is important to continually monitor resource quality, quantity and distribution. ACD's extensive water quality and hydrology monitoring program coupled with inventories and diagnostic studies ensure that we are focusing our efforts where they will do the most good. The figure to the right shows 2013 monitoring sites.

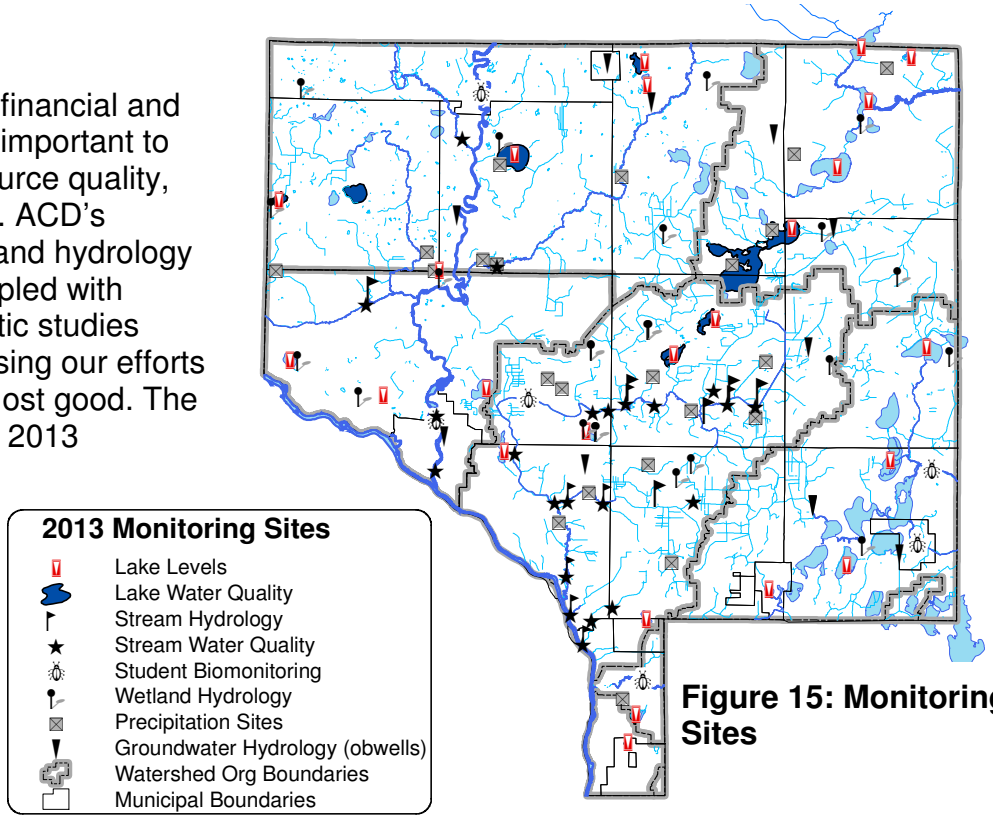


Figure 15: Monitoring Sites

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 water management entities. We have conducted Total Maximum Daily Load (TMDL) studies for two lakes and anticipate working with MPCA to complete more. As of 2014 we were actively engaged in work on three Watershed Restoration and Protection Strategies (WRAPS): Rum River, Coon Creek and Sunrise River.

Lake Water Quality – ACD monitors water quality of most recreational lakes in the county. Initially we monitored all lakes frequently. Now that a baseline of data exists, monitoring is most frequent (every 1-3 yrs) on those lakes with suspected problems, new stresses, or ongoing management. Other lakes are monitored less frequently (every 3-4 yrs).

Stream Quality – A variable number of streams are monitored each year, typically 5-10 sites. Monitoring is done for problem detection and diagnosis of known problems, including TMDL studies. In recent years, stream water quality monitoring has tripled (22

sites in 2013) to accommodate the diagnostic needs of the Rum River and Coon Creek WRAPS reports.

Biomonitoring of Streams – The stream biological monitoring program is both an educational program and a stream health assessment tool. The biomonitoring program relies upon students, with guidance from their teachers, to conduct the sampling and rudimentary sample sorting as part of their high school ecology curriculum. The program uses benthic (bottom dwelling) macroinvertebrates to determine stream health. Because of their extended exposure to stream conditions and sensitivity to habitat and water quality, benthic macroinvertebrates can serve as good indicators of stream health. Each year there are approximately 500 students from six high schools who monitor six sites under ACD supervision.

Rum River Watershed Outlet Monitoring Program – ACD operates the Metropolitan Council's water quality and quantity monitoring station in the City of Anoka on the Rum River.

Lake Level – Volunteers monitor water levels in 22 lakes. ACD coordinates this effort by installing and surveying lake gauges, providing datasheets, quality checking data, and submitting data to the DNR for their website.

Stream Hydrology/Discharge – A variable number of streams each year have continuous water level monitoring devices. Formerly we monitored 8-12 sites but have reduced that to 6 sites due to a lack of funds. This monitoring is often paired with water quality studies so pollutant loading calculations and modeling can be done.

Reference Wetland – Wetland regulations often focus on determining whether an area is or isn`t a wetland. This is difficult at times because most wetlands are not continually wet. In order to facilitate fair, accurate wetland determinations the ACD monitors 18 wetlands throughout the county that serve as a reference of conditions. Electronic monitoring wells are used to measure subsurface water levels at the wetland edge every four hours up to a depth of 40 inches. This hydrologic information, along with examination of the vegetation and soils, aids in accurate wetland determinations and delineations. These reference wetlands represent several wetland types. Some have been monitored for 15+ years.

Observation Well - The DNR and ACD are interested in understanding Minnesota's groundwater quantity and flow. The DNR maintains a network of groundwater observation wells across the state. ACD is contracted to take monthly water level readings at 15 wells in Anoka County from March through December. The DNR incorporates these data into a statewide database that aids in groundwater trend mapping.

Rain Gauge Network – Precipitation can be quite variable across the county. In order to obtain accurate data to pair with other hydrological monitoring programs ACD manages a network of 6 datalogging rain gauges and 15 manual gauges operated by volunteers.

Inventory

Resource inventories are just as important as monitoring. Inventories provide resource information essential to the development of successful conservation projects. ACD is

equipped to complete a variety of inventory projects, having many years of aerial photos, GPS equipment, GIS software and the expertise to use them. We engage in some routine inventories and updates while also tackling periodic 'once in a career' efforts like the geologic atlas.

Geologic Atlas – ACD staff facilitated the collection of sufficient local matching funds from each of the water management organizations and watershed districts in the county to partner with the MN Geologic Survey to have a geologic atlas completed for Anoka County. ACD hired and oversaw seasonal staff who identified the location of 10,000 wells in the county. These data were provided to the MN Geologic Survey. The geologic element was completed and made available in 2013. The hydrogeologic component is underway and is anticipated in 2015 or 2016. Upon completion, ACD will actively train local resource management partners on its features and how to use it for decision making.

Shoreline – ACD conducts shoreline inventories on priority water bodies in partnership with water management organizations, watershed districts and lake associations. During the inventory process the condition of the shoreline is documented to identify erosion and adjacent land management practices. In recent years we have added an erosion estimation element to facilitate project identification and ranking for promotion efforts. Sites with the greatest estimated erosion are prioritized for outreach and funding. Figure 16 is of Lake George. Similar inventories have been completed for the majority of recreational lakes in the county.

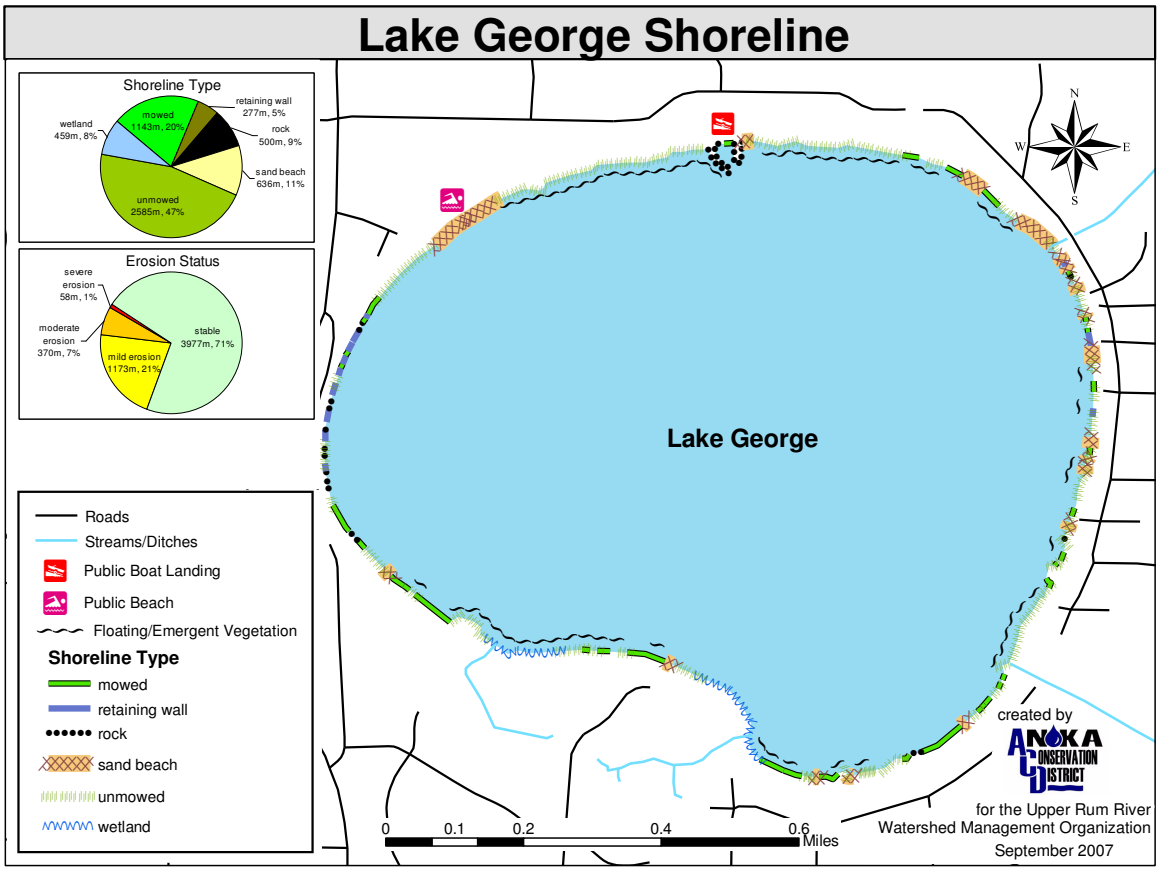


Figure 16: Lakeshore Erosion Inventory Example

Riverbank – ACD conducts riverbank condition inventories under contract with local and state partners. Inventories combine erosion length, bank height, and estimates of lateral recession rates to calculate annual soil loss. These data are used to seek funding and rank projects for technical and financial assistance. In 2012 ACD staff completed an inventory of riverbank condition on an eight mile stretch of the Mississippi River upstream of the Coon Rapids Dam. The inventory identified 8 sites totaling 3600 linear feet that were categorized as severely to very severely eroding. Figure 17 shows a site profile that was completed as part of the Mississippi River inventory.

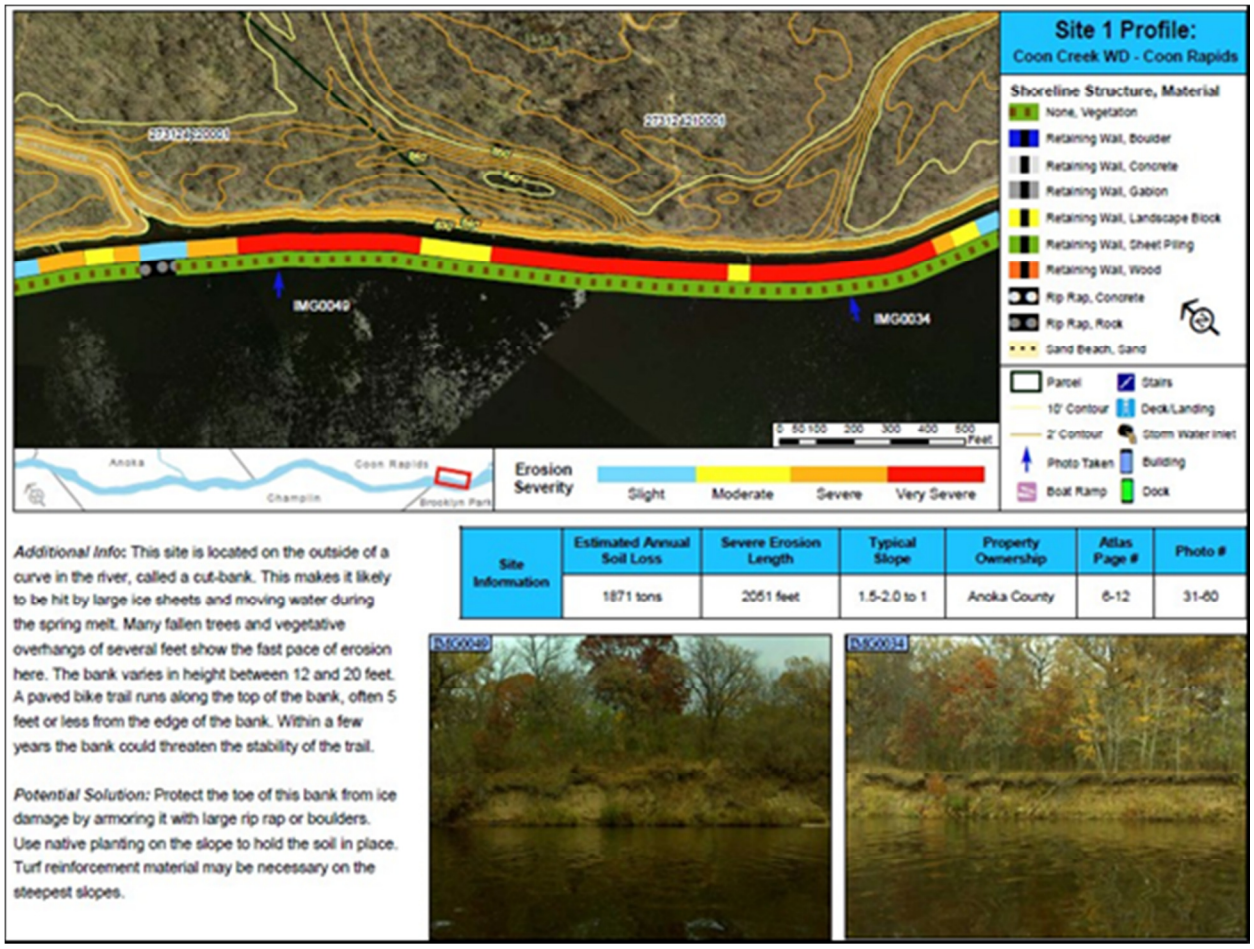


Figure 17: Riverbank Inventory Example

Analysis

Water Resource Diagnostics/ TMDLs/ WRAPS – ACD staff work with other state and local agencies to investigate water resources problems such as water quality impairments and hydrological problems. Over the years we have completed diagnostic studies on several tributaries to the Rum River as well as Sand Creek and Pleasure Creek. We completed a TMDL for Typo and Martin Lakes and are currently the lead agency working on the Rum River Watershed Restoration and Protection Strategy (WRAPS), which covers the entire Rum River watershed from Mille Lacs lake to the confluence with the Mississippi River in the City of Anoka. We are also assisting with WRAPS in the Sunrise River and Coon Creek watersheds.

Stormwater Retrofit Analysis (SRA) –Building from recently completed Non-Degradation Reports, Stormwater Pollution Prevention Plans and TMDLs, ACD partners with local funding sources to complete subwatershed analyses for priority water bodies. These analyses involve constructing a water quality model of a watershed and then adding water quality improvement BMPs to the model to determine their efficacy at improving water quality in the target water body. Specific practices with pollutant load reduction estimates and installation, operation and maintenance cost estimates are provided, enabling partners to select and budget for the installation of the most cost-effective practices. This approach was initiated through the Landscape Restoration Program developed by ACD and has since been implemented throughout the Twin Cities Metro Area and beyond. SRA identified projects have attracted millions in grant funding. ACD is committed to refining the SRA process and staff have become experts in the use of WINSLAMM and SWAT modeling applications used for urban and rural SRAs respectively.

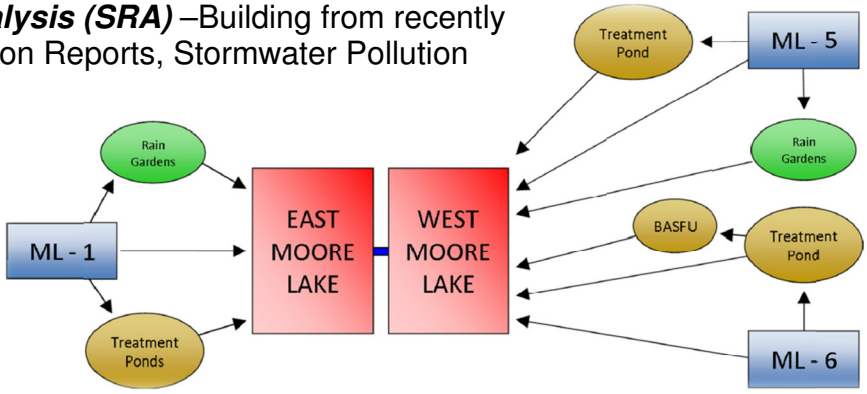


Figure 18: Watershed Model Flowpath Example

Figure 19: BMP Opportunities Map Example

Since 2009 ACD staff have completed 14 analyses with several more in progress. Funding from the Clean Water Fund through the Metro Conservation Districts (MCD) was used to fund all or part of several of the analyses.

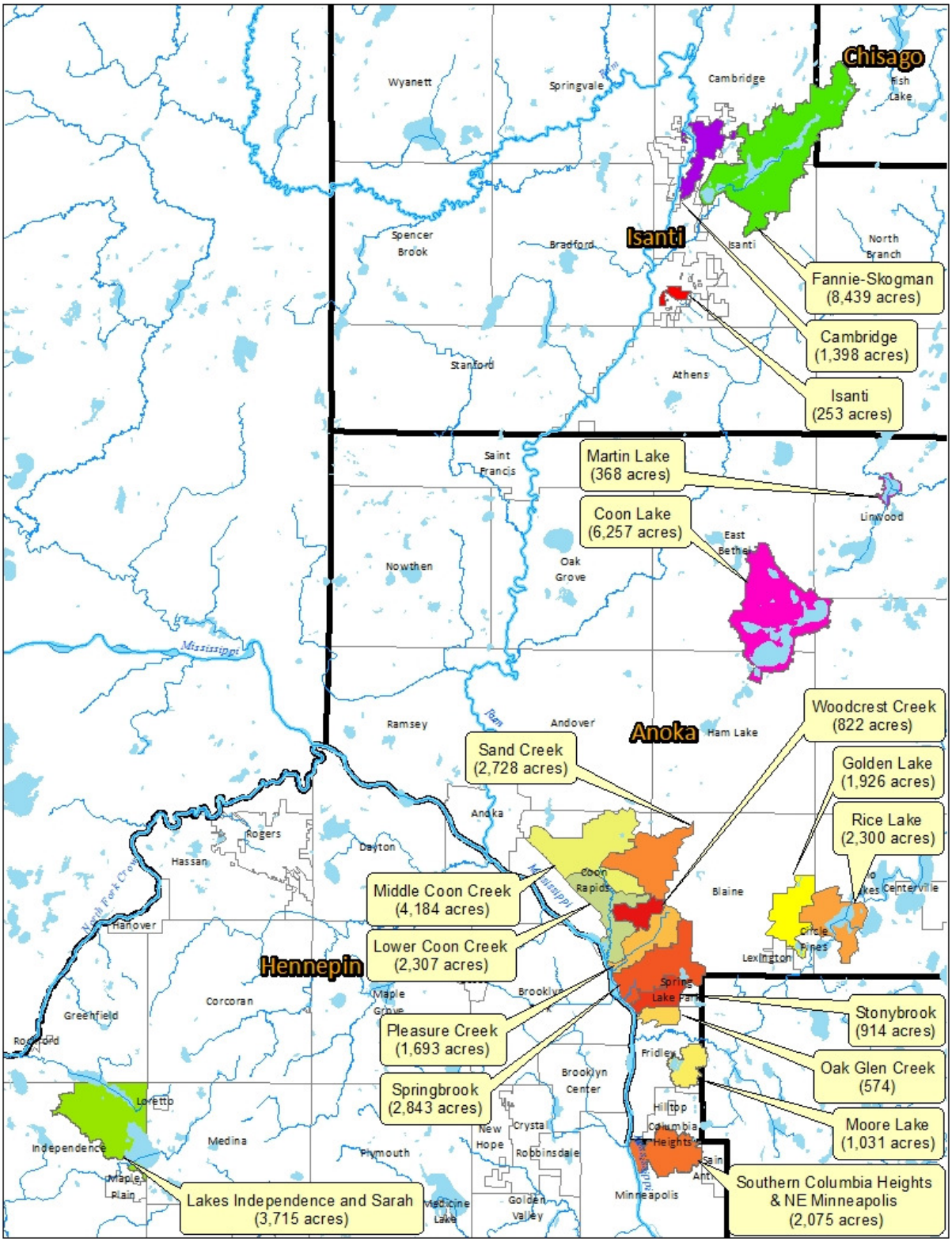


Figure 20: Stormwater Retrofit Analyses

Table 8: Stormwater Retrofit Analyses

Analysis	County	Complete (yr)	Partner
Sand Creek	Anoka	2009	Coon Creek Watershed District / MCD
Rice Lake	Anoka	2009	Rice Creek Watershed District / MCD
City of Cambridge	Isanti	2010	City of Cambridge / MCD
Woodcrest Creek	Anoka	2010	Coon Creek Watershed District / MCD
City of Isanti	Isanti	2011	City of Isanti /MCD
Golden Lake	Anoka	2011	Rice Creek Watershed District / MCD
Martin Lake	Anoka	2011	Sunrise River WMO / MCD
Oak Glen Creek	Anoka	2012	City of Fridley
Lower Coon Creek	Anoka	2012	Coon Creek Watershed District
Moore Lake	Anoka	2013	Rice Creek Watershed District / MCD
Lake Sarah & Independence	Hennepin	2014	Hennepin SWCD/ City of Independence / MCD
Coon Lake	Anoka	2014	Sunrise River WMO
Fannie Skogman Lakes	Isanti	2014	Isanti SWCD / MCD
South Columbia Heights/ North Minneapolis	Anoka/ Hennepin	2014	Mississippi River WMO / MCD
Stonybrook	Anoka	2014	Coon Creek Watershed District / MCD
Pleasure Creek	Anoka	In progress	Coon Creek Watershed District
Springbrook	Anoka	In progress	Coon Creek Watershed District
Middle Coon Creek	Anoka	In progress	Coon Creek Watershed District

Plat Reviews – ACD staff review development proposals in several municipalities and provide comments from a natural resource perspective. In reviewing the development proposal, we provide an assessment of how the development can have the least impact on natural resources while still meeting the community's growth needs and the developer's financial needs. We approach it with the attitude that development is not bad, but it can be done poorly. Municipalities incorporate ACD's comments at their discretion.

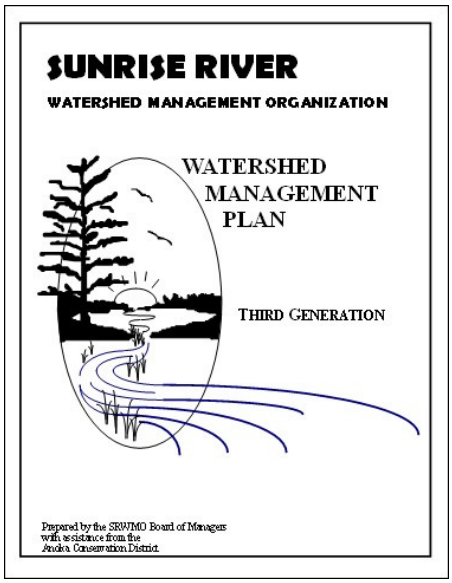
Being involved in the development review process enables ACD staff to make progress on several high priority resource problem areas. This process would be significantly enhanced if ACD were to become involved at the sketch plan phase and if more cities utilized the service. We

Table 9: Plat Reviews

Year	Plats Reviewed	Total Lots	Total Acres
1992	15	222	736
1993	29	542	1694
1994	24	397	1163
1995	34	645	2203
1996	15	216	1006
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
2008	1	7	25
2009-12	0	0	0
2013	3	46	53

also intend to add water quality modeling as an element of the review process. Additionally, planning and zoning commission members should receive copies of ACD's comments directly and ACD staff should offer to attend P&Z meetings for higher priority development proposals.

Planning



Water Management – ACD staff assist water management organizations with updates or supplements to their water management plans. We also help develop annual plans of work to ensure progress is made toward the goals outlined in their water management plans. ACD completed updates to the Sunrise River Watershed Management Organization's plan and facilitated a technical advisory committee for the Upper Rum River Watershed Management Organization that developed wetland and stormwater management standards, amended them to the WMO Plan and incorporated them into member city ordinances and control measures.

ACD is actively engaged with partners to implement a wide range of elements of three Watershed Restoration and Protection Strategy reports (WRAPS) in the Sunrise River, Rum River, and Coon Creek watersheds. WRAPS reports are comprehensive watershed analyses that are being used instead of water body specific TMDLs.

Groundwater Sustainability – The supply of sustainable drinking water in the Twin Cities Metro Area has emerged as a pressing concern. Model studies by Met Council predict shortages in some communities by 2030. The Governor appointed ACD's Water Resource Specialist to serve on the Metropolitan Water Supply Advisory Committee to help develop strategies to address this. The 2012 drought punctuated the concern about diminishing groundwater as lake levels in the Metro area dramatically dropped and the connection between surface waters and groundwater was implicated. Ultimately it will be important to implement changes on the ground to promote conservation and recharge. ACD is committed to being an active part of the solution.

Open Space – ACD has provided several municipalities with planning assistance to encourage the protection of open space during the development process. Nowthen, Andover, East Bethel, Ham Lake and Linwood all benefited from this effort. This was made possible with funding from the Legislative Citizens Commissions on Minnesota Resources. Staffing to continue this service is no longer available. ACD will continue to encourage open space protection as part of the development review process.

Land Protection

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. With passage of the Clean Water, Land, and Legacy constitutional amendment, substantially

more funds are available than were available during our promotional efforts in the past. Land protection promotion should be renewed with consideration of current funding options.

Conservation Easements – ACD holds conservation easements on three properties in Anoka County; a 65 acre parcel in the City of Nowthen that is being restored to prairie and savanna, a 200 acre parcel owned by the City of Anoka along the Rum River, and 45 acres on the south shore of Deer Lake in East Bethel.

Technical and administrative assistance is provided to landowners interested in donating a conservation easement. Preparation of easement documents and natural resource management plans can be very time consuming and expensive to contract for in the private sector. This expense can be a large deterrent to interested landowners.

Once easements are established, annual inspections and meetings with the landowner are important to ensure that there are no easement violations and that progress is being made on approved management plans. A lack of easement maintenance funding to implement management plans has been identified as an issue that staff needs to address. ACD's policy is to partner with the local municipality so that they can assume the enforcement authority.

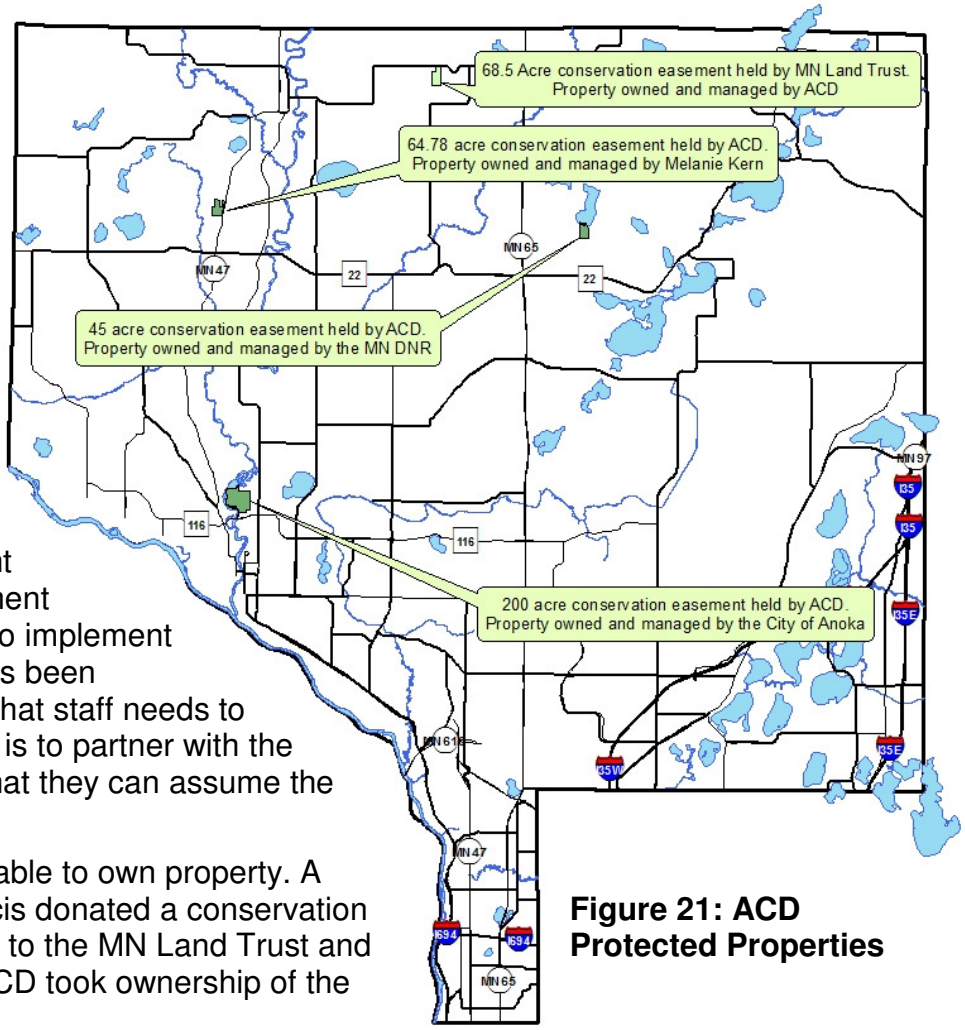


Figure 21: ACD Protected Properties

Ownership – ACD is able to own property. A landowner in St. Francis donated a conservation easement on 70 acres to the MN Land Trust and the fee title to ACD. ACD took ownership of the property in 2011.

Conservation Development – Land protection will be encouraged during the development review process when the development is located on an identified wildlife corridor. 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.

Recommendation for County – ACD is requested by the Anoka County Board of Commissioners to comment on the resource limitations and suitability for conservation purposes whenever a proposal by the state to purchase land is submitted. ACD reviews each project objectively and recommends only those sites with outstanding resource value either by virtue of location, size or ecological characteristics, be protected through purchase by the state.

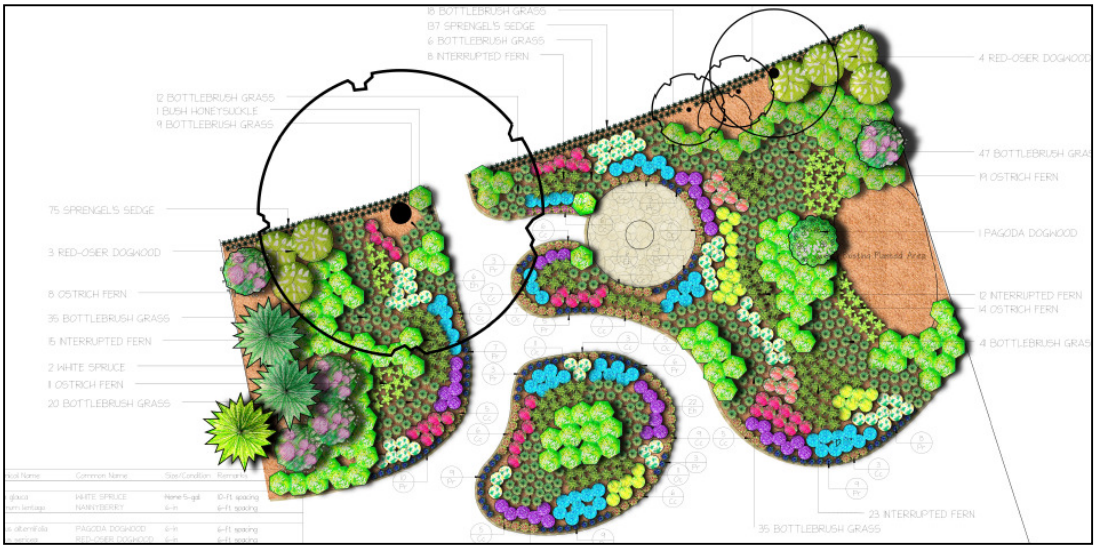
Technical Assistance

While monitoring, inventory, analysis, and planning are important, they achieve nothing unless they result in changes in practices on the ground to improve natural resource quality, quantity and distribution. ACD provides direct technical assistance to facilitate conservation practice implementation.

Water Quality Practices

Consultation with landowners is the first step. The ACD meets with landowners to provide advice about water quality improvement projects. The discussions include consideration of landowner goals, site characteristics, site limitations, and available financial assistance that may exist. Generally, the types of projects discussed include rain gardens, lakeshore restorations, and erosion correction. Most site consultations include one hour of preparation, one hour on-site, and one hour of follow-up.

Project planning and design may follow the site consultation. While planning and design components will vary by project, this service generally includes a drawing set of existing conditions, construction design plans, planting plan, and cross sections as appropriate. A detailed estimate of labor and materials is also included. The size and complexity of the project will influence assessment and design time. If project scope or complexity is beyond the capacity of ACD staff and requires the services of a professional engineer, ACD can request funding from the Metro Conservation Districts to assist with the cost, but an increase in landowner fees may be necessary. Landowners may be charged a design escrow to cover the engineering fees. If the project moves forward to installation, the escrow is applied toward the cost of construction. If a construction bid is received that is within 10% of the original construction estimate and the landowner chooses not to pursue the project, the escrow may be used to reimburse ACD for the cost of engineering. This process is designed to



limit the amount of speculative technical assistance that does not result in a conservation projects.

Installation oversight is crucial, and a service the ACD highly recommends. This includes a preconstruction meeting with the contractor, landowner and permitting authorities along with periodic inspections of the work progress and a final inspection upon completion of the project to ensure proper installation.

Post construction inspections ensure the project is functioning as intended and properly maintained. The number of inspections varies greatly depending on the nature of the project and environmental conditions that could influence its success such as drought or flooding.

Project types most often considered include:

Curb cut rain gardens are used in residential and commercial neighborhoods with storm sewer curb and gutter, and are designed to intercept and infiltrate rain water from roadways. Rain Guardian™ pretreatment chambers designed and patented by ACD make maintenance much easier and improve rain garden function.

Rain leader disconnect rain gardens are used on residential and commercial lots with storm sewer curb and gutter, and are designed to intercept and infiltrate rain water from roof tops, driveways, sidewalks and other impervious surfaces. These can be useful in circumstances where curb cut rain gardens are not practical due to sidewalks, trees and utilities.

Lakeshore and riparian plantings involve the establishment of deep rooted native perennial grasses, sedges, wildflowers and/or trees and shrubs above the normal water level with little or no grading.

Lakeshore restoration involves the establishment of deep rooted native perennial grasses, sedges, wildlflowers and/or trees and shrubs including the shallow aquatic zone, transitional zone and upland with little or no grading.

Lakeshore and streambank stabilization includes the treatment of active erosion utilizing bioengineering and/or hard armoring often in combination with a shoreline restoration or buffer planting and typically involves some grading.

Treatment pond modification may also be recommended. ACD will typically call upon the expertise of a consulting engineer if this practice is being considered.

Iron enhanced sand filters may also be recommended to capture dissolved phosphorus discharging for new or existing stormwater treatment ponds. ACD will typically call upon the expertise of a consulting engineer if this practice is being considered.

Campus retrofits are larger scale projects such as school grounds, churches, municipal building and business complexes that may include several different practices noted above.

Habitat Improvement – Just as many water quality improvement practices are a benefit to wildlife, many habitat improvement practices also improve water quality, water conservation, flood control and other resource concerns. Including the following services under habitat improvement does not imply that is the only benefit.

Ecosystem restoration varies in scale and type, from 2 acres to 200 acres or more and can involve the restoration of a single ecosystem such as a prairie, savanna, woodland or wetland, or a complex of interconnected ecosystems. Larger scale projects are typical of publicly held lands. Most projects on private property are less than 20 acres in size. 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 funding sources such as Wildlife Habitat Improvement Program, Environmental Quality Incentives Program, Conservation Partners Grants, Lessard-Sams Outdoor Heritage Council, and Legislative Citizens Commission on Minnesota Resources.

Backyard habitat refers to projects less than an acre in size. Backyard habitat enhancement projects focus on attracting wildlife by providing food, water, and shelter but not in a way that could be considered an ecological restoration. Plans vary based upon the wildlife the landowner wishes to attract but can include butterfly gardens, bird houses and feeders, plantings of both native and non-native species (although native species are encouraged) to provide food and shelter, rock and brush piles, and water features.

Invasive species control is often a first step toward ecosystem restoration. The control of invasive species such as Common and Glossy Buckthorn, Tartarian Honeysuckle, Garlic Mustard, Purple Loosestrife, Reed Canary Grass, Spotted Knapweed and several thistle species must be achieved in order to begin the process of reintroducing desirable native species. In some cases it is the only activity needed to preserve an otherwise high quality ecosystem. ACD has undertaken a “buckthorn clean sweep” project, where sparse buckthorn infestations in our highest quality natural areas are being eradicated. Past efforts treated over 1,000 acres in this way and a project to complete an additional 450 acres is planned for 2014-2016. ACD will pursue funding to continue this effort and dedicate some staff and financial resources in October and November of each year regardless of outside funding to ensure continuity in this program.

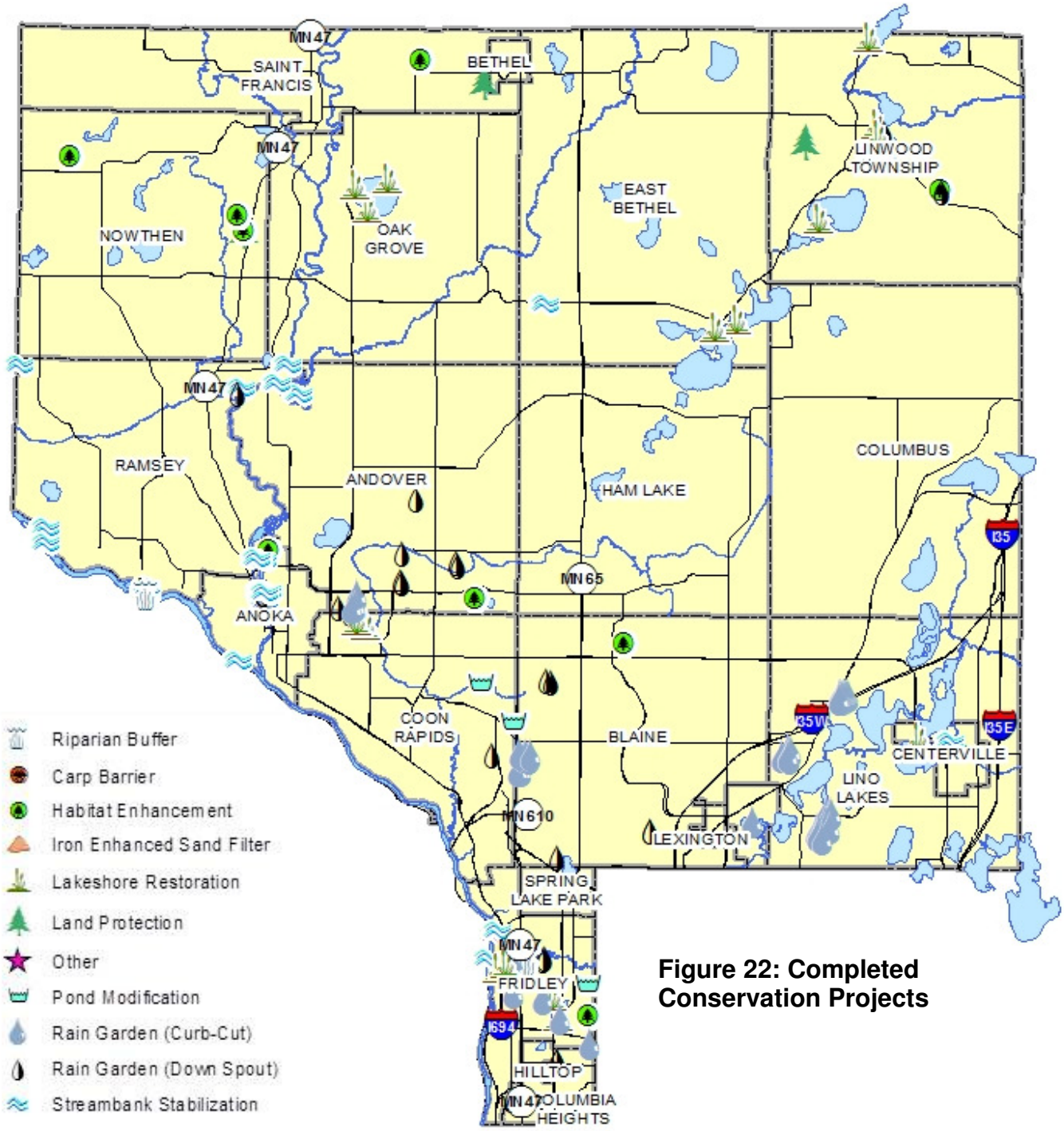


Figure 22: Completed Conservation Projects

Wetlands – Most of the work done by ACD related to wetlands is due to the Wetland Conservation Act of 1991 (WCA). Some activities are mandated while others are offered to help landowners cope with the complexity of wetland regulation. A full time Wetland Specialist is employed to meet the workload demands of this area.

Since the inception of the WCA, 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.

Funding for staff to assist with the WCA is challenging as state funds must be matched dollar for dollar and conservation districts do not have the means to garner those funds.

WCA compliance can be challenging to those residents undertaking projects who have never dealt with the WCA in the past. ACD helps residents understand how the WCA impacts their project and provides them with the resources necessary to develop a compliant project proposal. ACD also serves as a quality control mechanism to ensure LGUs are fulfilling their obligations under the law. ACD encourages LGUs to utilize escrows and deed restrictions to achieve compliance.

WCA enforcement is one area with the WCA that conservation districts are exclusively mandated to handle. Cases can become extremely prolonged when landowners refuse to voluntarily comply with restoration or replacement orders. While the expense can be charged back to the violator, collecting on those invoices is unlikely. For a few years, a BWSR grant program enabled ACD to enhance efforts to enforce the WCA by directing more staff time toward the resolution of violations.

Delineation of wetlands according to the 1987 US Army Corps of Engineers Manual for Identifying and Delineating Wetlands is an essential skill in enforcing the WCA. ACD periodically provides wetland delineation services for small projects. This helps to maintain the delineation skills of staff, which is critical for the effective implementation of quality control measures for WCA compliance. It also provides residents with a reasonably priced service for very small sites.

Monitoring of replacement wetlands and tracking of replacement wetland monitoring requirements for LGUs are two tasks completed by the ACD Wetland Specialist.

Conservation Plans – Property level conservation plans are important components of many programs. ACD develops conservation plans at many scales with variable natural resource focus areas.

Water appropriations conservation plans are required for most Minnesota Department of Natural Resources water appropriations permits. They are to be developed with, and approved by, the soil and water conservation district. Most often, these plans are similar to water conservation plans already developed for other projects. However, some customizing is always necessary.

Conservation easement management plans are required whenever public funds are expended to secure a conservation easement. ACD prepares plans that outline how the property's soil, water and biota will be managed to maintain and improve the ecological functions of the property.

Groundwater use audits are a concept similar to home energy audits but are aimed at looking for ways to reduce consumption of groundwater as well as increasing infiltration. ACD will seek funds to develop and implement groundwater use audits.

Financial Assistance

Project Cost Share – Financial assistance in the form of project cost share grants is sometimes available along with our technical services to encourage projects on private

lands that will have public benefits of water quality or wildlife habitat. There are several potential sources of funding and ACD works with landowners to help coordinate the application process. Grants, funded mostly by partner agencies but administered by ACD, typically provide 50-75% cost share on materials. Increased funding commitments from WMOs will be sought to increase conservation practice installations.

Watershed Districts and WMOs have cost share funding available for water quality improvement and demonstration projects. ACD partners with Rice Creek Watershed District to administer RCWD's cost share program. Through this partnership, ACD meets with landowners to discuss potential resource management strategies, assists with the development of practice designs and cost estimates, coordinates cost share requests with funding sources, and oversees project installation. RCWD provides the bulk of the cost share funds and ACD and RCWD work together to promote and prioritize project activities. ACD administers small project cost share grants for the Sunrise River, Upper Rum River and Lower Rum River WMOs. Coon Creek Watershed District directly engages in project installation and contracts with ACD to promote projects with landowners and attend to all of the necessary administrative details up to the construction process. CCWD pays for all of the construction costs and currently does not have a cost share program for non-target projects.

ACD Conservation funding is currently not at the programmatic level but as funds from the nation-wide sale of ACD's Rain Guardian increase, we will be able to direct a portion of the county allotment to project installation cost share in partnership with landowners.

Ag. Preserves Program funds have historically been secured through a competitive grant process at the county level and made available to landowners to help defray the cost of water quality and habitat improvement projects.

State Cost Share Program funds are available for approved practices provided they are designed by someone with technical approval authority for the particular practice. Many approved practices require design by a licensed engineer. In recent years, ACD has used state cost share funds to provide staff for technical assistance.

Clean Water Fund project cost share is available through the allocation to the Metropolitan Landscape Restoration Program made to the Anoka Conservation District. Use of the funds is limited to projects that were identified as the result of a subwatershed level stormwater retrofit assessment. ACD will administer these cost share funds throughout the eleven county metro area.

Engineering Assistance – Funding is available through the Metro Conservation Districts Non-Point Engineering Assistance Program (NPEAP) to contract with consulting engineers for the design of conservation practices, typically to be installed with cost share funds. Applications must be made through ACD for projects in Anoka County.

Local Water Planning – ACD applies for and manages local water planning funds through BWSR's Natural Resources Block Grant. These funds are used to offset the cost of assisting WMOs with the implementation of their water plans. Anoka County receives approximately $11,000 to be shared among the water management entities.

WCA Administration – ACD applies for and distributes funds through BWSR's Natural Resources Block grant to reimburse LGUs a portion of the cost of implementing the WCA. Approximately $63,000 is available for Anoka County LGUs which amounts to approximately 25% of reported expenses by LGUs in Anoka County.

Administrative Assistance

WMO Reporting – Water management entities are required to submit annual reports of activities and finances to the Board of Water and Soil Resources. ACD prepares annual reports on behalf of three of the four WMOs for a fee.

Management – Through a cooperative agreement with Isanti SWCD, ACD's Water Resource Specialist serves as the Isanti SWCD Manager. This agreement allows ACD staff to broaden their professional experience while giving Isanti SWCD access to ACD's breadth of expertise to develop programs and services that Isanti SWCD hasn't historically offered.

Website hosting – The ACD has designed and manages websites for the Upper Rum, Lower Rum, and Sunrise River WMOs. We also created the Metro Conservation Districts website and recently set up the website for Isanti SWCD.

Products & Equipment

Tree Sales – ACD hosts an annual tree and shrub seedling sale. We typically sell 15,000+ seedlings to 250+ landowners. We sell seedlings in bundles of 10 and 25, as our focus is habitat improvement, not individual landscaping trees. The tree sale is an opportunity to provide one-on-one consultations with landowners about habitat improvement. We also provide some native grass and wildflower seed. The addition of online credit card order processing has streamlined the ordering process and reduced administrative overhead.

Equipment Rental – ACD has invested in several pieces of equipment that help landowners implement conservation practices. The equipment is available for rent and is used to install ACD coordinated conservation practices. Available equipment includes;

- Truax 3' Native Seed Drop Seeder
- 25 Gallon Herbicide Tank and Boom Sprayer
- 52" Pull Behind Brush Mower
- 14" Chain Saw

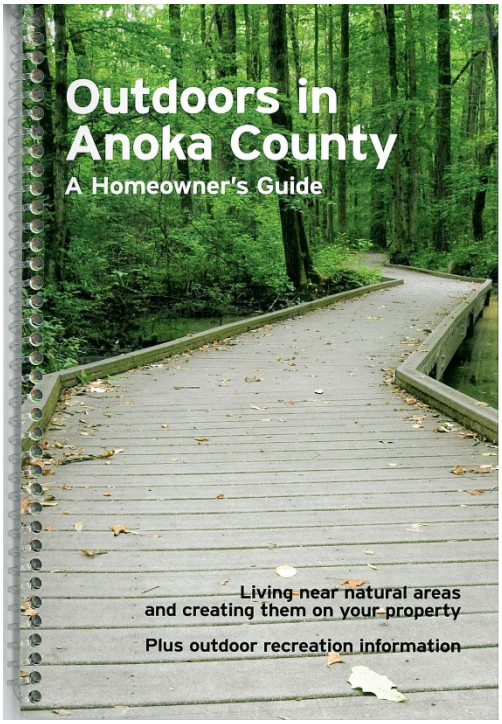
Safety equipment and training is included with the rental.

Rain Garden Pretreatment Chamber – ACD staff designed and patented the Rain Guardian™ pretreatment chamber for rain gardens to greatly reduce the time and effort needed for maintenance. We are in the process of expanding sales with distributorships nationwide.

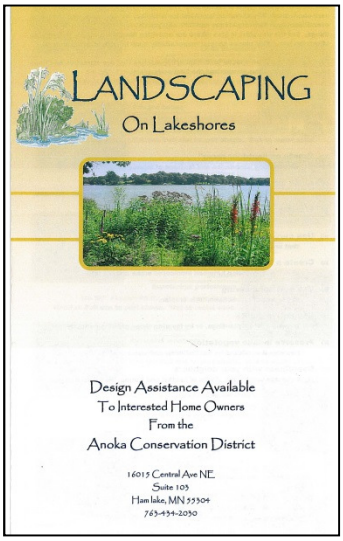
Miscellaneous Conservation Materials – Many materials needed for conservation projects are not readily available, or are only available in bulk quantities. This can discourage landowners from moving forward with a project. To facilitate project installation ACD has several items on hand and provides them at cost including herbicide, geotextile fabric, biodegradable stakes, duckbill anchors, galvanized steel cable, and horseshoe clips.

Education

Website – ACD manages several websites including one about the ACD (www.AnokaSWCD.org), one that serves as an informational and marketing tool for the ACD patented Rain Guardian pretreatment chamber (www.RainGuardian.biz), one for the Lower Rum River WMO (www.LRRWMO.org), one for the Upper Rum River WMO (www.URRWMO.org), and one for the Sunrise River WMO (www.SRWMO.org).



Homeowner's Guide – One of our largest efforts was the booklet "Outdoors in Anoka County: a Homeowners Guide." The guide was developed specifically for landowners living adjacent to high quality natural areas but contains information on topics relevant to every Anoka County resident. The guide includes insights into our high quality natural areas and suggested 'must see' public open spaces. It has tips on landscaping for wildlife, water quality, energy conservation, water conservation, and healthy lawns. It includes information on invasive species and plant diseases common to our area as well as some discussion about wetlands management and regulation. It touches on septic system care, household and yard waste management, and well water concerns. Lastly, it includes a map of Anoka County's park system in hopes of getting people outside, connected and appreciative of the natural resources we share. Four thousand of these booklets are being distributed to homes adjacent to important natural areas.



Brochures – ACD staff develops brochures as a workload management tool. When requests for the same type of information become sufficiently frequent, it pays to invest staff time in the development of a brochure to more effectively convey the information. ACD staff developed a series of brochures to empower landowners to implement conservation on their properties including;

- Lakeshore Restoration: Enhancing water quality and habitat on your shore,
- Riverbank Stabilization: Understanding water flow and managing erosion,
- Backyard Habitat: Attracting wildlife to your property,
- Water-Smart: Conserving water at home,
- Rain Gardens: Treating runoff at the source, and
- Invasive Species Management: Restoring ecosystem health.

We also developed a series of eight brochures on various topics related to wetlands and the Wetland Conservation Act of 1991 that are in the process of being updated including;

- Purchasing and Developing Land,
- What's Regulated and Who Regulates,
- Exemptions,
- Wetland Impact Avoidance & Minimization,
- Wetland Replacement and Appeals,
- Wetland Banking,
- Ditch Maintenance, Pond Excavation & Mining, and
- Violations and Enforcement.

Display/Events – ACD has developed displays for many topics including, but not limited to, water-smart, rain gardens, backyard wildlife, lakeshore restoration, streambank stabilization, oak wilt, tree and shrubs sales, native plants, prairies restoration, ground water, and wetlands. The displays are used throughout the year at many events and are often staffed by one of ACD's resource specialists.

Workshops and Presentations – ACD periodically partners with cities and watershed districts to provide information on rain garden design and installation, watersmart practices, landscaping for wildlife, and lakeshore and streambank restoration. Presentations are tailored to the audience and range from 'how-to' workshops for landowners to implement projects at home, to highly technical presentations to other professionals in the natural resources management field.

Videos – In 2011, ACD worked with Anoka County Public Relations staff to develop videos to highlight the accomplishments of the Metro Conservation Districts Landscape Restoration Program. We have since produced several videos in-house on a variety of topics including: Lakeshore Restoration, Lower Rum River WMO, Cedar Tree Revetments, the Rain Guardian, Typo and Martin Lake Carp Barriers, ACD Annual Report, Mississippi Riverbank Inventory, Stormwater Infrastructure Inspection Services, Rain Garden Installation, and Scenic River Rule affecting the Rum River. All ACD developed videos can be seen at the AnokaSWCD YouTube page.

News Articles – ACD frequently submits articles to the local newspapers to promote programs and services and to educate the public on topics related the natural resources stewardship.

Tours – In 2014 ACD participated in the BWSR Board conservation tour by preparing handouts and presenting information on several of the tour stops throughout the county. ACD intends to utilize tours more frequently in the future to promote conservation concepts to select audiences.

Project Profiles – For each project installation that ACD is an active partner in, we prepare a project profile. Project profiles include images of the project site before and after, benefits received, expenses incurred, and partners with corresponding cash and in-kind contributions to the project. All project profiles are available online. Eventually, we plan to have them linked to a mapping tool that shows the locations of each project.

Public Officials Outreach – In 2012 we implemented an outreach campaign to keep public officials in Anoka County better informed of ACD's activities. Now, as projects are being developed and installed/implemented, ACD staff will provide email updates with brief descriptions, photos and links to important information to county commissioners, state legislators, city officials and ACD supervisors.

General ACD Operations

General/ Admin/ Vacation/ Holiday – This category accounts for that portion of each employee's time that is consumed with general district business along with vacation and holiday time. Administrative tasks performed by the District Manager and Administrative Assistant are also included in this category, composing the bulk of the hours.

General Planning – Effective natural resource management requires both cooperative planning with other agencies, as well as in-house prioritization. These efforts involve ACD staff, supervisors, other elected officials, and other agencies. Comprehensive planning is completed every five years with annual plans completed each year.

Program Promotion – As ACD staff pursue new partnerships and funding sources to develop programs and services that address the objectives identified by the Board of Supervisors, their time is recorded as promotion. Promotional activities include speaking at public events, workshops, and other efforts that increase program visibility. Promotion of district programs and services is also achieved through partnerships and outreach to other agencies and entities that share the same jurisdiction or purpose such as municipal environmental and parks commissions. Applying for new grants to fund programs is a major component of program promotion.

Day at the Capitol – In most years, ACD supervisors and staff spend time visiting with legislators regarding natural resource issues in Anoka County. During the legislative session in particular, ACD will often organize a Day at the Capitol whereby we meet with as many of our elected representatives as possible to promote the highest priority issues for the board.

Staff Training – In order to provide high quality service, the Board of Supervisors is committed to retaining highly skilled staff. ACD offers staff continuing education opportunities through professional workshops, conferences, and purchase of software, books and other materials.

Stable Funding – ACD receives approximately one third of its operating 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 does not lend itself to addressing the most pressing resource needs of the county. A stable funding source is needed in order for the ACD to have the flexibility and capacity to meet the needs of the public without having to compromise the resource by following limited grant opportunities.

Outreach to Local Government Units – LGU officials and staff routinely make important decisions about land use and land management that can have lasting effects on natural resource quality, quantity and distribution. It is in the mutual interest of ACD and LGUs to implement approaches that accommodate growth, minimize capital investments, and efficiently deliver public services, while maintaining the quality and

quantity of water and other natural resources. Natural resources play a critical role in the areas of recreation, flood control, water treatment and conveyance, energy, ecology, food production, commercial and industrial processes, consumption, and aesthetics. ACD is uniquely qualified to assist LGUs to consider natural resources during the decision making process by providing updated monitoring and inventory data, and by addressing inquiries about the often complex physical, chemical and biological natural resource interactions that may influence LGU decisions.

Effectiveness of Past Efforts

During the planning process ACD staff and supervisors identified the policies, practices, programs, and services that were the most successful and the least successful. As we plan for the future we need to emulate our most successful efforts and modify those that fell short to maximize our positive impact on Anoka County's natural resources.

Successes

- Focus on customer service.
- Model water quality and hydrologic impacts of projects.
- Conduct analyses of subwatersheds to identify BMP opportunities.
- Actively promote conservation projects in optimum locations.
- Design off-line water quality improvement practices in-house.
- Consider cost-benefit for all projects.
- Focus on project installation and serving as a project manager.
- Serve as writer, coordinator, manager for multi-partner grants.
- Coordinating large scale projects and partners (Geologic Atlas, Carp Barriers, Oak Glen Creek Stabilization, Rum River WRAPS)
- Work across county boundaries to assist neighboring jurisdictions with conservation efforts.
- Creating high quality work products (Water Almanacs, SRAs, erosion inventories, project profiles, websites, videos, displays, brochures, comprehensive and annual plans, handbooks)
- Creating a highly productive work atmosphere of mutual respect and dedication to conservation vision.
- Advance the practice of conservation efforts through innovation.
- Commitment to long-term project success and follow-up.
- Adapt to changing needs and opportunities.
- Maintain highly trained staff.
- Maintain updated computer software and hardware.
- Contract out IT services.
- Develop and patent the Rain Guardian pretreatment chamber.
- Promote Rain Guardian sales nationally through distributorships.
- Purchase office headquarters and assume role as landlord.
- Affect state policy and procedures through advocacy directly, through the MASWCD, and by participating in regional commissions and taskforces.
- Program and project promotion through direct communication with elected officials, frequent newspaper articles, and current websites.

Improvements Needed

- Open space planning is a priority to ensure the preservation of our ecological heritage in a sustainable network of wildlife hubs and corridors. To succeed long-term, with turnover on city councils and planning and zoning commissions, assistance to LGUs needs to be supported with long-term stable funding so it can be institutionalized.

- ACD staff must work to standardize WCA administration by LGUs to ensure continuity throughout the county. This may require supporting changes to who serves as the WCA LGU for some areas as well instituting a fee structure that provides adequate funding for services provided.
- Support actions by BWSR to compel effective water resource management in the Upper Rum River WMO.
- Research making individual sewage treatment system (ISTS) and well sealing funding opportunities available to Anoka County residents.
- Research funding opportunities to offer assistance with oak wilt control to landowners.
- Work through the Metro Conservation Districts to capitalize on mutually beneficial cross-county collaboration and training to share expertise among conservation districts.
- Actively engage in the discussion regarding ground water protection vs. infiltration; quality vs. quantity.
- Enhance development plat review process by adding water quality modeling and being involved in the sketch planning phase and promote the service to northern tier communities.
- Develop redundancy in staff expertise through cross-training to ensure program continuity during staff turnover.
- Develop and maintain a project inventory to track project effectiveness and maintenance needs over time.

Adjustments in Authorities

Resolutions to initiate the programs and services described in this plan will be prepared as appropriate. ACD's statutorily derived authorities are sufficient to implement this plan. With a stable funding source, this plan could be enhanced with a timeline for implementation.

ACD will support funding options, legislation and local ordinances that achieve the following:

- Provide SWCDs with operational and programmatic levy authority.
- Conserve groundwater through mechanisms such as mandated rain/soil moisture sensors on irrigation systems, private well regulation, limits on manicured lawn size, plumbing code updates to allow gray water segregation, reuse and/or infiltration.
- Allow reimbursement of full fee schedule rates from state grants for soil and water conservation districts.
- Provide funding for the long-term inspection and maintenance of BMPs.
- Support development of a technical approval authority training and certification program by BWSR that doesn't rely on NRCS provided training and oversight. An online module based system would be ideal to accommodate training needs arising from staff turn-over and workload variability over time and would follow employees as they move between jobs.

Natural Resource Policies

Natural Resource Regulation Variances

State and local rule, policy and ordinances designed to protect natural resources are not always written to address all cases and may inadvertently lead to natural resource degradation when strictly enforced (e.g. filling a wetland in order to achieve wetland setback and buffer requirements). Project applicants are encouraged to seek, and permitting authorities are encourage to grant, variances from rules, policies, and ordinances when doing so will clearly result in a better outcome in terms of natural resources protection and management. Furthermore, policy makers are encouraged to incorporate performance standards into rules, policies, and ordinances to help avoid unintended consequences and allow for flexibility to achieve natural resource management goals.

Wetland Resources

Perform and/or Review Wetland Delineations

The Anoka Conservation District will not perform wetland delineations when frozen soils or snow cover make adequate analysis impossible in the professional opinion of the Anoka Conservation District technical staff.

Wetland Fill to Create Buildable Lots

Wetlands should not be filled in order to enlarge the buildable area to create buildable lots. Where impacts to highly degraded wetlands can be offset by permanent protection of high quality upland habitats, flexibility may be warranted.

Issuing Extensions for Compliance with Restoration Orders

Extensions for compliance with wetland Restoration Orders may only be recommended when the landowner has made a good faith effort to comply but was unable due to mitigating circumstances. The landowner must provide correspondence summarizing the reason for not complying and a date by which they will comply.

Holistic Natural Resource Management

All natural resource functions and values should be weighed when making management decisions to strive for the best overall outcome for soil, water, wildlife, recreation, and aesthetics. When reviewing applications and plans that may adversely affect natural resources, the Anoka Conservation District will recommend actions that will result in the least environmentally damaging practicable alternative. The following principles should be applied.

- Preserve natural resources that are rare in occurrence or of exceptional quality.
- Avoid degradation that is difficult or impractical to fully remediate.
- Consider all ecosystems; terrestrial, aquatic and transitional.
- Preservation of an in-tact native ecosystem is preferable to restoration of a degraded ecosystem.
- Minimize long-term impacts from short-term activities (e.g. dewatering, minor grading or soil storage that allows for the establishment of invasive species).
- Identify, and strive to minimize and remediate for long-term impacts (e.g. reduced infiltration that lowers the surficial water table and subsequently shrinks wetlands).
- Balance short-term and long-terms impacts and benefits.

The following are examples of the application of these principles.

- Discourage excavation in wetlands that are dominated by native, non-invasive plant species.
- Maintain the hydrologic regime of habitats that support native, non-invasive plant communities.
- Limit the placement of mitigation wetlands to highly degraded terrestrial habitats or highly degraded wetland areas.
- Discourage removal of native, non-invasive vegetation.
- Request an on-site biological survey and report the proposed taking or degradation of native plant communities;
  - within areas mapped as moderate, high, or outstanding DNR biodiversity significance;
  - that have a conservation status ranking of S1, S2, S3, or S4;
  - that involve the taking of state (endangered, threatened, special concern) or federally-listed (endangered, threatened, candidate) species;
  - that are likely to support state or federally-listed species.
- Discourage pruning of, or damage to, oak trees April – July.
- Abandon private and public lateral drainage ditches during development to restore wetland hydrology provided adequate stormwater conveyance capacity can be maintained.
- Encourage discharge of dewatering water to areas where storage and infiltration is most likely to occur.

Criteria for Wildlife Habitat Exemptions

ACD will use the following criteria for certification of MN Statute Chapter 8420 Wildlife Habitat Exemptions

In Chapter 8420 Minnesota Wetland Conservation Act there is an exemption for excavation and deposition of spoil in a jurisdictional wetland for the purpose of improving wildlife habitat. The purpose of this guidance document is to provide sound rationale for applicants to perform wetland excavation and spoil deposition to improve wildlife habitat.

The 1995 Amendments to the Wetland Conservation Act of 1991 states “a replacement plan for wetlands is not required for excavation or associated deposition of spoil within a wetland for a wildlife habitat improvement project, if:” the project maintains all of the following regulations:

1. The area of deposition, within the wetland, does not exceed five percent of the wetland area or one-half acre, whichever is less.
2. Spoil is stabilized to prevent erosion, and permanent native, non-invasive vegetation is established, via plantings or seeding.
3. The project does not have an adverse impact on any species designated as endangered or threatened under state or federal law.
4. The project will provide wildlife habitat improvement as certified by the Soil and Water Conservation District using “Wildlife Habitat Improvements in Wetlands” guidance, or similar criteria used by the SWCD board.

Excavation and deposition of spoil of a wetland may be certified by the Soil and Water Conservation District for wildlife habitat exemption improvement provided the following conditions are met:

1. Excavation and deposition in a wetland is beneficial to wildlife. i.e. when done in a low quality wetlands, such as one dominated by invasive species.
2. Deposition in a wetland is beneficial and creates diversity of wetland community complimenting the existing ecosystem.
3. The spoil will form an island isolated from upland to prevent intrusion by people.
4. Excavations should have undulating bottoms and sinuous shorelines.
5. Depths shall be no greater than 6.5 feet from the original soil surface.
6. Side slopes should be no steeper than 5:1, but 10:1 or greater is recommended
7. Spoil placement not permitted in exemption, shall not be placed within any other wetland.
8. Excavations for wildlife habitat improvement will be discouraged, or denied when the wetland is already considered high quality, or the following conditions exist:
    - Excavation in sedge meadow wetlands.
    - Excavation in forested wetlands.
    - Excavation in bogs.
    - Excavations in wetlands identified as Natural Heritage Communities by the Minnesota County Biological Survey.
    - Excavations in wetlands deemed natural community, supporting ecologically sensitive flora and fauna, based on field visit by the Soil and Water Conservation District.
    - The excavation will not provide diversity to the wetland basin or complex. (e.g. excavation in the fringe of a type 3, 4 5 wetland with standing open water throughout much of the growing season).
    - Wetlands which support a wide variety of plant species (i.e. approximately 50% of the area supports species which individually comprise <5% of the wetland).
    - Wetlands that score high on the MNRAM vegetative diversity criteria.
    - Excavations for the purpose of creating aesthetic reflecting pools.

Wildlife Habitat Exemptions are subject to approval by the ACD Board or the Technical Evaluation Panel.

Conservation Project Installation

ACD's program to assist with the cost of installing conservation practices to achieve the goals of the district consists of several funding sources, each with their own set of requirements. These funding sources change from year to year and so detailed procedures and policies are not included in this document. There are, however, some general policies that ACD has adopted to facilitate program administration and improve program outcomes.

- The ACD board may act to obligate funds toward a project without fully encumbering those funds within a contract. This serves to reserve funds for projects while other elements of project planning, design and coordination can be finalized.
- On a case by case basis, landowners/project sponsors/applicants may be required to provide an escrow in the amount of anticipated design and engineering costs. If

the project construction bids come in within 10% of the engineer's estimate and the applicant does not move forward with project installation, the escrow may be used to reimburse ACD for the cost of the design. If the applicant moves forward with construction, these funds shall be applied toward construction costs.

- 100% of project costs may be paid for with public funds provided the project cooperator is not substantially at fault for creation of the problem. Curb cut rain gardens that treat water from much of the neighborhood but very little of the cooperator's property is an example.
- Investment of public funds into a project will be considered in terms of the benefits received by the public. ACD will consider all public funds going toward a project when determining if the project is worthwhile on a cost-benefit basis, not just those funds invested by or through ACD.
- Cost-benefit analysis will be conducted with consideration of all benefits and costs over the life the project.
- Public benefits for projects will be measured in terms of the actual benefits to the target receiving water body, not the capacity of a practice to treat water.
- Cost share rate maximums will be the same as those prescribed by the funding source.
- The value of in-kind services/equipment/materials provided by landowners/project sponsors will be based on State approved prevailing wage guidance for services, documented market rates for rental equipment, or documented actual cost/value for materials.
- Specialist level staff shall oversee project installation and maintenance. Specialist level staff have not less than a four year degree and three years' experience in natural resource management or related field along with substantial on-the-job training and professional development training.
- The NRCS Field Office Technical Guide or other standard generally accepted by the engineering profession will be used for project design, construction, operations and maintenance.
- Cost share payments are not to exceed the cost of installation.
- Performance based cost share approaches are encouraged.
- Cost share contract non-compliance will be reviewed by the operations committee with a recommendation to the full board. The committee shall seek input from staff from the agencies that provided funding. The primary goal will be to maintain/restore the project benefits. Failing that, a pro-rata refund of cost share funds will be sought based on the benefits received compared to the anticipated benefits over the planned life of the project.

Performance Based Cost Share

Performance based cost share is an approach by which public investment into projects is measured by the amount of benefit that results from the project. Funds received by a landowner/project sponsor/applicant are independent of the installation cost of the project but rather are based solely on how much benefit is received. Predetermined rates are developed for benefits over a specific time period. The rates may vary by geographic area, target water body or target benefit. Payments to landowners/project sponsors/applicants are not to exceed the cost of installation however.

Nature and Extent of High Priority Problems

Conservation project installation assistance programs are divided into two general categories: agricultural and urban.

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/acre/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.” Areas meeting this description are all located in the northwest part of Anoka County. Wind erosion is also a problem that is accounted for in this analysis.

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

Maintaining and improving soil health in agricultural areas is a focus of the Natural Resources Conservation Service. The basic approach is to maintain vegetative cover all of the time, keep living plants on the landscape for as long as possible, allow a diversity of vegetation to grow, increase organic matter, and minimize soil disturbance. Management efforts that achieve these tenets will result in healthy, more productive soils that are less prone to soil loss through wind and water erosion.

Practices being used to control water erosion are: cover crops, 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.

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 and streambank erosion have accelerated due to the practice of

maintaining a manicured lawn to the water's edge and wave action from recreational water uses. 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 organic matter, fertilizers, pesticides, chemicals, solvents, road salt, and other contaminants to open water resources. Any voluntary structural, grading or vegetative practice that has the potential to improve and protect water quality, recharge groundwater, or reduce flooding in high priority areas is a potential candidate for cost share. ACD may provide technical, but not financial, assistance toward meeting mandatory outcomes. Financial assistance is limited to supporting voluntary practices.

Some of these issues are addressed by municipalities through legal requirements, such as the Municipal Separate Storm Sewer System program (MS4). Stormwater discharges associated with MS4s are subject to regulation under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS). Through the MS4 General Permit, the system owner or operator is required to develop a stormwater pollution prevention program (SWPPP) that incorporates best management practices (BMPs) applicable to their MS4. With the exception of Linwood Township and the cities of Bethel, Columbus and St. Francis, all Anoka County municipalities are MS4s.

Urban Conservation Measures Needed

The following conservation practices may be implemented to address high priority erosion, sedimentation, and water quality problems in Anoka County. Innovative methods are encouraged. In addition to the following it is critical to regularly inspect practices and enforce existing requirements.

1. Temporary construction site erosion and sediment control practices (mulching, silt fences, etc)
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, pond outlet modifications, and pond maintenance)
6. Model ordinances addressing erosion control, stormwater management, wetland management, groundwater protection, soil health, and protecting our ecological heritage.
7. Reduction of sediment/chemical application to lawns and streets
8. Water conservation measures and stormwater infiltration to recharge groundwater
9. Curb cut rain gardens and other stormwater treatment retrofit practices

Project Priorities

ACD and its partners are continuously working to identify the most cost-effective opportunities to improve water quality, reduce discharge to the stormwater conveyance system, recharge groundwater, and improve habitat. Methods used each year to identify worthwhile projects include, but are not limited to, lake shore and riverbank inventories, subwatershed stormwater retrofit analyses, site consultations and designs, TMDL implementation planning, water resource investigations, and open space planning.

The following is a list of work products that are completed, underway or planned wherein multiple projects have been identified. All of these work products are for resources of high priority and as such, all projects identified therein are considered high priorities for installation. The most cost-effective projects should be pursued first however.

Lakeshore and Riverbank Inventories

- Lake George
- Martin Lake
- Crooked Lake
- Ham Lake
- Coon Lake
- Linwood Lake
- Fawn Lake
- Typo Lake
- East Twin Lake
- Rum River
- Mississippi River (Coon Rapids Dam Pool)

Subwatershed Stormwater Retrofit Analyses

- Rice Lake
- Sand Creek
- Woodcrest Creek
- Lower Coon Creek
- Martin Lake
- Golden Lake
- Oak Glen Creek
- Coon Lake
- Moore Lake
- Middle Coon Creek
- Springbrook
- Stonybrook
- Pleasure Creek
- South Columbia Heights/ North Minneapolis

Site Consultations and Designs

- Oak Glen Creek stabilization project

TMDL/WRAPS Reports and Implementation Plans

- Golden Lake TMDL
- Martin and Typo Lakes TMDL
- Peltier and Centerville Lakes TMDL
- Lake Pepin TMDL
- Hardwood Creek TMDL
- South Metro Mississippi River TMDL
- Sunrise River WRAPS
- Rum River WRAPS
- Coon Creek WRAPS

Water Resource Investigations

- Crooked Lake Management Plan
- Northeast Metro Groundwater Management Strategy

Open Space Planning

- Anoka Nature Preserve Management Plan
- Melanie Kern Easement Management Plan
- Herb Beach Easement Management Plan

Top Projects

With the exception of the Rum River Retrofits project, all projects identified as retrofits have been noted in a Stormwater Retrofit Analysis (SRA) posted to the reports section of AnokaSWCD.org. The budget estimates provided in the original SRAs have been adjusted in the following table to better reflect cost experience as of the preparation of this plan.

Table 10: Top Projects

Project	Description	Budget	Partners
Ditch 20 Wetland Restoration Feasibility	Determine the feasibility of implementing a wetland hydrologic restoration project to improve water quality downstream	$100,000	Sunrise River WMO, State of MN
Lake George Diagnostic	Complete a lakeshed diagnostic study to determine the cause of recent downward trends in water quality	$100,000	Lake George LID, Upper Rum River WMO, State of MN
Rum River Bank Stability Inventory	Inventory riverbank stability along the Rum River to identify potential erosion remediation projects	$75,000	Upper and Lower Rum River WMOs, Isanti County, Mille Lacs County, State of MN

Project	Description	Budget	Partners
Mississippi River Bank Stabilization	Provide cost share funding to stabilize active erosion of Mississippi River banks	$1,000,000	Landowners, Lower Rum River WMO, Coon Creek WD, Mississippi WMO, State of MN
Rum River Bank Stabilization	Provide cost share funding to stabilize active erosion of Rum River banks	$1,000,000	Landowners, Upper and Lower Rum River WMOs, Isanti County, Mille Lacs County, State of MN
Ditch 20 Wetland Restoration	Restore hydrology to a large wetland complex upstream of Typo Lake to reduce dissolved phosphorus loads to the Typo-Martin chain of lakes and the St. Croix River	$450,000	Sunrise River WMO, Isanti County and SWCD, State of MN
Linwood Lakeshore Restoration	Provide cost share funding to stabilize active erosion of Linwood Lake shoreland	$250,000	Landowners, Sunrise River WMO, State of MN
Rum River WRAP Retrofits	Install projects identified in the Rum River WRAPS	$600,000	Landowners, Upper and Lower Rum River WMOs, Isanti County, Mille Lacs County, State of MN
Groundwater Conservation Initiative	Develop groundwater conservation education, outreach and cost share initiative	$150,000	Municipalities, local and state water management entities, SWCDs, State of MN.
Rice Lake Retrofits	Install RL-6 rain gardens and Centennial High School retrofits	$300,000	Rice Creek Watershed District, Cities of Lino Lakes and Blaine, State of MN
Sand Creek Retrofits	Install SC-4 rain gardens	$75,000	Coon Creek Watershed District, Cities of Blaine and Coon Rapids, State of MN
Woodcrest Retrofits	Install WC-4 and WC-7 rain gardens	$100,000	Coon Creek Watershed District, Cities of Blaine and Coon Rapids, State of MN
Lower Coon Creek Retrofits	Install LCC-25 & LCC-12 ponds, LCC-13 rain gardens and infiltration area	$550,000	Coon Creek Watershed District, City of Coon Rapids, State of MN
Golden Lake Retrofits	Install GL-4 rain gardens and pond	$233,000	Rice Creek Watershed District, Cities of Blaine, Circle Pines and Lexington, State of MN

Project	Description	Budget	Partners
Oak Glen Creek Retrofits	Install OGC-3 rain gardens	$110,000	Coon Creek Watershed District, City of Fridley, State of MN
Moore Lake Retrofits	Install rain gardens	$200,000	Rice Creek Watershed District, City of Fridley, State of MN
Springbrook Retrofits	Install IESF benches and rain gardens downstream of nature center	$400,000	Coon Creek Watershed District, Cities of Blaine, Coon Rapids, Spring Lake Park and Fridley, State of MN
Stonybrook Retrofits	Install large infiltration basins, rain garden network, ST-4 pond	$340,000	Coon Creek Watershed District, Cities of Blaine and Coon Rapids, State of MN
Pleasure Creek Retrofits	Install IESF benches and rain gardens downstream of RR tracks	$400,000	Coon Creek Watershed District, Cities of Blaine and Coon Rapids, State of MN

Future Strategies and Programs

The ACD reserves the right to identify programs to pursue during the annual planning process. The Comprehensive Plan outlines resource priorities and programs without commitment to specific years. Because ACD's budget is subject to the control of outside agencies, it is not possible to predetermine a specific time line for tasks. To accommodate grant application requirements, ACD has added a project priorities list to this plan that will be updated as needed.

The ACD Board of Supervisors has identified five major issues to address in Anoka County in the coming years: water quality, water quantity, natural habitats, wetlands, and soils. There are several means of addressing a given issue. ACD has selected the following general mechanisms: monitor, inventory, analyze, plan, protect, assist, fund, administer, sell/rent, and educate.

Mechanism	Water Quality	Water Quantity	Natural Habitats	Wetlands	Soils
Monitor lakes, rivers, groundwater and precipitation utilizing staff and a volunteer network to:					
• maintain baseline data, establish trends and identify and diagnose the nature of problems in	✓	✓			
• water quality, water quantity, and biota	✓	✓			
• in high priority water resources.	✓	✓			
Inventory natural resources to ensure staff have updated information necessary to make sound resource management decisions to improve water quality, reduce flooding, preserve soil health, and enhance wildlife habitat. Routine inventory work is needed on:					
• the condition of riparian properties on priority lakes and rivers,	✓	✓	✓		✓
• aquatic and terrestrial invasive species			✓	✓	
• wetland restoration opportunities, and			✓	✓	
• wetland replacement sites under the WCA.			✓	✓	
Analyze properties to identify management approaches to optimize natural resource quality, quantity and distribution. Analyses vary in scale and scope and include:					
• water resource diagnostic studies and TMDLs/WRAPS typically on a watershed basis to determine the cause of water impairment on high priority water bodies,	✓	✓			

Mechanism	Water Quality	Water Quantity	Natural Habitats	Wetlands	Soils
• stormwater retrofit analyses typically in urbanized settings at the subwatershed or catchment scale that contribute untreated water to high priority water bodies, the purpose of which is to identify the most cost-effective practices to improve water quality and reduce flooding, and	✓	✓			
• development plat reviews to provide comments on all aspects of natural resource management including forestry, soil health, water quality management, erosion and sediment control, invasive species, wildlife habitat, groundwater conservation, and energy conservation; including the expansion of this service to municipalities not currently participating.	✓	✓	✓	✓	✓
Plan for the effective utilization of limited staff and financial resources of the district through the development of:					
• comprehensive plans every five years,	✓	✓	✓	✓	✓
• annual plans each year, and	✓	✓	✓	✓	✓
• mutually beneficial partnerships with other government entities and non-profit organizations.	✓	✓	✓	✓	✓
Plan for the long-term viability of the natural resource base of Anoka County by:					
• identifying and prioritizing natural resource issues and trends in ACD's comprehensive and annual planning processes,	✓	✓	✓	✓	✓
• reviewing and commenting on city and water management comprehensive plans,	✓	✓		✓	
• providing leadership to establish and implement a greenway network plan that focuses on the protection of remaining natural communities and interconnecting expansive habitat areas,			✓	✓	
• updating the wildlife corridors plan with input from stakeholders,			✓		
• participating in aquatic invasive species management in partnership with the MN DNR and Anoka County Parks Department,		✓	✓		
• encouraging conservation design development where feasible to establish and maintain the greenway network and to protect high quality ecosystems,			✓	✓	
• positioning ACD to be a capable and prepared partner to assist with the implementation of the northeast metro groundwater management strategy,	✓	✓			
• developing and implementing a groundwater use audit program, and		✓			

Mechanism	Water Quality	Water Quantity	Natural Habitats	Wetlands	Soils
• encouraging infiltration of stormwater to maintain and restore surficial groundwater aquifer levels, thereby also maintaining water levels of interconnected surface water resources.	✓	✓			
Protect high priorities parcels that contain rare and declining habitats, natural communities identified by the MN County Biological Survey, and/or are located in identified greenway networks by:					
• identifying opportunities for conservation development,	✓		✓	✓	
• connecting landowners with funding sources with targeted mailings and promotional efforts,	✓		✓	✓	
• acquisition of fee title and conservation easements, and	✓		✓	✓	
• ensuring there are local entities capable of accepting and managing fee titles and conservation easements.	✓		✓	✓	
Protect water quality in high priority water bodies by prioritizing monitoring, analysis, and technical and financial resources in a manner that achieves the most good for the most people on the highest priority resources.	✓				
Assist landowners and public entities to manage and enhance high priority natural resources by:					
• designing and coordinating installation of conservation practices and ecosystem restorations,	✓	✓	✓	✓	✓
• preparing conservation plans for agricultural operations in cooperation with USDA NRCS,	✓	✓	✓	✓	✓
• serving on TEPs, technical and citizens advisory committees,	✓	✓	✓	✓	✓
• enforcing the Wetland Conservation Act of 1991,	✓	✓	✓	✓	
• developing model ordinances for open space protection and groundwater conservation,	✓	✓	✓	✓	
• refining the development review process utilizing minimal impact development design standards, water quality modeling, and sketch plan phase involvement,	✓	✓	✓	✓	✓
• facilitating the treatment of invasive species, and			✓	✓	
• working with partners throughout the Rum River watershed to promote implementation of the WRAPS by increasing its visibility with decision makers and funding partners	✓	✓		✓	
Fund conservation practices installation and design engineering to address high priority problems in partnership with landowners and public entities by actively pursuing grant funds and developing local funding sources through product sales and establishment of soil and water conservation utility fees.	✓	✓	✓	✓	✓

Mechanism	Water Quality	Water Quantity	Natural Habitats	Wetlands	Soils
Fund water management activities and WCA administration through administration of the Natural Resources Block Grant.	✓	✓		✓	
Administer programs and grants in partnership with public entities to achieve efficiencies and leverage limited funding by:					
• preparing annual reports on behalf of water management organizations,	✓	✓		✓	
• hosting websites for several water management organizations,	✓	✓	✓	✓	✓
• applying for grants in partnership with other local governments, and	✓	✓	✓	✓	✓
• develop and continually update a county wide hydrology and water quality model when technological advancements make doing so feasible.	✓	✓	✓	✓	✓
Sell tree and shrub seedlings and native grass and forb seed at an annual sale for the purpose of habitat creation and restoration.	✓		✓	✓	✓
Rent equipment useful for the implementation of conservation practices.	✓		✓	✓	✓
Sell supplies at cost that are useful for the implementation of conservation practices.	✓		✓	✓	✓
Sell Rain Guardian pretreatment chambers to enhance the function of curb cut rain gardens and simplify long term maintenance for cooperators.	✓	✓			
Educate the public about natural resource topics dealing with priority issues through varied media types such as: • presentations and workshops, • brochures, • project profiles, • newspaper articles, • guidebooks, • displays, • videos, • websites, and • events.	✓	✓	✓	✓	✓
Educate local councils and commissions about storm water management, erosion control, soil health, groundwater management, water quality, and water quantity as it pertains to recommendations supplied as part of the plat review process.	✓	✓	✓		
Educate lake associations on lake management issues by undertaking cooperative programs to benefits lakes.	✓		✓		

Mechanism	Water Quality	Water Quantity	Natural Habitats	Wetlands	Soils
Educate public officials on high priority resource topics through appropriate venues (Day at Capitol, project profiles, meeting attendance, Anoka County Public Officials meeting participation, etc.).	✓	✓	✓	✓	✓
Educate landowners with heritage communities about land stewardship and the value of their resource by providing selected properties with a Homeowners Guide and promoting funding option available for permanent protection of their resources.			✓	✓	
Educate policy makers on the importance of water conservation and infiltration practices to avoid the long-term depletion of surficial aquifers and how to utilize the Anoka County Geologic Atlas.	✓	✓	✓	✓	

Programs and Workload

The District offers a number of programs related to our mission. We continually evaluate new programs and services to achieve our mission, pursuing those most beneficial given staff and funding limitations. The workload for each of the District's programs varies from year to year as does the funding available to implement them.

Each year the District projects staffing needs during the annual planning process. Below is the staffing projection from the 2014 annual plan.

Program	2014 FTEs	Objective Addressed
Monitor Lake & Stream Water Quality	.450	WQl
Monitor Stream Biology	.135	WQl, NH
Monitor Lake, Stream, Wetland and Groundwater Levels	.300	WQn
Monitor Precipitation	.016	WQl, WQn
Assess Subwatershed for Retrofits	.620	WQl, WQn, NH,
Planning Assistance for WMOs	.162	WQl, WQn, W
Protect Lands with Easements	.020	WQl, NH, W
Protect Lands with Ownership – Beach	.064	WQl, NH, W, S
Assist with Water Quality BMPs	.420	WQl, WQn, S
Assist with Habitat Improvement	.064	WQl, NH, W, S
Assist with Wetland Conservation Act	.600	WQl, WQn, NH, W
Assist with Conservation Easement Plans	.040	WQl, NH, W, S
Administer Project Cost Share (State CS, Clean Water Fund, WDs, WMOs)	.520	WQl, WQn, NH, W, S
Managerial Support (Isanti SWCD)	.500	WQl, WQn
Promote and Oversee BMP Installation (RCWD, CWF, SCS)	.720	WQl, WQn, NH, W, S
WCA Enforcement	.240	NH, W
Administer WMO Reporting & Websites	.048	WQl, WQn, W
Sale of Products (seedlings, pretreatment chambers, conservation supplies)	.400	WQl, WQn, NH, W, S
Rental of Conservation Equipment	.032	WQl, WQn, NH, W, S
Education – ACD Websites	.220	WQl, WQn, NH, W, S
Education – Brochures/Displays/Events	.048	WQl, WQn, NH, W, S
Education – Workshop/Presentation/Tour	.036	WQl, WQn, NH, W, S
General Admin/Vacation/Holiday	1.420	WQl, WQn, NH, W, S
General Planning	.165	WQl, WQn, NH, W, S
Program Promotion	.250	WQl, WQn, NH, W, S
Staff Training	.100	WQl, WQn, NH, W, S
Total Full Time Equivalents	7.590	

Objective Addressed: Water Quality (WQl), Water Quantity (WQn), Natural Habitats (NH), Wetlands (W), and Soils (S)

Staffing Requirements

The District employs eight to nine people with 7.25 full time equivalents (FTEs). Conservation Corps MN/Iowa has provided a seasonal apprentice who provides 450 hours per summer. Between ACD and CCMI staff, we have 1941 workdays in

administrative and technical support to contribute to District goals and objectives. District objectives typically require 2000+ workdays to complete. This is more than current and proposed staff can provide. Workload management requires that programs and services be prioritized, often favoring those that are self-funded.

ACD	Position
Chris Lord	District Manager (1 FTE)
Kathy Berkness	Office Administrator (1 FTE)
Jamie Schurbon	Water Resource Specialist (1 FTE)
Joan Spence	Wetland Specialist (1 FTE)
Mitch Haustein	Conservation Specialist (1 FTE)
Kris Guentzel	Water Resource Technician (1 FTE)
Andrew Dotseth	Water Resource Technician (1 FTE)
Kris Larson	Assistant Water Resource Technician (.25)

CCMI	Position
Seasonal	Asst. Conservation Technician (.2 FTE)
Seasonal	Asst. Conservation Technician (.2 FTE)

NRCS	Position (office in Elk River)
Mary Monte	District Conservationist
Miranda Wagner	Soil Conservation Technician

Partners

There are many entities that invest time and effort to manage natural resources in Anoka County. Effective resource management can only be achieved when these entities work together to share information and coordinate activities. ACD supervisors and staff are committed to interagency cooperation to enhance resource management outcomes. Following are some of our partners.

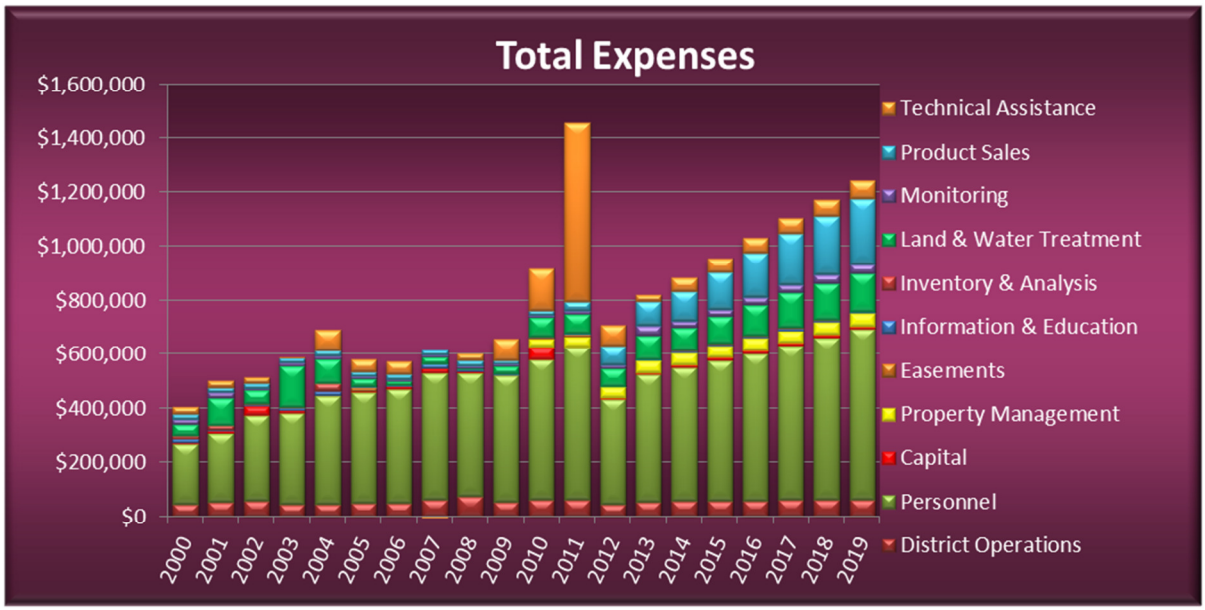
USDA Nat. Res. Conservation Serv.	Anoka County	Chambers of Commerce
US Army Corps of Engineers	Finances and Central Services	Municipalities
US Geologic Survey	Geographic Information Syst.	Non-Profit Groups
MN Dept. of Natural Resources	Risk Management	League of Women Voters
MN Geologic Survey	Surveyors	Coon Lake Improvement Dist.
MN Pollution Control Agency	Attorney's Office	Coon Lake Improvement Assoc.
MN Board of Water and Soil Resources	Parks and Recreation	Martin Lake Assoc.
MN Assoc. of SWCDs	Rice Creek Watershed District	Linwood Lake Assoc.
Metropolitan Council	Coon Creek Watershed District	Crooked Lake Assoc.
University of MN Extension	Sunrise River Water Mgmt Org.	Fawn Lake Assoc.
Schools	Mississippi River Water Mgmt Org	Lake George Improvement Assoc.
	Lower Rum River Water Mgmt Org.	
	Upper Rum River Water Mgmt Org	

Budget Needs and Projections

Expenses are reported according to program, whereas revenues are reported according to funding source. This approach is used in the day-to-day management of district finances as well. In order to calculate the full cost of programs including personnel and district operations, we maintain a program register that apportions all labor and overhead costs to programs based upon detailed hours logs and financial statements. Annual financial reports are posted to www.AnokaSWCD.org. Over the coming five years, continued success garnering Clean Water Fund grants is anticipated as well as increasing sales of Rain Guardian pretreatment chambers. Other general allocations, fees for service and related expenses are held relatively constant.

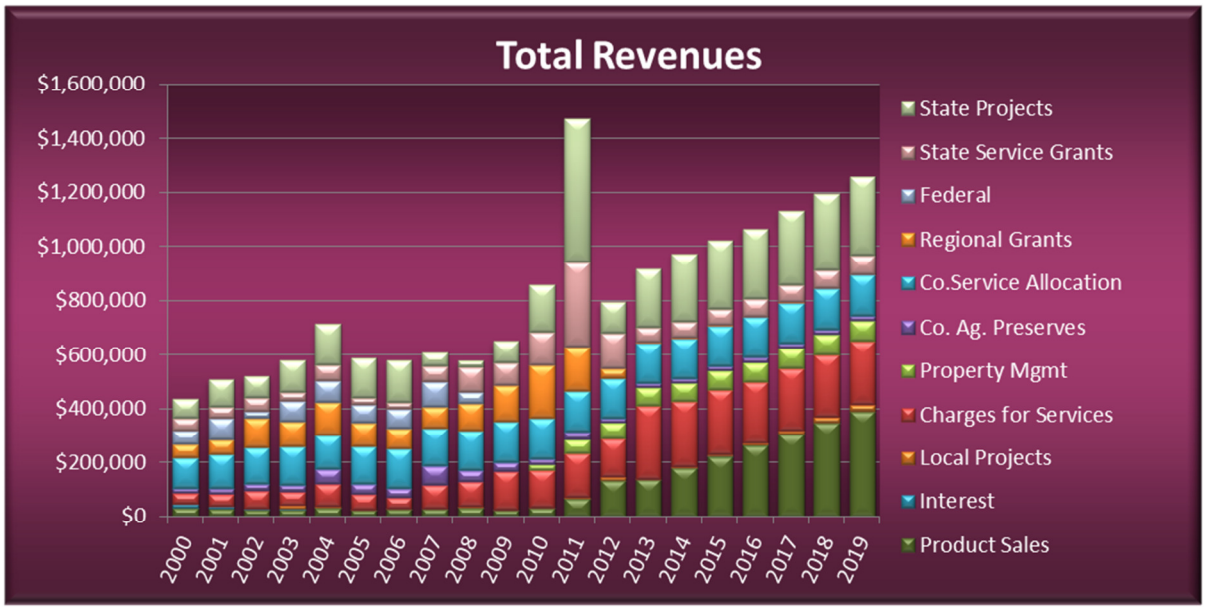
Expenses

Year	District Operations	Personnel	Capital	Property Management	Easements	Information & Education	Inventory & Analysis	Land & Water Treatment	Monitoring	Product Sales	Technical Assistance	Total
2000	47,601	221,887	6,163	-	-	12,529	9,968	42,966	18,782	18,345	27,981	406,222
2001	53,487	255,404	6,451	-	-	3,745	19,505	100,830	20,050	17,241	26,162	502,875
2002	59,127	315,714	34,757	-	-	2,758	5,928	50,247	4,849	17,630	21,834	512,844
2003	45,080	336,691	10,661	-	-	7,893	2,753	155,156	10,494	16,240	2,111	587,078
2004	46,753	398,512	2,235	-	-	14,038	30,132	91,095	9,787	21,191	78,389	692,132
2005	52,805	405,620	3,191	-	14,267	2,763	8	31,361	9,396	16,643	44,987	581,040
2006	50,569	420,445	10,832	-	-	3,885	172	14,759	6,540	17,654	48,464	573,321
2007	63,261	467,429	15,368	-	-	17,334	11	28,136	7,649	17,986	(7,455)	609,719
2008	76,001	456,290	4,822	-	-	4,546	-	5,867	8,386	19,918	25,243	601,073
2009	55,454	466,494	1,499	-	-	3,999	36	28,305	7,610	15,829	79,782	659,007
2010	64,703	518,354	45,341	27,548	3,748	3,925	859	74,150	6,768	18,549	154,128	918,074
2011	61,502	567,131	1,134	36,096	9,010	3,454	-	72,067	11,362	34,332	662,947	1,459,035
2012	45,592	389,191	5,043	38,925	53	3,128	-	65,764	13,022	69,558	77,755	708,032
2013	56,310	469,248	7,415	43,465	99	4,435	-	90,649	35,008	91,246	23,960	821,834
2014	57,718	492,711	11,065	43,500	150	6,317	4,955	85,000	22,000	111,600	50,000	885,015
2015	59,160	517,346	11,415	44,000	150	5,873	4,597	100,000	24,200	137,640	52,500	956,882
2016	60,639	543,214	11,770	45,000	150	6,025	3,532	115,000	26,620	163,680	55,125	1,030,755
2017	62,155	570,374	10,128	46,000	150	6,258	3,361	130,000	29,282	189,720	57,881	1,105,310
2018	63,709	598,893	10,090	47,000	150	6,141	3,404	135,000	32,210	215,760	60,775	1,173,133
2019	65,302	628,838	10,651	48,000	150	5,577	1,495	140,000	35,431	241,800	63,814	1,241,058



Revenues

Year	Product Sales	Interest	Local Projects	Charges for Services	Property Mgmt	Co. Ag. Preserves	Co.Service Allocation	Regional Grants	Federal	State Service Grants	State Projects	Total	Net Revenue
2000	31,490	14,296	-	38,946	-	17,680	114,640	49,310	51,832	48,057	69,778	421,731	15,509
2001	29,177	7,931	-	46,109	-	19,360	126,000	55,530	79,159	44,064	102,520	501,920	(955)
2002	25,644	1,889	-	66,504	-	25,621	137,500	106,966	25,258	51,421	78,907	517,821	4,976
2003	25,232	1,471	13,337	52,553	-	24,574	143,233	93,692	75,639	31,319	119,587	579,166	(7,912)
2004	30,518	435	4,000	83,490	-	56,415	125,000	125,020	78,111	60,533	151,842	714,930	22,798
2005	23,277	620	1,000	57,523	-	39,975	138,750	85,633	67,240	28,359	147,571	589,327	8,287
2006	26,351	843	571	42,857	-	34,842	144,000	76,358	74,115	25,000	156,090	580,183	6,862
2007	29,259	209	-	88,654	-	68,758	140,000	81,107	93,231	55,304	50,610	606,923	(2,795)
2008	30,581	2,680	1,091	95,522	-	42,026	145,600	102,456	42,648	93,032	23,267	576,222	(24,851)
2009	23,949	118	-	143,153	-	34,312	150,987	133,969	-	82,910	81,278	650,558	(8,449)
2010	31,203	571	-	140,311	20,696	20,185	153,600	195,370	-	124,212	172,201	857,778	(60,296)
2011	66,620	403	4,609	161,857	53,320	25,964	153,600	163,410	-	310,643	533,112	1,473,135	14,100
2012	133,855	417	13,511	140,868	60,012	15,504	148,992	34,929	-	132,291	115,091	795,052	87,020
2013	137,348	1,177	138	273,421	67,095	15,255	148,992	1,440	-	58,380	212,577	914,647	92,813
2014	180,000	1,200	2,000	243,000	70,000	16,086	148,992	1,440	-	60,000	250,000	971,518	86,503
2015	222,000	1,200	5,000	243,000	71,000	16,500	148,992	1,500	-	62,000	250,000	1,019,992	63,110
2016	264,000	1,200	7,000	229,000	72,000	17,000	150,000	1,500	-	64,000	260,000	1,064,500	33,745
2017	306,000	1,200	12,000	232,000	73,000	17,500	150,000	1,500	-	66,000	270,000	1,128,000	22,690
2018	348,000	1,200	20,000	232,000	74,000	18,000	150,000	1,500	-	68,000	280,000	1,191,500	18,367
2019	390,000	1,200	25,000	235,000	75,000	18,500	150,000	1,500	-	70,000	290,000	1,255,000	13,942



Appendix

Soil Survey of Anoka County, Mn USDA Sept. 1977

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	

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, Ponded
Dundas Loam	Markey Muck	Rondeau Muck
Glencoe Loam	Marsh	Seelyeville Muck
Isan Sandy Loam	Millerville Mucky Peat	Webster Loam
Isanti Fine Sandy Loam		

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	

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 soil association is a series of large level bogs and wetlands dominated by organic soils and small sandy island-like features that rise 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.

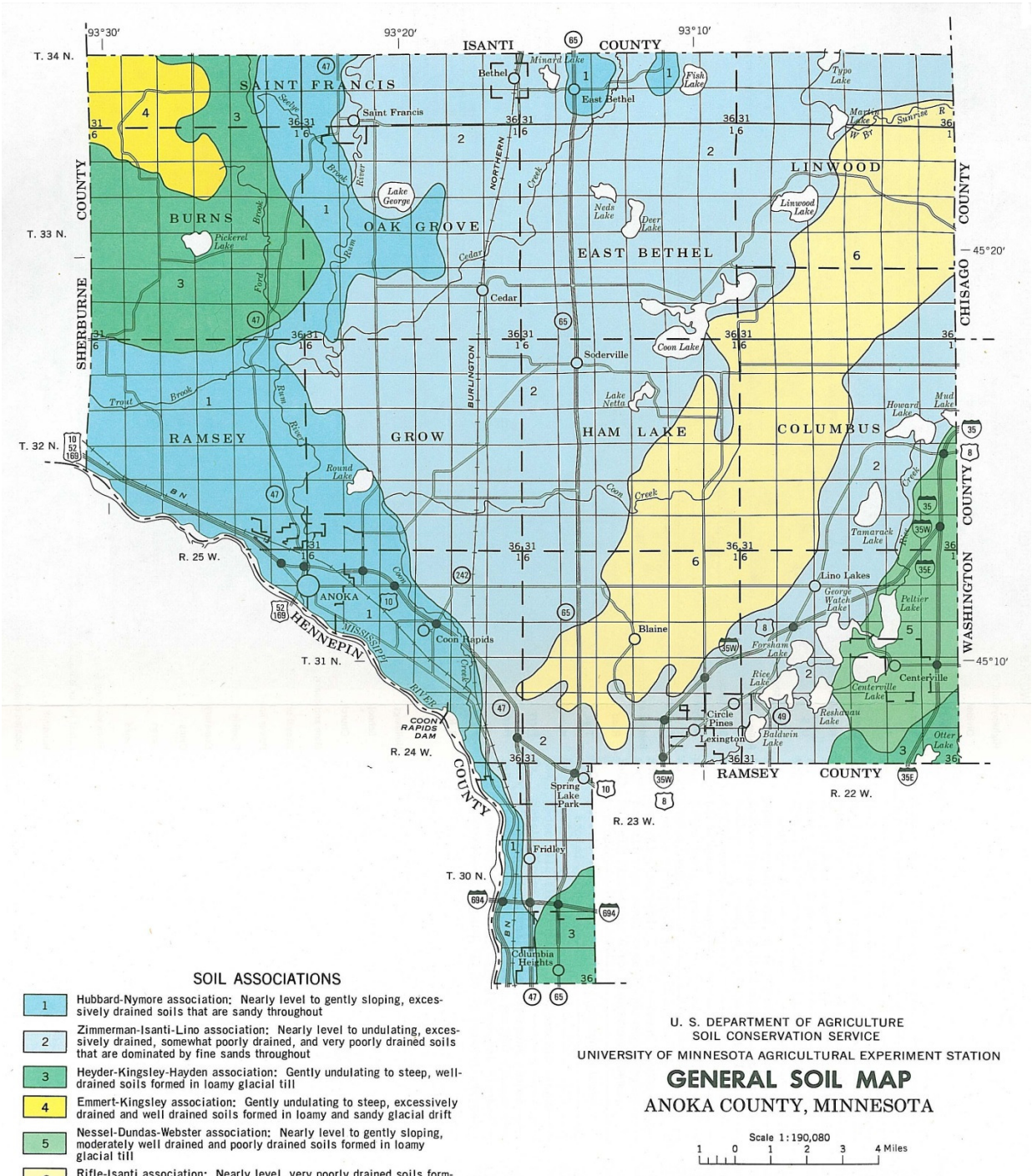
Nessel-Dundas-Webster Association

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



Stakeholder Draft Plan Comments and Responses

In response to distribution of a draft comprehensive plan, ACD received comments from four separate entities: the Board of Water and Soil Resources, The City of Blaine, the City of Ramsey, and the Rice Creek Watershed District. Following are formal responses.

BWSR:

Introduction:

Comment 1: Meets or exceeds requirements.

Soil Section:

Comment 2: Meets or exceeds requirements.

Soil and Water Conservation Problems:

Comment 3: Meets or exceeds requirements. Very good monitoring, resource inventories and stormwater retrofit analyses.

- Completion of trend analysis on monitoring results would be helpful.

Response: ACD staff monitor over 100 different sites with as many as 15 parameters at a single site. Providing trend analysis within this plan would be impractical given the number of sites and parameters. Each year ACD completes an extensive Water Resources Almanac (WRA), which is a comprehensive report including monitoring data for the current year, historic monitoring data, data interpretation, and suggested actions. The 2013 WRA alone is 284 pages in length. Almanacs since 2007 are posted to the AnokaSWCD.org website in the reports section and data are available through the online data access tool on the same website, which provides pre-formatted charts based on site and time specific queries.

Cost Share Program Requirements:

Comment 4: Meets or exceeds requirements.
Comment 5: Referenced prioritized project list not included.
Response: The reference has been removed and the list of work products and plans included in the "Project Priorities" section is intended to replace the prioritized project list.

Comment 6: This meets the comprehensive plan requirements however we suggest that the ACD consider including a capital improvement program type table that identifies in order, the top 10 to not more than 20 highest priority (from the ACD's regional perspective) projects for the ACD to pursue implementation during the next 5-years in addition to assisting other Anoka County LGU's. Leave out identifying an implementation year (due to lack of dependable funding), identify estimated project costs, anticipated partner, funding sources, a one sentence project description, and link to a document providing additional information on project. The ACD has completed or assisted with approximately 40 various studies, inventories, and plans that have each identified many projects prioritized within the context of the individual document. Having this knowledge and background puts the ACD in the best position to identify which individual projects are of the highest priority for the ACD to spend its limited funds to pursue implementation. Having this targeted, prioritized project implementation table in

the ACD's own state approved comprehensive plan would make for a stronger grant application for grants that the ACD is the actual applicant.
Response: With matching funds for projects, ACD is not in the position to pursue projects in addition to assisting other Anoka County LGU's. We are hopeful that this will change as national sales of the Rain Guardian pretreatment chamber increase. We have, however, added a top projects list that includes projects identified as important to our partners. Additionally, ACD works with our funding partners to develop annual plans of work based on our mutually identified priorities and pursues project funding accordingly.

Future Strategy

Comment 8: Meets requirements except as noted below.
Comment 9: Natural Resource Policies: Deviation from Natural Resource Policy or Rule: Having a policy to encourage applicants to not follow a State or Local rule, or ordinance is not acceptable. The Deviation Policy will need to be removed or revised for the comprehensive plan to be approved by BWSR. *We understand the concern for "Untended Consequences". If the ACD considers this an important policy to state in the Comprehensive Plan then it should be revised. For example every rule or ordinance has a variance process; the policy could be to encourage applicants to seek variances to rules or ordinances where they would benefit the protection of natural resources. A related policy could be to encourage rule makers to adopt performance standards into rules to help avoid unintended consequences, and allow for reasonable flexibility to design solutions for protecting natural resources to be built into the rule or ordinance.*
Response: The policy is important to ACD and has been modified per the verbiage provided.

City of Blaine:

After review of the ACD draft Comprehensive Plan, the City of Blaine has a few comments/suggestions to offer. These are listed by page number of the draft plan.

Comment 1: Page 6, Emerging Issues: statement on Climate Change is very well phrased.

Comment 2: Page 8, Resource Priorities and Goals: water conservation should be added as an important goal/priority.
Response: Water conservation is a strategy to achieve the goals of stopping aquifer depletion, noted under the Water Quantity priority. Groundwater conservation is noted in several locations throughout the Future Strategies section under the Analyze, Plan, Assist, and Educate mechanisms and can be most readily found by looking for activities with a check mark in the Water Quantity column.

Comment 3: Page 9, Resource Management Collaboration: Table 3 (groundwater recharge) and Table 4 (WCA and wildlife corridors) - there is no mention of cities being consulted. If these topics are to be successful the cities need to be at the table from the beginning, not brought in later and told what they should be doing. Table 5 (stormwater and TMDL's) - this is where the cities have the experience. ACD is not an MS4 and does not have the depth of background on the issues. If they are to be relevant on these

two topics in particular they need to be collaborating with the cities. The agency has a track record of collaboration. However, the future plans should specifically reflect that relationship.
Response: Collaboration with city partners is a critical element of effective natural resources management. The tables representing larger jurisdictions don't list each city because the list would be exhaustive. Alternatively, cities are inferred by the use of the phrase "Land Use Authorities" under groundwater recharge and for wildlife corridors. For WCA, "LGUs" are listed. In Table 5 "Municipalities throughout the watershed" were listed under Rum River but inadvertently omitted from St. Croix and Mississippi Metro. This has been corrected.

Comment 4: Page 11 - How current is the MLCCS data shown on the map? If this is to be used as a guide in planning/decision making it needs to be up to date and accurate.
Response: Completion of this inventory spanned many years and was completed in 2008 at a cost of over $100,000. No funding has been made available to update it. The accuracy of the data varies throughout the county depending on the timing of the original inventory and the level of land cover alteration that has since occurred. ACD staff update the data for watershed or site level analysis as the need arises.

Comment 5: Page 14 - Laddie Lake is missing from the list of lakes
Response: Laddie Lake is listed in the current version.

Comment 6: Page 16 Groundwater - the correct reference is the Anoka County Municipal Wellhead Protection Group (last sentence, second paragraph)
Response: Corrected.

Comment 7: Page 17 Water Quantity - the data from Met Council has been challenged in the past and they admitted it was not complete. Assumptions are from models that are based on a small data set. More observation wells are needed to collect sufficient data to make the broad generalizations regarding the water supply. Current efforts by DNR and Met Council will provide more accurate data for the forecast of future groundwater supply. Until then, the older data should be qualified so as not to present over stated assumptions.
Response: There is consensus among natural resource management agencies, including ACD, that groundwater sustainability is an important issue. In our plan, Metropolitan Council model results are being used to substantiate our concern for this issue with the best available data. Revised model results will be included in our planning as they become available.

Comment 8: Page 33, Figure 22 should include the iron enhanced sand filter in Blaine
Response: Figure 22 is intended to show completed conservation projects. The title has been modified accordingly. As projects like the Blaine IESF are completed, the figure will be updated.

High Priority Problems

Comment 9: Page 49, Urban Conservation Measures Needed - the statement "may be necessary" is a little misleading. Most of these items are already in practice or required by existing regulations, such as the MS4 permit. They have been high priority problems for cities for the past 10 years or more.
Response: Text will be modified to recognized MS4 and similar efforts.

Comment 10: Pages 48-49 Urban Problems - the wording of this section should be stronger. These are not new issues but are important environmental issues that municipalities have been faced with and are under legally enforceable requirements to deal with. Perhaps the emphasis needs to be from that perspective and that these are topics the ACD should prioritize to be relevant in assisting the cities in Anoka County; with items that have significant commitments of time and money devoted for regulatory compliance.
Response: Text will be modified to recognize cities' work on these issues and clarify ACD's commitment to providing technical assistance to cities with meeting regulatory requirements. However, ACD's financial assistance is used strictly to encourage voluntary practices that would not otherwise be implemented.

Comment 11: Page 52, Fund Strategies and Programs - strongly suggest that Water Conservation be included as a priority program and strategy with adequate funding. This program will provide an essential benefit to cities in meeting MS4 requirements as well as the emerging groundwater/water supply issues.
Response: See response to Comment 2 above. We have sought funding for water conservation initiatives but until the state has a clearer direction on what to do and how to do it, I don't think they will be awarding grants. ACD is committed to being poised to act in partnership with stakeholders throughout the county when funding becomes available.

City of Ramsey:

Comment 1: The City of Ramsey is pleased to see recognition of the emerging issues noted in the plan, especially those regarding groundwater supply, declining pollinator populations, invasive species, and habitat fragmentation. As both residential and commercial activity begins to grow again, these issues likely will be exacerbated and all can have a detrimental impact on the public's welfare and quality of life.

Comment 2: Regarding the Resource Condition section, the City of Ramsey completed a Functional Assessment of Wetlands utilizing MnRAM 3.0 in 2007 as well as a Natural Resources Inventory (NRI) later that same year. We would be happy to provide access to both of these reports/databases if that would be of any benefit to your continued efforts of natural resource management. Both endeavors included ground-truthing of significant acreage within the city.
Response: We always appreciate receiving good natural resources data from our partners and will routinely refer to it to aid in natural resource management and interpretation.

Comment 3: Also within the Resource Condition section, under Water Quality, the Rum River and its tributaries, including Ford Brook, are identified as ACD's highest priority watershed. However, Ford Brook does not appear to have a designated water quality monitoring site, at least in 2013 (per Figure 15). The City of Ramsey would encourage installation or designation of a monitoring station somewhere along this brook.
Response: From 1996 to 2007 ACD conducted routine hydrology, water quality, and biology monitoring of several Rum River tributaries including Ford Brook, Trott Brook, Seelye Brook, and Cedar Creek in partnership with the WMOs. Budget constraints in the 2007 resulted in this monitoring being cut. It was resumed in 2011 but at a much lower frequency. All data are included in the Water Resources Almanac provided annually to the WMOs members. Almanacs since 2007 are also available at www.AnokaSWCD.org as well as charted data by query using the data access tool.

Comment 4: Under Water Quantity, still within the Resource Condition section, it appears that certain portions of Ramsey are identified to be greatly impacted by depleted surficial aquifers and potential shortages of drinking water by 2030 (Figure 8). This is of great concern to the City, both environmentally and economically. This drawdown could impact our lakes and wetlands similar to what has transpired with White Bear Lake. One potential option that should be explored is the reuse of grey water and harvesting rain water for both indoor and outdoor uses, which could lessen the demand on groundwater.
Response: Conservation entities at all levels of government are devising strategies to conserve our groundwater resources. Modification of the plumbing code is currently in discussion as one important element to allow for grey water reuse. Once that is done, cities and county codes will require updating. ACD is committed to providing assistance coordinating this and other groundwater conservation initiatives.

Comment 5: The City of Ramsey believes it is imperative to be kept informed regarding potential strategies being developed and/or under consideration by the Metropolitan Area Water Supply Advisory Committee (especially those focused on the northwest metro region, including Ramsey). It seems that with an ACD staff member appointed to this committee, regular updates to the municipalities can and should be provided. Moreover, the City of Ramsey desires assistance with proactively addressing groundwater supply issues with the MN DNR. Finally, the City also wants to clarify that any recommended actions as a result of this advisory committee would be voluntary (rather than mandates that are placed on local governments).
Response: ACD will begin providing cities with updates from the Metropolitan Area Water Supply Advisory Committee. These updates will be periodic and focus on items that are most likely to be of critical interest to cities, such as release of draft plans. Because short email updates cannot possibly encompass all possible issues, cities are strongly encouraged to participate in the Met Council's planning input workshops and related efforts.

Comment 6: Under Project Priorities, and more specifically the Lakeshore and Riverbank Inventories, we feel it would have been beneficial to extend the limit of the inventory of the Mississippi River shoreline to the western boundary of the county,

rather than terminating at Ramsey's eastern border. Should that inventory ever be updated, or if funding becomes available to extend the limits of that inventory, we would recommend that it be extended to the Anoka/Sherburne County border.
Response: We appreciate the City's interest in the inventory. The funder of that particular endeavor was only interested in acquiring an inventory of the shoreline condition in the pool area of the Coon Rapids Dam which coincidentally extends to the boundary between the cities of Anoka and Ramsey. We will encourage the Lower Rum River WMO to consider helping to fund an initiative to continue the inventory to the county boundary. The City of Ramsey's support of such an effort would be very helpful. The LRRWMO has funded similar inventory work on the Rum River in the past.

Comment 7: Under Future Strategies and Programs, the City of Ramsey would encourage the ACD to explore alternatives for waste water treatment that incorporate Best Management Practices (BMPs) to promote infiltration prior to discharging the remaining wastewater into the regional wastewater system. Note that this is not to be interpreted as the City desiring a local wastewater treatment plant, but rather to aid in groundwater recharge.
Response: Refer to response to Comment 4 above. In addition to waste water infiltration and/or reuse to recharge and conserve groundwater, many stormwater infiltration practices can be pursued to increase groundwater supplies. ACD proactively seeks out opportunities to achieve sustainability of surface and groundwater resources including but not limited to the use of infiltration BMPs like rain gardens, drainage ditch abandonment, irrigation efficiencies, stormwater reuse, and directing water from construction dewatering into basins where infiltration may occur.

Comment 8: Finally, we are very pleased to see the emphasis placed on education, not just of the general public, but also for local elected officials, advisory boards/commissions, as well as municipal staff. We would encourage the ACD to promote these educational efforts (and the various services that it offers) more with municipalities, so that we can take greater advantage of these opportunities.
Response: We will make a greater effort to promote our availability. ACD staff appreciate the opportunity to address our partners' elected and appointed officials as well as staff on natural resource management issues.

Rice Creek Watershed District:

Comment 1: Page 18: Water Quality section, Anoka county listed impaired waters are shown ***in*** Figure 3.
Response: Corrected.

Comment 2: Page 19: Figure 4 should include better labels of the watershed districts.
Response: This section is designed to describe natural resources as opposed to jurisdictional entities. As such, the purpose of Figure 4 is to illustrate the location of waterways, as opposed to water management entities. None of the WMOs or Watershed Districts are mentioned by name.

Comment 3: Page 19: Define WMA (Wildlife Management Area)
Response: Corrected

Comment 4: Page 20: Perhaps include a key defining the letter grade A-F in the table
Response: Added

Comment 5: Page 22: Provide a key or describe what the orange/yellow/green areas refer to in Figure 6.
Response: Added.

Comment 6: Page 27: Figure 15, 2013 Monitoring Sites legend includes more items than included on the map, specifically, watershed boundaries and lake water quality.
Response: Conversion to a PDF obscured those elements by adding a grey background. This will be reviewed during final editing.

Comment 7: Page 36: Project planning and design section, formatting issues from picture placement.
Response: Final page formatting was deferred until content edits are finalized.

Comment 8: Page 38: Campus Retrofit is underlined, whereas preceding headers are italicized.
Response: This is because the preceding italicized elements were under the Project Types section but Campus Retrofits is not. Campus Retrofits is included to highlight that we will complete analysis of larger sites, recommending a variety of water quality improvement practices.

Comment 9: Page 43: Last sentence of Homeowner's Guide, should not start with a #4, rather "four".
Response: Corrected.