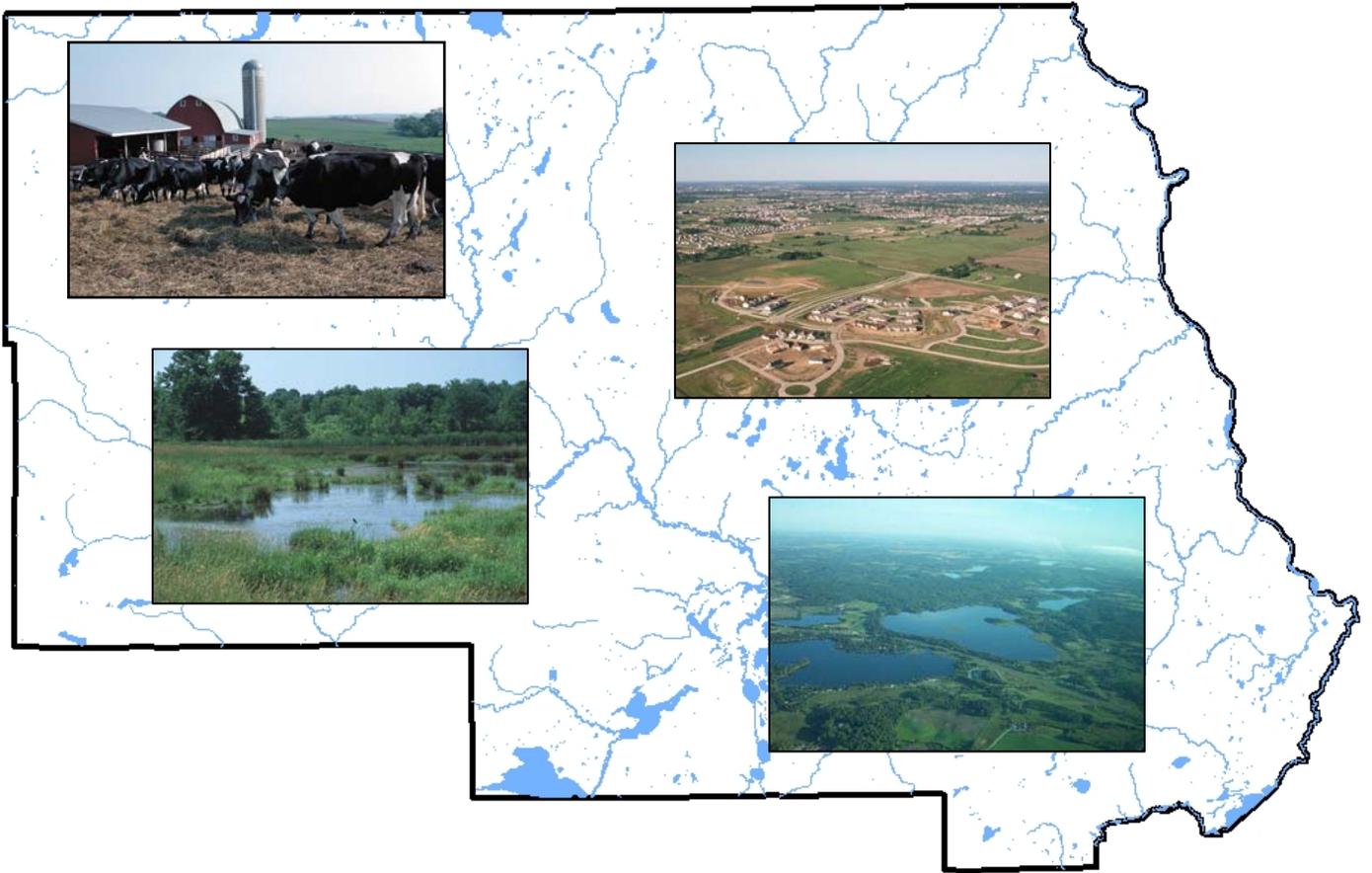


Stearns County

Local Water Management Plan



2008 - 2017

Acknowledgements

Stearns County would like to thank those who contributed their time and expertise to the development of this Water Management Plan. Their efforts are a reflection of the concern for the integrity of the County's natural resources that will make a realization of the goals of this Plan possible.

Water Management Plan Re-Write Committee

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The Plan is available on the Stearns County website <http://www.co.stearns.mn.us>

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ABBREVIATIONS

BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
CMBA	Central Minnesota Builders Association
CMWEA	Central Minnesota Water Education Alliance
CSP	Conservation Security Program
CRP	Conservation Reserve Program
CREP	Conservation Reserve Enhancement Program
DNR	Minnesota Department of Natural Resources
DWSMA	Drinking Water Supply Management Area
EQIP	Environmental Quality Incentives Program
ESD	Environmental Services Department, Stearns County
IBI	Index of Biological Integrity
ISTS	Individual Sewage Treatment System
LA	Lake Association
LIDAR	Light Detection and Ranging (a tool for mapping surface elevations)
LWM	Local Water Management
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MECA	Minnesota Erosion Control Association
Mg/L	Milligrams per liter
MN	Minnesota
MGS	Minnesota Geologic Survey
MPCA	Minnesota Pollution Control Agency
MRWA	Minnesota Rural Water Association
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PCB	Polychlorinated biphenyls
SCSU	St. Cloud State University
SRWD	Sauk River Watershed District
STORET	Storage and Retrieval (of Data)
SWCD	Soil and Water Conservation District
SWP	Source Water Protection
SWPA	Source Water Protection Area
SWPP	Source Water Protection Plan
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USGS	United States Geologic Survey
UMRSWPP	Upper Mississippi River Source Water Protection Project
VOC	Volatile Organic Compound
WD	Watershed District
WHP	Wellhead Protection
WHPA	Wellhead Protection Area
WMAC	Water Management Advisory Committee

EXECUTIVE SUMMARY

Background

Stearns County is located in central Minnesota, approximately 65 miles northwest of the Twin Cities. Stearns is the largest County by area in the southern half of the state. The total area of the County is 1,394 square miles, extending approximately 54 miles east to west and 36 miles north to south.

The population is concentrated on the east end of the County. The County seat is Saint Cloud; with a population of approximately 59,000 it is the largest city in the County. Saint Cloud is also at the center of one of Minnesota's fastest growing metropolitan areas. With a rapidly growing population on the east side of the County, a strong agricultural presence in the western two-thirds of the County and an abundance of lakes and rivers throughout the County, Stearns County is experiencing the struggle of accommodating growth, development and agriculture while protecting fragile water resources.

This is the fourth Local Water Management Plan in Stearns County. Through involvement with the Water Management Advisory Committee, local citizens, representatives from local organizations and agency staff have worked together to achieve efficient management and local ownership of water management initiatives.

The Stearns Water Management Advisory Committee is a twelve-member body that oversees the development and implementation of the Water Management Plan. The Committee is composed of twelve appointed citizens representing various sectors of the County community. There is a representative from township government, the Municipal League, farming, lake associations, education, local legislation/higher education, the Soil and Water Conservation District (SWCD) Board, County Board of Commissioners, County Planning Commission, a watershed district, the City of St. Cloud, and a concerned citizen. Technical staff from the SWCD, the Environmental Services Department, Minnesota Board of Water and Soil Resources, Minnesota Department of Natural Resources, Minnesota Department of Health, Minnesota Pollution Control Agency, Watershed Districts, Minnesota Rural Water Association, Minnesota Department of Agriculture and the Nature Conservancy also regularly attend and participate in the meetings.

Plan Purpose

The goal of this updated Local Water Management (LWM) Plan is to serve as a guide for resource protection and preservation in Stearns County for the next ten years. An assessment of the progress made toward the completion of goals will be done after the first five years and any necessary revision will be undertaken at that time.

The Stearns County LWM Plan is developed and written under the legislative authority of the “Comprehensive Local Water Management Act” (M.S. 103B.301-103B.355) and is meant to function as a long term planning document. The plan seeks to identify existing and potential problems and opportunities for protection and management of water and related land resources within the County. The following guidelines will be met in this document:

1. The plan must cover the entire county.
2. The plan must address problems in the context of watershed units and groundwater systems.
3. The plan must be based upon principles of sound hydrologic management of water, effective environmental protection and efficient management.
4. The plan must be consistent with local water management plans prepared by counties, watershed districts and watershed management organizations wholly or partially within a single watershed unit or groundwater system.
5. The plan must cover a five or ten year period.
6. The full implementation of this Plan is dependent on what is economically feasible.

The Stearns County Soil and Water Conservation District (SWCD) is an integral partner in the development and implementation of this Water Management Plan. This Plan is adopted by the SWCD as its Comprehensive Plan and assists the SWCD in prioritizing issues and focusing conservation program implementation to reach the goals identified in the Plan.

Description of Priority Concerns

With public participation and comment taken from written and online surveys and two public meetings, the citizens of Stearns County along with representatives from governmental agencies expressed their concerns on the water resources of the County. A complete description of this process can be found in the “Priority Concerns Scoping Document”, found in the Appendix. From this process, the following priority concerns were identified: Source Water Protection; Development Impacts; and Impaired Waters.

Source Water Protection

Providing safe drinking water to its citizens is a primary responsibility of government. Stearns County has a number of communities that are providing drinking water to the residents from vulnerable aquifers. The City of St. Cloud obtains its drinking water from the Mississippi River. The St. Cloud Source Water Protection – Priority A area (determined by an eight hour time-of-travel for water to reach the surface intake)

comprises about 89 square miles within Stearns County. The goal is to cooperate with and assist public water suppliers who are developing and implementing Source Water Protection Plans. The complete Goals, Objectives and Action Items are in the Implementation Program section of this Plan. The following is a partial list of the identified Action Items:

- Promote and participate in the education of the community about the importance of drinking water protection.
- Focus inspection and enforcement of feedlot and land application rules within shoreland and Drinking Water Supply Management Areas (DWSMA's).
- Explore development of planning and zoning tools, such as an overlay district, which promote proactive land use planning to protect drinking water supplies.
- Explore development of additional protective measures for aggregate mining in wellhead protection areas overlying geologically sensitive aquifers.
- Cooperate with cities to inventory Individual Sewage Treatment Systems (ISTS) located within vulnerable areas of the DWSMA and support innovative approaches towards inspection programs.
- Explore the possibility of supplemental incentive funding to existing programs for vegetative buffers, set aside programs and Best Management Practices (BMP's).

Potential Total Cost: 1,400,000

Development Impacts

Stearns County is experiencing strong residential and commercial development pressures. The construction of buildings, roads and parking lots increases the amount of impervious cover. The resulting increased stormwater runoff and erosion can cause a number of negative changes to stream flow, aquatic habitat and water quality. The goal is to minimize the impact of new development and redevelopment on surface and ground water resources. The complete Goals, Objectives and Action Items are in the Implementation Program section of this Plan. The following is a partial list of the identified Action Items:

- Encourage low impact development and better design strategies on all new and redevelopment projects.
- Promote land and water best management practices in shoreland, such as vegetative buffers and routing rainwater off roofs away from surface water.
- Seek to have a detailed Natural Resource Inventory completed for the purpose of identifying sensitive natural areas.
- Seek to require that any proposed project in shoreland that will increase the total suspended solids or total phosphorus loading will be required to establish a Best Management Practice to mitigate the increased loading
- Improve quality of stormwater runoff and manage flow, volume and direction.
- Improve coordination of the Water Management Plan with the National Pollutant Discharge Elimination System (NPDES) permit requirements of Stearns County and the Municipal Separate Storm Sewer System (MS4) communities within the county.

Potential Total Cost: \$1,390,000

Impaired Waters

Stearns County has a number of water resources that have been listed by the Minnesota Pollution Control Agency (MPCA) as impaired, which means that the water resource does not meet its designated use. The majority of the water resources in the County have not been monitored to MPCA standards to determine whether impairments exist. The goal is to determine the water quality status of the highest priority water resources in the County, protect those water resources that currently support their designated uses, and where needed, improve those that do not. The complete Goals, Objectives and Action Items are in the Implementation Program section of this Plan. The following is a partial list of the identified Action Items:

- Annually review the sampling data and determine continuing monitoring needs.
- Coordinate and implement monitoring and analysis.
- Provide assistance to County landowners implementing agricultural Best Management Practices on working lands to reduce soil erosion, protect stream banks and improve water resources.
- Educate landowners about proper land application of nutrients and pesticides.
- Develop/support workshops for volunteer monitors
- Establish and maintain vegetative buffers in the shore and bluff impact zones.

Potential Total Cost: \$9, 365, 000

Consistency with Other Plans

The development of this Water Management Plan entailed a review of the water and land resource plans that have been adopted by other entities acting within or adjacent to Stearns County. The Plans were reviewed to identify any conflicts with this Water Management Plan, to avoid duplication of efforts, to enable coordination toward common goals, and to identify gaps between existing regulatory controls.

One of the priority concerns of this Plan is Sourcewater Protection. The goals of the Wellhead Protection or Sourcewater Plans for every municipality were reviewed. Wherever it was feasible, the goals of the Wellhead Protection and Source Water Protection Plans were incorporated into this Plan.

The MPCA has completed the *Upper Mississippi River Basin Water Quality Plan, Headwaters to the Rum River-Anoka*. Many of the “top eight issues and needs in the basin” identified in the MPCA Plan have also been identified in this Water Management Plan as an issue. Stormwater management, additional monitoring, source water protection and improved feedlot management are identified in both plans as objectives. The MPCA plan indicates that the unique issues within the Sauk River-St. Cloud Area Watersheds Planning Unit are feedlot management and stormwater and sediment reduction. This Water Management Plan will serve to reinforce the goals of the MPCA *Upper Mississippi River Basin Water Quality Plan, Headwaters to the Rum River-Anoka*.

There are four watershed districts that are partly contained in the County. The focus of the *Clearwater River Watershed District Comprehensive Plan* is improvement of water quality, some of which has deteriorated due to eutrophication. The goals include Total Maximum Daily Load (TMDL) studies, control of soil erosion and management of feedlots. The major issues of the *Sauk River Watershed District Plan* include nutrient management, phosphorus reduction, sediment control, source water protection and development and implementation of TMDL studies. The *North Fork of the Crow River Watershed District Plan* is not contradictory to the goals of the County Water Management Plan. The Middle Fork of the Crow River Watershed District was formed in 2005. The prominent issues of the *Middle Fork of the Crow River Watershed District Watershed Management Plan* include agricultural drainage, erosion and sediment control, feedlot management, groundwater contamination, invasive aquatic species control, shoreland management, stormwater management and wellhead protection. There are no conflicts between the watershed district plans and the County Water Management Plan. Many of the goals of the watershed district plans coincide with the goals of this County Water Management Plan. Coordination between the watershed districts and the County will be needed to fulfill a number of the County Plan's goals and this has been reflected in the listing of partners for the action items.

Both the City of St. Cloud and the City of Sartell have enacted ordinances to protect environmentally sensitive areas. Both ordinances are based on detailed natural resource inventories and require development in environmentally sensitive areas to be subject to review by a team of environmental scientists. This will enhance the County's efforts to reduce the negative impacts of development.

The Water Management Plans of adjacent counties (Benton, Douglas, Kandiyohi, Morrison, Sherburne, Todd and Wright Counties) were reviewed. There are no conflicts or overlaps with the Stearns Water Management Plan.

Recommendations to Other Plans and Official Controls

The overall goal of the Minnesota Wetland Conservation Act is no net loss of wetland. This Act provides for an exemption to the requirement that impacted wetland be replaced if the landowner can show that the wetland was created solely by actions, the purpose of which was not to create the wetland. There is no time limit to this incidental exemption. It is recommended that the Wetland Conservation Act conform to the same guidelines as the U.S. Army Corps of Engineers uses. If a wetland has been in existence for five years, it is considered a protected wetland regardless of the means or purpose of creation.

The Minnesota Department of Natural Resources (DNR) oversees the Shoreland Management program, which establishes minimum land use standards in shoreland. Shallow lakes are particularly sensitive to the impacts of development. It is recommended that shallow lakes be given additional protection in the Shoreland Management program.

Stearns County and the Stearns SWCD have an agreement with the MPCA to participate in a pilot program from March, 2005 to November, 2007 in which local staff does the

inspection for the NPDES construction site permits. Given the number of NPDES construction site permits and the serious impacts that can occur if the permits are not followed, it is important that an assertive inspection and enforcement program is in effect. It is recommended that the MPCA continue to fund this program on an ongoing basis.

The federal Clean Water Act requires states to assess all waters of the state; conduct TMDL studies; and to implement corrective measures to meet a TMDL's pollutant reduction goals and restore waters to standards. The Minnesota Clean Water Legacy Act provides total funding for the TMDL process up to the point of implementation. The Clean Water Legacy Act provides for implementation costs through cost-sharing with the local entities. The implementation costs can be significant and may be unaffordable on even a cost-share basis for local entities. It is recommended that the entire TMDL process be funded through a statewide process which could be leveraged with federal funding.

The Stearns County feedlot program is a cooperative arrangement between the MPCA and County government to administer Minnesota's feedlot rule. It is recommended that the County continue with county delegation for the feedlot program.

Government funding should be available to facilitate permanent easement programs in the vulnerable areas of Drinking Water Supply Management Areas. These funding programs could be similar to the Reinvest in Minnesota or the Wetland Reserve Program.

PRIORITY CONCERNS

Through the Water Management Plan update process, three priority concerns were identified. The process that was used to solicit public input concerning the priority concerns is detailed in the Priority Concerns Scoping Document, which can be found in its entirety in the Appendix. The identified priority concerns are Source Water Protection, Development Impacts and Impaired Waters.

Assessment of Source Water Protection

The capacity to supply the public with clean, healthy drinking water is of the utmost importance to both the health of the populace and to the economic vitality of the County. The purpose of source water protection is to prevent contaminants from entering public drinking water sources. This is a far more economical and effective approach than treating already contaminated water. Source water protection was, therefore, selected as a priority concern of the Water Management Plan.

The Minnesota Department of Health's Source Water Protection Program includes Wellhead Protection (WHP) and the protection of surface water intakes.

Wellhead Protection Program

The Wellhead Protection Program is designed to protect public water supply wells. A capture zone for the well is designated and a plan is developed and implemented for managing potential contamination sources within the Drinking Water Supply Management Area (DWSMA). The DWSMA is the geographic area, including the Wellhead Protection Area (WHPA), which is to be protected and managed by the WHP plan. Water suppliers use geographic landmarks, such as roads and property lines, to map the boundaries of the area so that it is identifiable to the general public. Wellhead Protection is required by law, as stated in the Minnesota Groundwater Protection Act and the federal Safe Drinking Water Act.

Components of Wellhead Protection plans include:

- Inner well management zone inventories.
- Delineation of the wellhead protection area and drinking water supply management area.
- An assessment of the vulnerability of the well and the drinking water supply management area.
- An assessment of data elements that are applicable to the protection area.
- Identification of expected changes over the ten year plan period.
- An inventory of potential contamination sources and a summary of issues, problems and opportunities foreseen for the protection area.
- A plan to manage and monitor existing contamination sources.
- An evaluation of plan implementation activity.
- An emergency response plan.

Surface Water Intake Protection Program

Protection for surface water intakes is not required by law, but many of Minnesota's community water supply systems that use surface water, including the Cities of St. Cloud, St. Paul and Minneapolis, are voluntarily developing protection plans. The components of source water intake protection plans parallel very closely to what is done for wellhead protection plans.

Minnesota Department of Health Source Water Assessments

The 1996 amendments to the federal Safe Drinking Water Act require the Minnesota Department of Health (MDH) to produce Source Water Assessments for all Minnesota's public water systems. A Source Water Assessment is a document produced by MDH staff and intended to provide basic information to public water suppliers and the general public regarding: 1) where their drinking water comes from, and 2) the degree to which it may be impacted by potential sources of contamination.

Specifically, a Source Water Assessment includes the following:

- The status of a public water system's source water protection plan.
- A description of the water source(s) used by the public water system.
- A determination of the susceptibility of the water sources to contamination.
- A list of contaminants of concern for the water source(s) and potential contaminant sources that could impact the water supply.

The MDH has completed Source Water Assessments for all of the approximately 7,000 public water systems in the state. Each Assessment provides a concise summary of available information regarding the source(s) - such as a well, lake, or river - supplying a public water system. Two hundred and forty one Assessments were done in Stearns County. A list of all the Source Water Assessments completed in Stearns County and a link to the assessment document can be found on the MDH website <http://mdh-agua.health.state.mn.us/swa/pdwgetpws.cfm> Please note that these Assessments focus on the source of water, rather than the finished water supplied to customers at their taps. A public water system may treat the water to protect and improve its quality before it reaches the consumer. Source Water Assessments have been done for the public supply systems using both ground water and surface water.

Sensitivity of Stearns County Aquifers to Pollution

A considerable area of Stearns County contains aquifers that are sensitive to ground water pollution. The DNR has developed a "Sensitivity of Ground-Water Systems to Pollution" map for Stearns County, which gives a County-wide perspective to the sensitivity of ground water to pollution. The DNR defines a sensitive area as "a geographic area characterized by natural features where there is significant risk of ground-water degradation from activities conducted at or near the land surface". When developing the map, three geologic and hydrogeologic factors were considered: depth to

water table; surficial geology; and subsurface permeability to a depth of 50 feet below the land surface. The ground water systems are rated from very high sensitivity to low sensitivity to pollution. An area with very high sensitivity has estimated vertical travel time for water-borne contaminants to reach 50 feet below the surface in hours to months. An area with low sensitivity has estimated vertical travel time for the same water-borne contaminants to reach 50 feet below the surface in decades to a century or more. Figure 1 illustrates these sensitivity ratings.

In general, the aquifers most susceptible to contamination are the surficial sand and gravel aquifers which contain highly permeable soils overlying shallow aquifers. The other aquifers in Stearns County most susceptible to contamination are the bedrock aquifers which outcrop on the southwestern edge of St. Cloud and in Cold Spring. These aquifers are susceptible to contamination because they do not have a protective/confining layer above the water source and because the water source is relatively close to the ground surface.

The MDH developed a “Nitrate-Nitrogen Probability Map” for Stearns County, shown in Figure 2. This map identifies areas of the County with relatively high, moderate and low probability of having elevated nitrate concentration in groundwater drinking water supplies. The probability rating represents nitrogen input, aquifer sensitivity, and geochemical sensitivity. Sensitivity is defined as “the likelihood that an aquifer will be isolated from contaminants by the intrinsic physical attributes of the geologic setting or geomorphology. Geochemical sensitivity refers to the stability of nitrate in groundwater.” The MDH cautions that it is important to remember that drinking water without nitrates can also be found in areas labeled medium and high probability. Often good water quality can be found by using a deeper well. Elevated nitrogen may be the result of contamination of the aquifer or may be a result of localized well problems, such as surface water drainage into the well or a pollution source near the well, such as an old septic system. Localized well problems may occur anywhere and cannot be predicted through a probability map.

Ground Water Quality and Landuse

Effects of Land Use on Ground Water Quality, St. Cloud Area, Minnesota-Summary of Results from 1997 through 2000 details the results of a study conducted by the MPCA on ground water, beginning in the fall of 1996. The purpose was to assess the impacts of land use on ground water quality. A shallow sand and gravel aquifer, sensitive to changes in land use, underlies the study area. The project was conducted in a 30 square-mile area around St. Cloud and included 23 monitoring wells screened at the water table, 21 domestic wells screened at various depths in the aquifer, 2 surface water sampling locations, 4 continuous water level recorders in monitoring wells, 3 well nests, 2 surface water gauging stations, and a weather station. Quarterly sampling included major cations and anions, trace inorganics, volatile organic compounds, herbicides, field parameters, total and dissolved organic carbon, total dissolved and suspended solids, ammonia, organic nitrogen, and water level measurements.

Figure 1. Sensitivity of Ground-Water Systems to Pollution

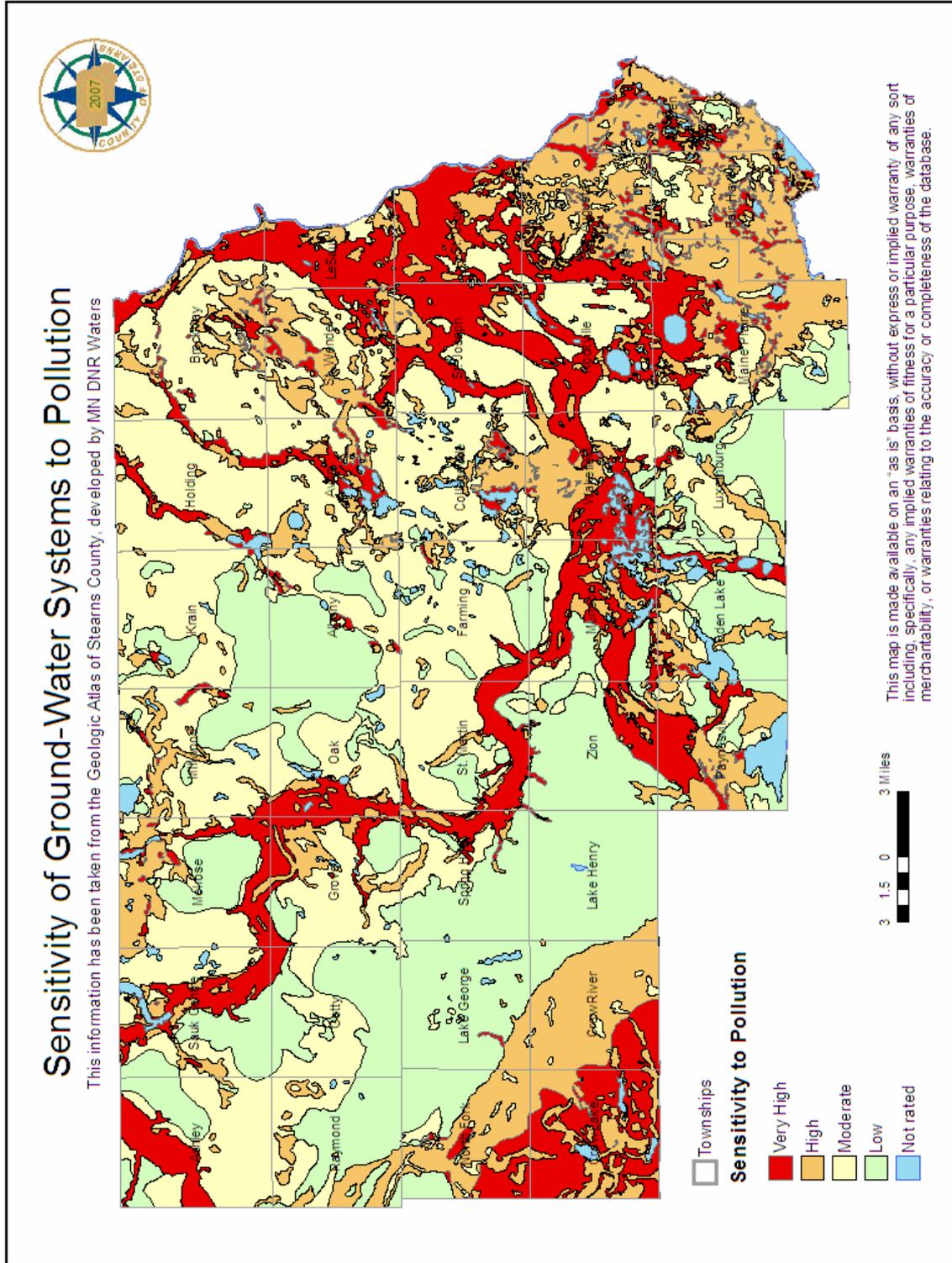
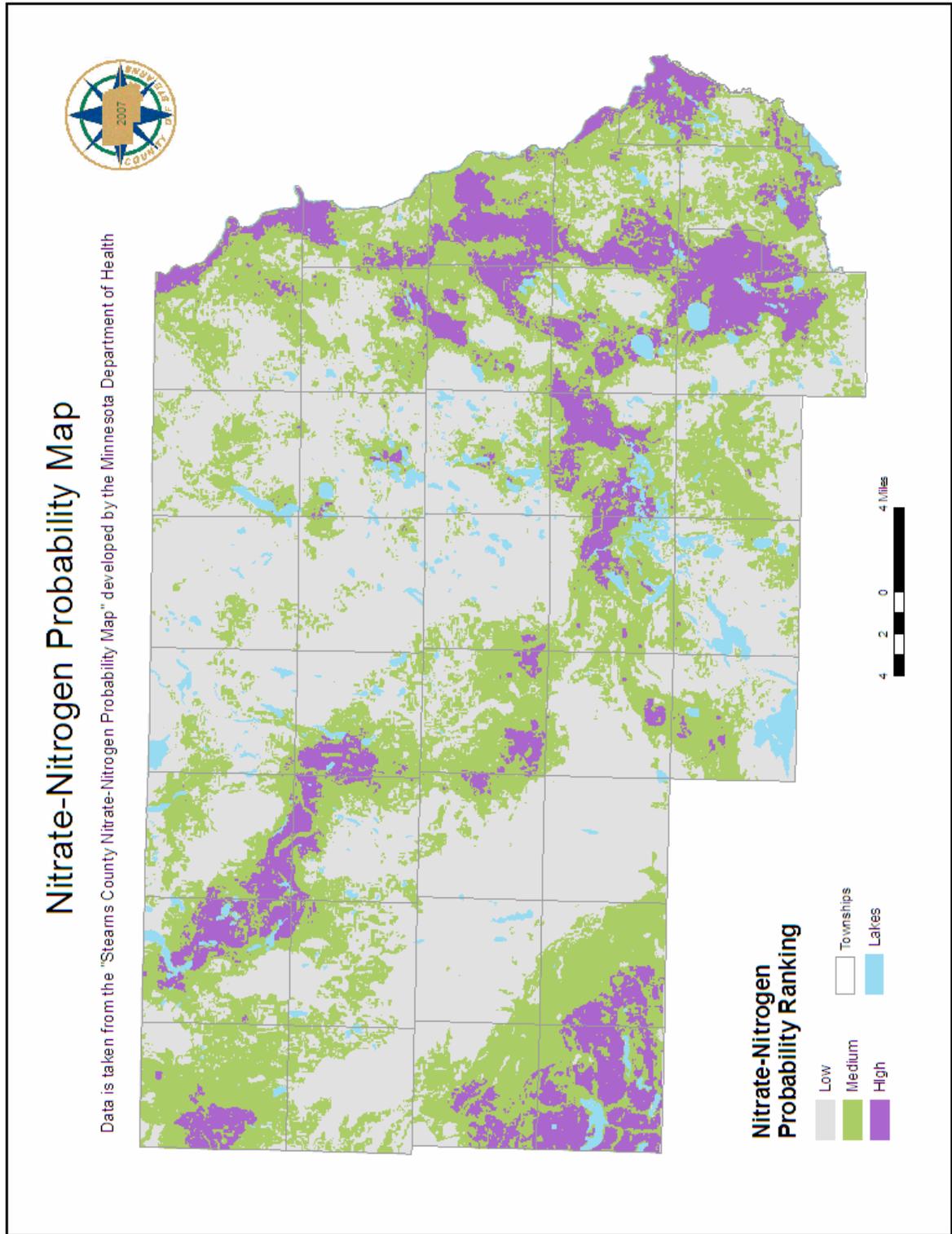


Figure 2. Nitrate-Nitrogen Probability Map



The study found a strong correlation between ground water quality and land use. Concentrations of most chemicals were lower under undeveloped land use compared to other land uses. Ground water under urban areas was characterized by high concentrations of dissolved solids, chloride, ammonia, and trace elements and low concentrations of nitrate and organic carbon compared to agricultural land use. Water quality under sewered and unsewered areas was similar, except that sewered areas had higher concentrations of ammonia, dissolved solids, sulfate, and organic carbon and significantly lower concentrations of nitrate. Concentrations of bicarbonate, chloride, nitrate, sulfate, and dissolved solids were higher under irrigated agriculture than under non-irrigated agriculture.

Differences were also observed in water quality associated with depth within the aquifer. Nitrate concentrations decreased rapidly with depth, and herbicides and volatile organic compounds were not found at deeper depths. Nitrate-reducing conditions occur deeper in the aquifer, resulting in high concentrations of iron and manganese and low concentrations of nitrate and dissolved oxygen compared to shallow ground water.

Potential Sources of Contaminants to Ground Water in Stearns County

Effects of Land Use on Ground Water Quality, St. Cloud Area, Minnesota-Summary of Results from 1997 through 2000 found that the primary chemicals of concern in shallow monitoring wells, from a human or environmental perspective, were nitrate-nitrogen, chloride, volatile organic compounds (VOC's), and herbicides. Nitrate concentrations exceeded the drinking water criteria of 10 mg/L in 38 of 41 samples under irrigated agriculture. The nitrate concentration under nonsewered residential land use exceeded the drinking water criteria in 9 of 37 samples. There were a total of 63 VOC's detected in commercial/industrial wells from 1997 to 2000, compared to 40 detections in transitional areas, 32 detections in sewered residential areas, and less than 5 detection in other land uses. Agricultural herbicides were widely detected in monitoring wells in agricultural areas, domestic wells in agricultural areas, and in surface water.

Nitrate (NO₃) is a naturally occurring chemical made of nitrogen and oxygen. Natural levels of nitrate in Minnesota groundwater are usually quite low (less than 1 mg/L of nitrate-nitrogen). Much of the nitrate in our environment comes from decomposition of plants and animal wastes. Where sources of nitrate such as fertilizers, animal wastes, or human sewage are concentrated near the ground surface, nitrate may seep down and contaminate the groundwater.

Aggregate mining in areas where the aquifer exhibits sensitive geologic conditions can pose potential health concerns. If there is no protective layer of fine-grained material such as shale or clay to prevent movement of contaminants to the aquifer, contamination of the aquifer and drinking water wells is a risk. The MDH's guidance document "Wellhead Protection Issues Related to Mining Activities" states that aggregate mining over a geologically sensitive aquifer may occur if care is used to ensure that 1) the mining operations; 2) management of the mining area; and 3) reclamation efforts do not present a serious risk to groundwater quality. The issues that the MDH advises should be

considered when conducting mining within vulnerable portions of a drinking water supply management area include the following:

- Fuel storage and refueling operations should not occur in areas where geologic cover has been removed and in mining areas unless conducted on an impervious pad with spill containment.
- A spill emergency response plan should be in place that identifies the details of how a response to a spill will be implemented.
- Equipment should not be stored or serviced in areas where protective cover has been removed or in mining areas to unless conducted on an impervious pad or similar surface.
- An asphalt batch plant should not be located within the vulnerable portions of a DWSMA unless located on an impervious pad with secondary containment.

Potential contaminants to ground water in Stearns County include:

- Nitrate-nitrogen at elevated levels
- Biological and microbiological organisms, such as fecal coliform
- Pesticides and their derivatives
- Volatile organic compounds

Sources of potential contaminants to ground water include:

- Improper manure management/storage sites
- Agricultural chemical and pesticide applicators
- Run-off from barnyards or feedlots
- Excessive use of fertilizers
- Septic systems
- Leaking underground storage tanks
- Hazardous waste clean-up sites
- Aggregate mining operations
- Home pesticide and fertilizer application
- Improper disposal of household hazardous waste
- Unused or abandoned wells

Wellhead Protection in Stearns County

The MDH has identified wells that should receive priority for wellhead protection efforts. The MDH uses a vulnerability rating method in which points are assigned for conditions that represent a perceived risk to a well. The vulnerability assessments must address three components: 1) geologic sensitivity, 2) well construction, maintenance, and use, and 3) water chemistry and isotopic composition (age dating). Supply wells classified as “non-vulnerable” are required to manage contaminant risks that may enter the aquifer through other wells. Wells classified as “moderately vulnerable” must manage point source contaminant risks through other wells along with identifying underground hazardous chemical storage tanks. Wells classified “vulnerable” or “highly vulnerable” must manage all point source contamination risks and address land use activities that

threaten the aquifer. Figure 3 illustrates the vulnerability assessments of the wells in the county that have developed Wellhead Protection Plans.

Many public water suppliers in the County have not begun to develop a Wellhead Protection plan. The MDH has established a priority list for all the public water suppliers in Stearns County, indicating the order in which the MDH will work with the public water supplier to develop a Wellhead Protection plan. This “phasing list” can be found on the MDH website <http://www.health.state.mn.us/divs/eh/water/swp/whp/phasing/index.htm>

Public water suppliers with the highest numbers will be approached first. This list is based on water chemistry data and well construction data.

A number of communities in Stearns County have approved Wellhead Protection plans and are in the implementation phase of their Plans. The communities have had varying levels of success in implementing the action items of their plans. The communities with Wellhead Protection plans are Cold Spring (includes partners Gluek Brewery, Alano Society, Gold’n Plump, Cold Spring Granite), Greenwald (St Andrew’s Catholic Church and School), Meire Grove (Oak Grove Senior Living and St. John’s Catholic Church and School), Melrose, New Munich, Paynesville, Richmond, Rockville, Sartell, Sauk Centre, Viking Industries and Waite Park.

The community wells in Stearns County that will be coming into the Wellhead Protection program within the next five years include the Cities of Holdingford, St. Martin, Eden Valley, Rockville, Kimball and St. Joseph, St. John’s University and the College of St. Benedict.

Many of the DWSMA’s have more than one vulnerability rating within the DWSMA. The DWSMA’s of the Cities of Melrose and Waite Park contain areas of very high vulnerability to contaminants. Sauk Centre, New Munich, Sartell, Cold Spring, Rockville, Richmond and Paynesville have areas of high vulnerability to contaminants. The DWSMA’s of Meire Grove, Greenwald and Viking Industries are of moderate vulnerability.

The City of Cold Spring has had issues with elevated nitrate-nitrogen in its City wells and is blending the water from a number of wells to keep the nitrate-nitrogen below the drinking water standard of 10 mg/L. The City of Paynesville has detected petroleum products in a municipal well and no longer uses the well due to the contamination. The source of the detection is a leaking tank from an abandoned gas station. The City of Waite Park has detected volatile organic compounds in its city well water and is treating the water.

Protection of Surface Water Intake in St. Cloud

The Cities of St. Cloud, Minneapolis and St. Paul obtain the bulk of their public water supply from the Mississippi River. The entire Mississippi River watershed upstream of

the St. Cloud intake is the source of surface water for the St. Cloud public water supply. The portion of the Mississippi basin upstream from St. Cloud has been determined to have a watershed area of 13,320 square miles. See Figure 4 for an illustration of the entire watershed area.

In 1998, the MPCA provided support to the Upper Mississippi River Source Water Protection Project (UMRSWPP) through a Clean Water Act Section 319 Grant. Project partners in UMRSWPP (the MDH, Minneapolis, St. Paul and St. Cloud) collaboratively prepared Source Water Assessments for each of the cities. Representatives from the following resource agencies guided the direction of the Source Water Assessment for St. Cloud: St. Cloud water utility; Stearns County Environmental Services; Stearns and Benton Soil and Water Conservation Districts; Sauk River Watershed District; Stearns County Emergency Response; Minnesota Department of Agriculture (MDA); MN DNR; Rivers Council of Minnesota; River Defense Network; and Minnesota Rural Water Association.

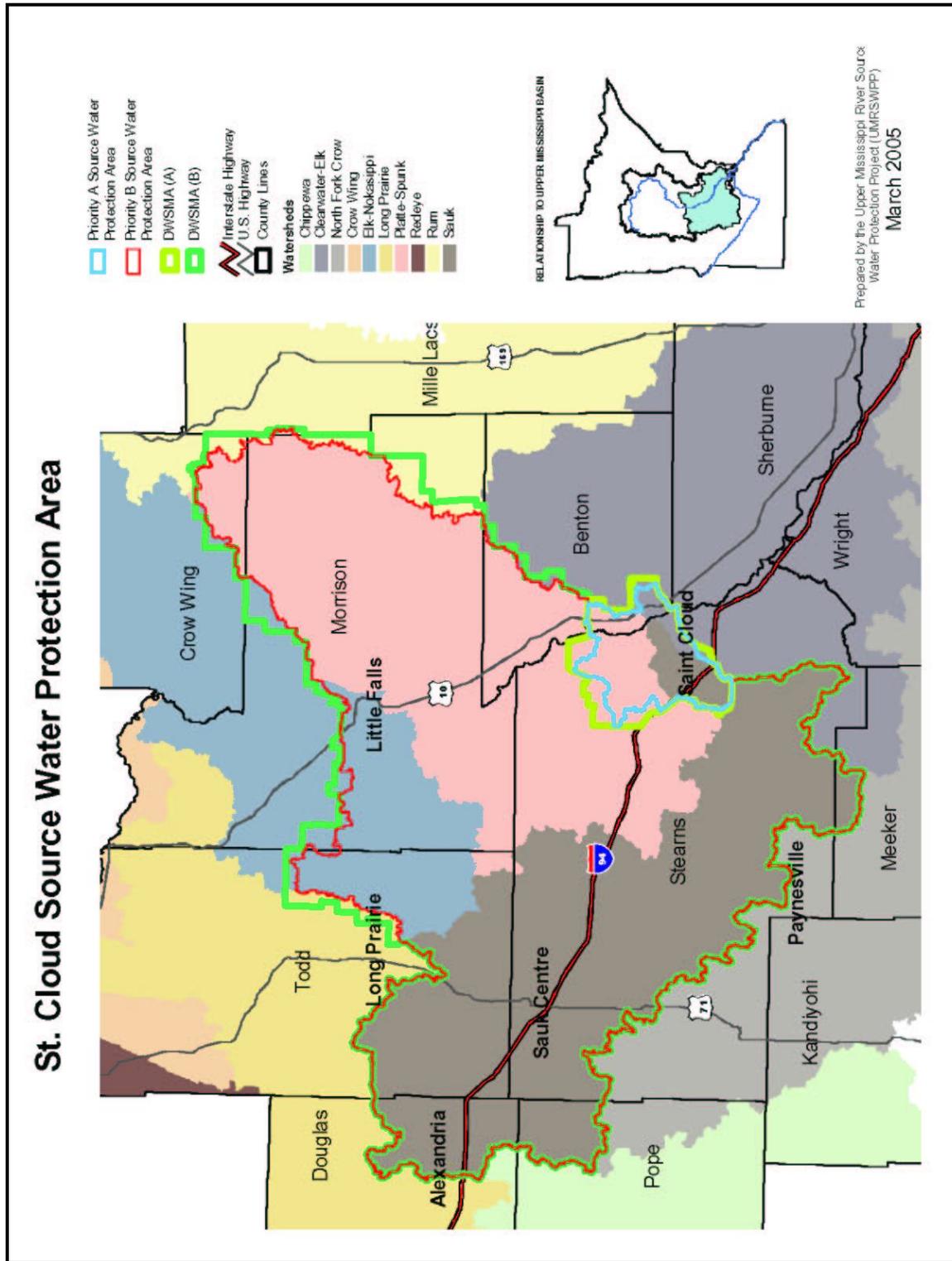
The delineated Source Water Protection area for the City of St. Cloud includes three distinct areas. The inner response area, Priority Area A, is designed to help the City address contaminant releases which present an immediate (acute) health concern to water users. This geographic area, shown in Figure 4, is defined by the amount of notification time the City needs to close the surface intake. An eight hour time-of-travel was used to determine this boundary. The outer source water protection area is designed to enable protection of water users from long-term (chronic) health effects related to low levels of chemical contamination or the periodic presence of contaminants at low levels in the surface water used by the City. Also, this area is intended to enable protection of users from contaminants that may 1) be usually present at treatable levels in the source water and 2) occasionally present an acute health concern under certain conditions, such as the low stage of the Mississippi River. This area is shown as Priority Area B on Figure 4. The third assessment area is the entire watershed above the water intake and is designed to provide St. Cloud with a broad perspective in which to prioritize specific types of land uses that may impact the water quality of the source water.

Potential Sources of Contaminants to the St. Cloud Intake

The St. Cloud Source Water Assessment found both point sources (such as industrial or wastewater treatment plant discharges) and non-point sources (such as runoff from agricultural or urban lands) are present in Priority Areas A and B. The Source Water Assessment for St. Cloud can be found on the MDH website at <http://mdh-agua.health.state.mn.us/swa/surfwaterFile/1730027.pdf>

The MPCA evaluates surface water quality using the Clean Water Act goals of “fishable” and “swimmable”; drinking water use is not addressed. Surface waters are protected for aquatic life and recreation. Certain constituents which can affect aquatic life and recreation values for a water body, such as fecal coliform and turbidity, are also a concern from a drinking water perspective. The stretch of the Sauk River from Mill Creek to the Mississippi is on the 2006 Impaired Waters list (per section 303(d) Clean

Figure 4. St. Cloud Source Water Protection Area



Water Act) due to fecal coliform.

Susceptibility is defined by MDH as the likelihood that a contaminant will enter a public water supply at a level which may result in an adverse human health impact. The susceptibility of any surface-water source is determined to be high because there is no practical means of preventing all potential contaminant releases into surface waters. The federal Safe Drinking Water Act recognizes the susceptibility of surface waters and requires filtration to remove pathogens and particulate contaminants.

St. Cloud's Source Water Protection Plan

The Source Water Protection Plan for the City of St. Cloud, Minnesota, Part II Potential Contaminant Source Inventory and Management Strategy (SWPP-St.Cloud) identifies management strategies to improve the quality of runoff to the Mississippi River, along with actions to prevent contamination from accidental spills as a high priority in Priority Area A. The *SWPP-St.Cloud* is available on the Upper Mississippi River Source Water Protection Project website <http://www.umrswpp.com/>

The *SWPP-St.Cloud* lists the following contaminants of greatest concern to the City of St. Cloud (not ranked by priority):

- Total suspended solids, sediment and suspended organics
- Cryptosporidium
- Biological and microbiological organisms, such as fecal coliform, Giardia and viruses
- Nutrients, including phosphorus, nitrates and ammonia
- Pesticides
- Petroleum products
- Organic solvents
- Pharmaceuticals
- Endocrine-disrupting chemicals

The *SWPP-St.Cloud* assessed and prioritized the potential sources of contamination in Priority Area A according to their ability to influence the surface water intakes. The priority for implementation strategies is as follows:

High Priority Sources: "Known Contaminants"

- Improper Manure Management/Storage Sites
- Known Stormwater Discharge Sites
- Cropland Sediment Runoff
- Streambank Erosion
- Transportation Corridors
- Hazardous Waste Clean-up Sites
- Failing Septic Systems
- Leaking Underground Storage Tanks

Medium Priority Sources: “Potential Contaminants”

- Gravel and Mining
- Residential Lawn Management
- Above Ground Storage Tanks
- Agricultural Chemical and Pesticide Applicators
- NPDES Permits
- Underground Storage Tanks
- Vehicle Salvage Yards

Low Priority Sources: “Permitted and Regulated”

- Wells
- Permitted Feedlots
- Permitted Hazardous Waste Generators
- Permitted Registered Storage Tanks
- Permitted Solid Waste Sites

It should be noted that many of the contaminants and their potential sources are common to both the public water suppliers using ground water and the City of St. Cloud using surface water.

Assessment of Development Impacts

Development within Stearns County

Stearns County is under strong pressure to develop, i.e. subdivide existing parcels and construct new roads and structures. There are a number of factors driving this, including population increase, financial incentives, and a desire to live either near water or outside of an urban area. The pressure is being exerted in particular in areas located near municipalities, lakes, rivers, streams and along primary travel corridors. The Map of Presettlement Vegetation, Figure 5, shows the vegetation as mapped in 1895. The Map of Existing Landuse, Figure 6, illustrates land use as mapped by using property tax codes in 2006.

The population of Stearns County, as determined by the 2000 census, is 133,166. The June 2007 projection of the Minnesota Planning State Demographic Center is that by 2015 the population will be 164,430, a 14% increase over 2005. The population increase from 2005 to 2035 is projected to be 194,490, an increase of 35%. This increase will serve to accelerate development pressures.

Significant land subdivision and platting is taking place around the County’s lakes and streams. There were 982 construction site permits issued in 2006 by the County, 269, or 27%, of which were issued in shoreland. There were 50 plats reviewed by the County Planning Commission in 2006. The level of building and subdividing within the municipalities is comparable to that which is outside the municipalities.

Effects of Impervious Surface

In a natural, undisturbed setting prior to European settlement, the native ground surface was often pervious, meaning that the water could freely infiltrate into the soil. This infiltrated water often enters the ground water system and maintains the water levels of wetlands, lakes, rivers and streams. In developed areas, the soil surface is frequently covered with impervious materials such as asphalt, concrete and roof tops that do not allow water to infiltrate. Excess water from rainfall and snowmelt events that is not allowed to infiltrate into the soil is called stormwater runoff.

Hydrologic changes begin when a proposed development site is cleared of vegetation, the top soil is stock piled, and the site is graded to prepare for the future buildings and infrastructure. Natural depressions that provided temporary rainfall storage are often filled and graded. The more erosive subsoil is exposed and subject to the erosive energy from the raindrop. The soil that has been stockpiled loses its structure and its ability to infiltrate is significantly reduced after the topsoil is re-spread. Soils become compacted by the movement of heavy machinery across the landscape. Areas around the building footprint are especially likely to be compacted by the construction process.

The *2000 Maryland Stormwater Design Manual* illustrates the relationship between impervious cover and surface runoff, infiltration and evaporation (Figure 7). When the area is natural, 50% of the precipitation is infiltrated into the ground and 10% runs off. Impervious surface of 10-20% would represent an area of moderate development. This level of development doubles the amount of run off to 20% and the amount of infiltration is reduced to 42%. In an area of heavy development, with 75 to 100% impervious surface, the amount of infiltration is reduced to 15% and 55% runs off. The volume of stormwater runoff increases sharply with impervious cover. Studies show that hydraulic and biological changes to streams occur when as little as 10 to 20 percent of a watershed is covered with impervious surfaces. (Metropolitan Council, 2001)

In Minnesota, the cold winter weather intensifies the problems caused by stormwater runoff. Precipitation received as snowfall is stored during the year then released during snowmelt. The average annual snowfall in Stearns County varies from 40 inches in the northwest corner to 48 inches throughout the rest of the County (from the DNR website http://climate.umn.edu/img/historical/annual_snow.jpg). The stormwater runoff from snowmelt is increased because frozen soils only allow minimal infiltration during the spring snowmelt.

Changes to Hydrology

Impervious surfaces created by development increase the velocity of stormwater runoff, which decreases the amount of time required to remove the stormwater runoff from the development. Increased stormwater volume and velocity result in higher peak discharges and shorter times to reach peak discharge. This additional water causes higher flows, flooding, and erosion in our natural water conveyance systems. Figure 8 shows an example of a typical pre-development and post-development hydrograph for a watershed

Figure 5. Presettlement Vegetation

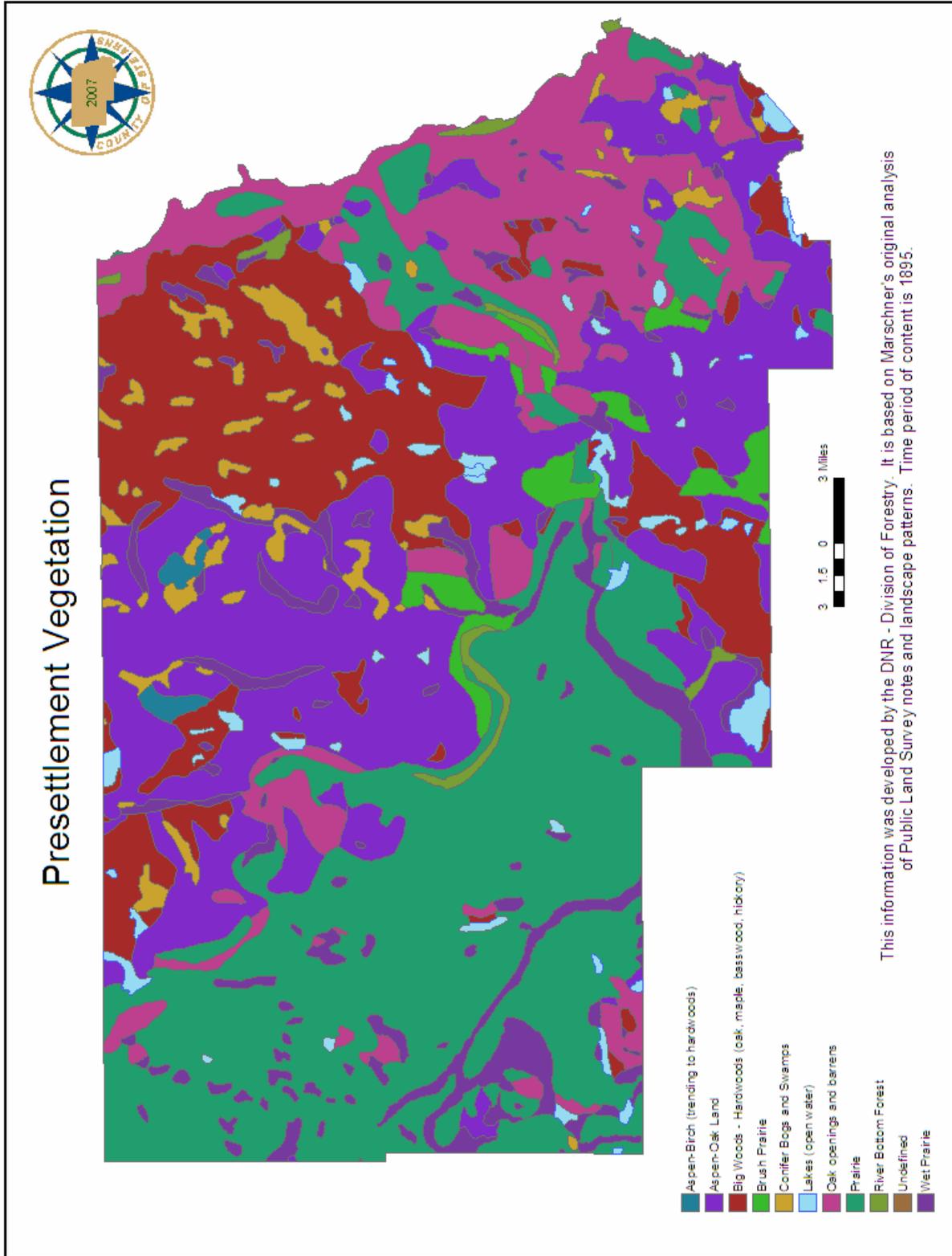
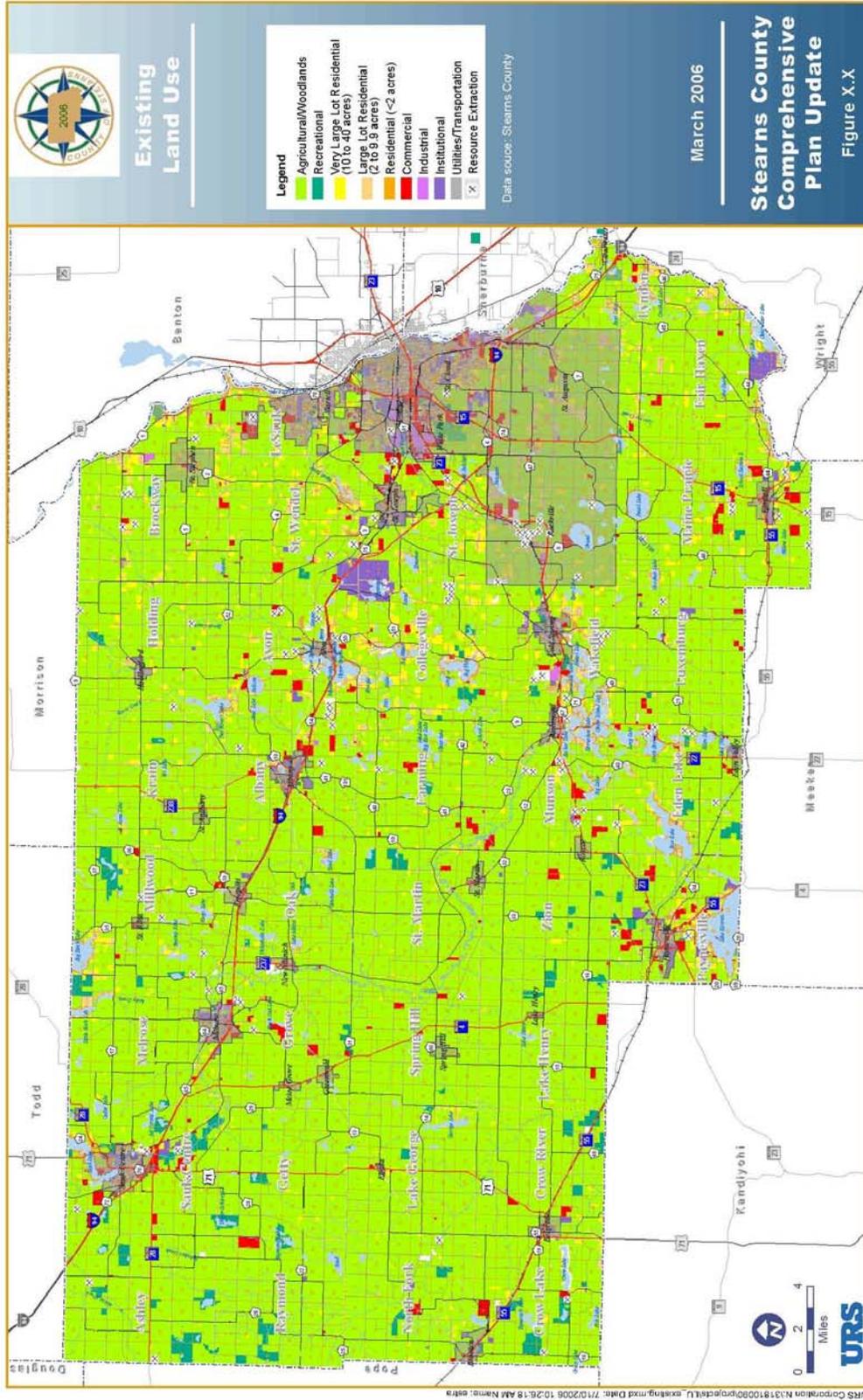


Figure 6. Existing Landuse



In summary, as the land changes from rural to urbanized, the amount of impervious surface and soil compaction in a watershed increase. This often impacts stream flow, stream geomorphology, aquatic habitat, and water quality. The following, taken from the *2005 Minnesota Stormwater Manual Version 1.1*, details these stormwater impacts:

Changes to stream flow

- Increased runoff volume

- Increased peak runoff discharges can be two to five times higher than those in an undisturbed watershed

- Greater runoff velocities

- Increased flooding

- Lower dry weather flows

Changes to stream geomorphology

- Stream widening and bank erosion

- Stream downcutting, which causes further instability and erosion of the stream bank

- Loss of riparian canopy as streambanks are undercut and slump into the channel

Impacts to aquatic habitat

- Degradation of habitat structure -- faster flows can wash away entire biological communities. The loss of riparian vegetation can reduce habitat for many fish species, while sediment deposits can smother bottom-dwelling organisms.

- Increased stream temperature

- Decline in abundance and biodiversity

Pollutants of Concern

The principal pollutants found in urban runoff are nutrients, both phosphorus and nitrogen; sediments; organic material, such as grass clippings and leaves; pathogens such as bacteria and viruses; hydrocarbons from leaking vehicles; metals; pesticides; and chlorides from road and parking lot salt. These pollutants, whatever the source, can be collected by stormwater and eventually deposited into lakes, rivers and streams. In undeveloped areas natural processes minimize and filter out the contaminants through infiltration and evaporation. Impervious areas reduce the opportunity for natural processes to treat stormwater.

Potential results from contaminated stormwater include (as detailed in the *2005 Minnesota Stormwater Manual, Version 1.1*): beach closures and potential illness from bacteria/virus from fecal material in pet and wildlife litter; excessive algal growth in lakes and streams from nutrient enrichment; toxicity from ammonia, metals, organic compounds, pesticides and other contaminants; and oxygen depletion of the water from biodegradable organic material.

National Pollutant Discharge Elimination System (NPDES)

The MPCA's Storm Water Program regulates stormwater runoff from three main sources: construction, industrial and municipal. Mandated by Congress under the Clean Water Act, the NPDES Storm Water Program is a comprehensive national program for addressing polluted storm water runoff. The primary requirement is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be designed with the goal of eliminating or minimizing storm water contact with potential pollutants through the use of BMP's. All NPDES permits are issued by the MPCA.

Construction site permits are necessary for any construction project that disturbs more than one acre or disturbs less than one acre of soil if that activity is part of a "larger common plan of development or sale" that is greater than one acre. Stearns County has entered into a joint powers agreement with the MPCA, in which the County does the inspections of the NPDES construction site permits through November 30, 2007. Phase III of the NPDES program will go into effect in 2008.

Stormwater at industrial sites may come into contact with a number of harmful pollutants, including metals, oil, grease, and chlorides. Compliance with the Industrial Stormwater General Permit will reduce pollution to waters of the state through a focus on BMP's.

Stearns County and its communities are, or will be, facing the necessity of addressing the impacts of stormwater runoff as part of the NPDES Phase II Storm Water Program. The NPDES Phase I Permit covered large municipalities serving over 100,000 residents. NPDES Phase II permits are required by communities with a population of 10,000 or more and communities with a population of 5,000 to 10,000 that discharge or have the potential to discharge to special or impaired water. These communities are commonly referred to as MS4's – Municipal Separate Storm Sewer Systems. Stearns County, the Cities of Saint Cloud, Sartell, Waite Park, and St. Joseph and the Townships of Le Sauk, Brockway and St. Joseph are MS4's and have NPDES permits. MS4s are required to develop and implement a SWPPP to reduce the discharge of pollutants from their storm sewer system to the maximum extent practicable. The SWPPP must cover six minimum control measures:

- Public education and outreach;
- Public participation/involvement;
- Illicit discharge, detection and elimination;
- Construction site runoff control;
- Post-construction site runoff control; and
- Pollution prevention/good housekeeping.

The MS4 must identify BMP's and measurable goals associated with each minimum control measure. An annual report on the implementation of the SWPPP must be submitted by June 30 of each year.

Figure 7. Relationship of Impervious Cover and Surface Runoff

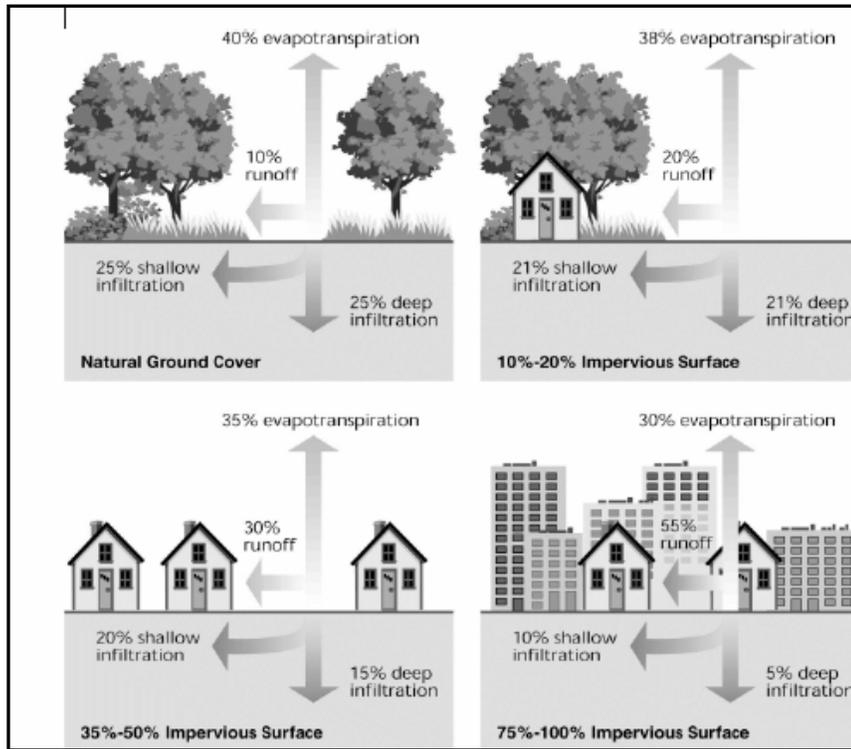
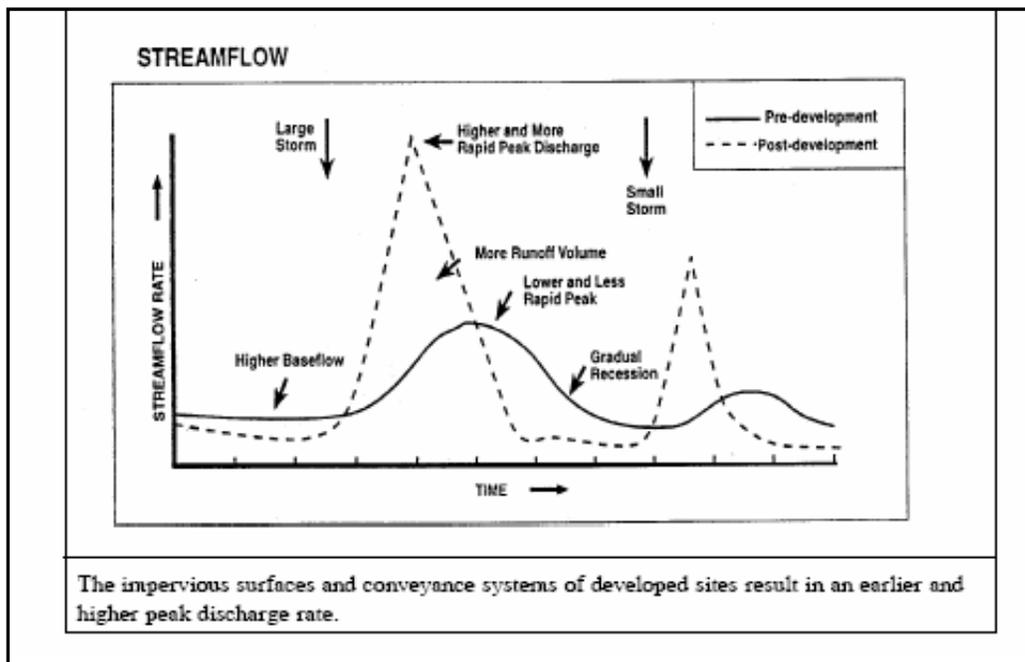


Figure 8. Pre-Development and Post-Development Streamflow Hydrograph



Assessment of Impaired Waters

Section 303(d) of the Federal Clean Water Act (CWA) requires States to adopt water quality standards to protect the nation's waters. These standards define how much of a pollutant can be in surface water while still allowing the water to meet its designated uses, such as swimming, fishing, irrigation, or industrial purposes.

The Clean Water Act requires States to assess all waters of the state to identify impairments. The States are to publish bi-annually an updated list of lakes and streams that are not meeting their designated uses because of pollutants. The list, referred to as the List of Impaired Waters, is based on violations of State water quality standards. For each pollutant that causes a waterbody or watercourse to fail to meet the water quality standards, the Clean Water Act requires the State to conduct a Total Maximum Daily Load (TMDL) study, which identifies all point and nonpoint sources. Water quality sampling and computer modeling determine how much each pollutant source must reduce its contributions to assure the standard is met. Lakes and streams may have several TMDL's, each determining the limit for a different pollutant. The States set pollutant reduction goals and implement corrective measures to meet a TMDL's pollutant reduction goals and restore waters.

Because the City of St. Cloud draws its drinking water from the Mississippi River, there is an additional imperative to protect the quality of surface water. The watershed for the St. Cloud intake includes the Sauk River and Platte-Spunke watersheds. Addressing the issue of impaired waters is of very high importance to the County and to the natural resource partners acting within the County.

Like much of Minnesota, only a small percentage of the lakes, rivers and streams within Stearns County have been monitored to MPCA standards to determine whether or not they are meeting their designated uses. Of those that have had a sufficient level of data collected, the following have been determined to not meet their designated uses. The *Priority Concerns Scoping Document*, located in the Appendix, contains a map of the impaired waters and the 2006 Impaired Waters List for Stearns County.

Impairments due only to Mercury or PCB

The following rivers, streams and lakes are on the 2006 Impaired List only due to mercury or PCB impairment:

Crow River, North Fork, Headwaters (Grove Lake to Lake Koronis)
Mississippi River, all stretches along Stearns
Sauk River from Sauk Lake to Melrose Dam
Sauk River from Adley Creek to Horseshoe Lake
Sauk River, Knaus Lake to Mill Creek

Big Birch Lake

Lake Koronis

Big Fish Lake
Cedar Island Lake (east)
Cedar Island Lake (Mud)
Clearwater Lake
Grand Lake

Kreigle Lake
Mary Lake
Rice Lake
Sagatagan Lake
Two River Lake

MPCA research has demonstrated that 70% of current mercury deposition in Minnesota comes from anthropogenic sources, such as electricity generation by coal-burning and petroleum refining and combustion and 30% from natural sources, such as volcanoes. There are no known natural sources in the state that emit mercury directly to the atmosphere. About 90% of the mercury deposition in the state originates from outside the state, so the first-cut TMDL allocation is a 90% federal share and a 10% state share; the federal government will be responsible for meeting its reduction goal, developing schedules and meeting reasonable assurance requirements of the Clean Water Act. (From MPCA website <http://www.pca.state.mn.us/water/tmdl/tmdl-mercuryplan.html>)

The long-term goal of the mercury TMDL is for the human consumption of fish to be considered safe. The mercury TMDL establishes that there needs to be a 93% reduction in state emissions from 1990 for the state to meet its established share. A summary of the target reductions for various sources of mercury can be found on the MPCA website cited above.

The MPCA will also lead efforts on TMDL studies for polychlorinated biphenyls (PCB). The MPCA recommends that counties address waters listed for pollutants/stressors other than mercury and PCB's in the local water management plans.

Impairments due to Pollutants/stressors other than Mercury or PCB

The following list is from the 2006 Impaired Waters List. This list shows the rivers, streams and lakes in Stearns County with impairments other than mercury or PCB and the pollutant or stressor causing the impairment:

Ashley Creek, Headwaters to Sauk Lake – Low oxygen
Clearwater River, Clearwater Lake to Mississippi River – Low Oxygen
Getchell Creek, Unnamed Creek to Sauk River – Invertebrate IBI
Mill Creek, Headwaters to Sauk River – Fecal coliform
Sauk River, Melrose Dam to Adley Creek – Invertebrate IBI
Sauk River, Mill Creek to Mississippi River – Fecal coliform and PCB
Unnamed Creek, Unnamed Cr to Unnamed Cr (Farming Twp) – Invertebrate IBI

Bolfing (aka Bolting) (73-0088-00) -- Excess nutrients
Cedar Island (main) (73-0133-01) -- Excess nutrients
Cedar Island (Koetter) (73-0133-03) – Excess nutrients
Great Northern (73-0083-00) -- Excess nutrients
Horseshoe (73-0157-00) – Excess nutrients
Knaus (73-0086-00) -- Excess nutrients

Krays (73-0087-00) -- Excess nutrients
Long Lake (in Eden Lake Township) (73-0139-00) – Excess nutrients
Lake Louisa (86-0282-00) —Excess nutrients
Lake Maria (73-0215-00) – Excess nutrients
Sauk Lake (77-0150-00) – Excess nutrients
Schneider Lake (73-0082-00) – Excess nutrients
Zumwalde (73-0089-00) -- Excess nutrients

Status of TMDL's Currently Identified in the County

The TMDL process can be separated into the following phases:

- Phase I is review of water quality data, identification of data gaps and development of work plan for Phase II.
- Phase II is water quality data collection and development of Phase III work plan.
- Phase III is development of impairment loads and preparation of implementation plan.
- Phase IV is implementation of TMDL Plan and monitoring for effectiveness of the implementation measures.

All the waters on the 2006 Impaired Waters 303(d) list, other than those listed for mercury or PCB-only impairments, are within watershed districts. The Clearwater River and Lake Louisa are within the Clearwater River Watershed District. The remaining listed impaired waters are within the Sauk River Watershed District.

In regard to Lake Louisa, the Clearwater River Watershed District is completing Phase II of the TMDL process and will begin Phase III (developing the loads and implementation work plan) in 2007. Concerning the Clearwater River, the Clearwater River Watershed District will be filling data gaps (Phase II) in 2007 and proceed to Phase III later in 2007.

The Sauk River Watershed District is in Phase II of the TMDL process for those lakes that are part of the Sauk Chain of Lakes (Bolting, Cedar Island, Great Northern, Horseshoe, Knaus, Krays, Long, Schneider and Zumwalde). Modeling and load allocations are expected to be done in 2007. It is anticipated that a public hearing will be held in spring 2008 and final action taken by September 2008. Monitoring will be done on Sauk Lake in 2007 and load allocations done by September 2009.

The Sauk River Watershed District is currently revisiting and prioritizing actions concerning the impaired streams, rivers and Lake Maria.

Identified Pollutants and Stressors

The pollutants/stressors which have been identified in Stearns County are mercury, PCB's, excess nutrients, low oxygen, fecal coliform, and the invertebrate Index of Biological Integrity (IBI). As explained previously, mercury and PCB's will not be addressed by this water management plan.

Excess Nutrients

Excess nutrients are inputs of phosphorus and nitrogen that can cause nuisance growths of weeds and algae. The nutrients can come from the following (not necessarily listed in order of importance): feedlot runoff, runoff from agricultural fields, stormwater runoff from urban and residential areas, municipal and industrial wastewater, runoff from construction projects, leakage from septic tanks, nutrients from wetland drainage, channel erosion, shoreline erosion and others. Most of the excess nutrients come from what is known as nonpoint sources of pollution -- they are not discharged from a specific pipe, but instead are washed off the land or seep into ground water. Excess nutrients in a lake can also be due to internal loading of the lake even after the non-point issues are resolved.

Low Oxygen

Oxygen is necessary to maintain a healthy ecosystem for fish and other aquatic life in a waterbody. Levels above 5 mg/L are considered optimal, and most fish cannot survive for prolonged periods at levels below 3 mg/L.

Oxygen concentrations in the water column fluctuate under natural conditions, but severe depletion usually results from human activities that introduce large quantities of biodegradable organic materials into surface waters. Bacterial degradation of organic materials, such as algae and weeds, can result in a decline in oxygen concentrations in the water. Oxygen depletion can also result from chemical reactions placing a chemical oxygen demand on receiving waters. Other factors (such as temperature and salinity) influence the amount of oxygen dissolved in water. Prolonged hot weather will depress oxygen concentrations and may cause fish kills even in clean waters because warm water cannot hold as much oxygen as cold water. Under ice and snow cover where light is severely attenuated, photosynthesis is limited and the addition of oxygen through photosynthesis can be eliminated. Respiration can reduce oxygen to levels insufficient to support fish and other organisms and result in winterkill.

Fecal Coliform Bacteria (E. coli)

Bacteria, viruses and other microorganisms are almost universally present in the environment and most are beneficial to humans and other animals. A few types of microorganisms are harmful and can cause sickness or death if ingested. Fecal coliform and *E. coli* are used as “indicator organisms” in water quality monitoring. The presence of fecal coliform is an indicator that fecal matter is getting into the waterbody, and that other potentially harmful contaminants may be also be entering the waterbody. The main sources of these bacteria are from animal and human waste. Animal sources of bacteria include feedlot and manure runoff, urban runoff, and wildlife. Improperly treated human waste may come from overflows from sewage treatment systems in cities and towns, unsewered areas with inadequate community or individual wastewater treatment, or homes with failing septic systems.

E. coli is a sub-group of fecal coliform and is virtually always present in water when fecal coliform is present. The MPCA is revising Minnesota Rules chapter 7050, with a

scheduled completion in 2007. The revision includes replacement of the fecal coliform bacteriological standard with *E. coli*.

Invertebrate IBI

Watershed disturbances from urban, residential, and agricultural development contribute to an overall decrease in the biological integrity of rivers and streams. The invertebrate Index of Biological Integrity (IBI) is a means of focusing on indicators that integrate the effects of physical and chemical stressors on the biota of the rivers and streams. The IBI is a method of quantifying and interpreting the results of biological surveys of macroinvertebrates. The result allows the user to detect changes in the environmental condition due to human disturbance. Waters which have been listed as impaired due to invertebrate IBI have been subjected to increased loads of sedimentation, elevated temperature, low oxygen levels, loss of habitat, and other factors.

Sources of Pollutants/Stressors

The impairments which have been identified to date can come from a variety of sources, (not necessarily in order of importance), including:

- feedlot runoff
- runoff from agricultural fields
- stormwater runoff from urban and residential areas
- municipal and industrial wastewater
- runoff from construction projects
- septic tank effluent
- nutrients from wetland drainage
- wildlife
- pet waste
- channel erosion

Impacts from development, including storm water management and runoff from construction projects, are being addressed in this water management plan as a separate Priority Concern. Municipal and industrial wastewater effluent is permitted from the MPCA and could potentially be part of a TMDL allocation plan. Source water protection is also a Priority Concern of this water management plan and septic tank contributions will be addressed under that Priority Concern. Nutrients from wetland drainage and wildlife are natural phenomena and are beyond the scope of this water management plan.

Stearns County has been delegated by the MPCA since 1998 to administer the State feedlot rules. Proper design, construction and operation of feedlots and the use of BMP's for the application of phosphorus and nitrogen fertilizers will minimize their migration into surface and ground waters. There are approximately 2,800 animal livestock operations in the County. By the end of 2007 the County plans to have inspected and evaluated all the feedlots. Future priorities for feedlot improvements will be feedlots in shoreland, feedlots within watersheds of impaired waters and feedlots within Drinking Water Supply Management Areas.

Prioritization of Monitoring

The water that has been listed as impaired is located within watershed districts, primarily because the watershed districts have initiated monitoring. There are many water resources that should be monitored, but due to limitations of resources, not all can be monitored. A goal of this plan is to initiate a process between the County, watershed districts, lake associations and the MPCA to determine which lakes, rivers and streams should be of highest priority for monitoring. The result will be a systematic and countywide approach to monitoring. Relevant criteria for determining which water resources should be monitored include the following:

- If the monitoring data indicates that a lake, river or stream segment is probably impaired and could potentially be found to be listed as impaired if more monitoring is done, it would have high priority for future monitoring.
- Lakes which have historically had mostly good water quality values and are particularly valuable to the County as recreational assets should be considered to have high priority for monitoring.
- Lakes that are undergoing particularly strong pressures from development would be considered high priority. Any changes in the water quality due to development could then be tracked in a timely manner.
- Those lakes that have a public access or are managed by DNR fisheries are considered to be valuable to the County's residents for recreation.
- Lakes that do not have a public access and have few residences are valuable resources but would be considered to have a lower priority ranking for monitoring purposes.

IMPLEMENTATION PROGRAM

An implementation program that maximizes partnerships and existing programs has been developed for each priority concern. The resource managers in the County have provided considerable input to the development of the implementation program. The program is intended to coordinate and build upon the efforts of all the entities. Implementation is based on goals, objectives and actions.

- A goal is a general statement of what is to be accomplished over the long term to address the priority concerns.
- Objectives state how the goal will be accomplished by breaking it down into smaller, more specific measures that will be taken.
- An action is the specific action that will be taken in order to achieve a goal and objective.

This Water Management Plan is written for the next ten years, 2008-2017. It is anticipated that there will be an annual review of what has been accomplished and an

annual assessment of the progress needed to accomplish the goals, objectives and actions. After five years the Plan will be reviewed for the purpose of deciding whether or not a plan amendment should be pursued to update the implementation schedule for the final five years.

Implementation of Source Water Protection

Goal 1 is to protect, enhance and improve, as needed, the quality of drinking water supplied by the public water suppliers in Stearns County. This will be done by cooperating with and assisting community public water suppliers who are developing and implementing Source Water Protection Plans, including Wellhead Protection Plans, with the assistance of the Stearns County Urban Conservationist.

Objective A -- Promote, support and participate in education directed at the issues affecting Source Water Protection. Focus areas are the communities with Source Water Protection Plans and the communities with vulnerable wells and approved Wellhead Protection Plans.

1. Promote and support Source Water Protection educational activities, in particular concerning maintenance of onsite sewage treatment systems, proper disposal of hazardous chemicals through the Household Hazardous Waste program, stormwater runoff, low impact development, BMP's during construction, and properly sealing unused wells.
Partners: Stearns County Environmental Services Department (ESD), Soil and Water Conservation District (SWCD), MDH, Minnesota Rural Water Association (MRWA), public water suppliers, Central Minnesota Water Education Alliance (CMWEA)
Funding: Estimated Cost \$30,000
Timeline: 2008-2017
2. Participate with communities on educational activities, such as water festivals and educational fairs.
Partners: ESD, SWCD, MDH, MRWA, municipalities, DNR, Watershed Districts (WD's), lake associations
Funding: \$50,000.
Timeline: 2008-2017

Objective B -- Focus inspection and enforcement activities within the targeted areas of shoreland and Drinking Water Supply Management Areas.

1. Continue to inspect all feedlots, with a particular focus on the feedlots in vulnerable and highly vulnerable DWSMA's, and work with owners/operators to bring their facilities into compliance. In addition, assess the potential negative effects on ground water quality that can result from manure storage and stockpiling of manure.
Partners: ESD, SWCD, MDH, MRWA, Board of Water and Soil Resources (BWSR), MDA, United States Geologic Survey (USGS)

Funding: Estimated Cost is \$350,000
Timeline: 2008-2017

2. Continue to inspect all feedlots, with a particular focus on the feedlots within shoreland, work with owners/operators to bring their facilities into compliance and assess the potential impacts to surface water quality from open lot runoff.
Partners: ESD, SWCD, , BWSR, MDA
Funding: Estimated Cost is \$450,000
Timeline: 2008-2017
3. Inspect areas within DWSMA's and shoreland for proper application of nutrients and review records of land application.
Partners: ESD, SWCD, MDH, MRWA, BWSR, MPCA
Funding: Estimated Cost is \$150,000
Timeline: 2008-2017
4. Work with MPCA to focus NPDES Phase II Construction Permit inspections in the St. Cloud DWSMA Priority Area A.
Partners: ESD, MPCA, SWCD, St. Cloud
Funding: Estimated Cost is \$50,000
Timeline: 2008-2017

Objective C -- Administer initiatives that advance Source Water Protection.

1. Seek funding for Source Water Protection, including both Wellhead Protection and protection of surface water intakes.
Partners: MDH, MRWA, ESD, SWCD, BWSR, MPCA
Funding: Estimated Cost is \$5,000
Timeline: 2008-2017
2. Participate, as requested, in the development and implementation of Source Water Protection Plans.
Partners: ESD, SWCD, MDH, MRWA, Public Water Suppliers
Funding: Estimated Cost is \$10,000
Timeline: 2008-2017
3. Support local efforts to conduct nitrate testing for private wells through nitrate "clinics".
Partners: MDA, SWCD, MDH, MRWA, BWSR, lake associations, WD's
Funding: Estimated Cost is \$10,000
Timeline: 2008-2017
4. Explore development of planning and zoning tools, such as an overlay district, which promote proactive land use planning in order to protect drinking water supplies. One of the aspects of the overlay district will include evaluation of proposed storm water infiltration projects in vulnerable wellhead protection areas, using MDH guidance.
Partners: ESD, MDH, MRWA, Cities and Townships

Funding: \$10,000
Timeline: 2008-2009

5. Explore development of additional required protective measures for aggregate mining in wellhead protection areas overlying geologically sensitive aquifers. Additional measures are detailed in the MDH guidance document “Wellhead Protection Issues Related to Mining Activities”.
Partners: ESD, MDH, MRWA, WD’s
Funding: Estimated Cost is \$1,000
Timeline: 2008-2009

Objective D -- Employ land and water treatment initiatives for the protection of source water. Focus will be in DWSMA’s.

1. Promote efforts to minimize the potential negative effects of unused wells by reactivating, sealing by a licensed contractor or obtaining a maintenance permit for the well.
Partners: ESD, MDH, MRWA, public water suppliers, SWCD, BWSR, WD’s
Funding: Estimated Cost is \$1,000
Timeline: 2008-2017
2. Promote cost-share programs for properly sealing unused wells.
Partners: ESD, MDH, MRWA, public water suppliers, SWCD, BWSR, WD’s
Funding: Estimated Cost is \$5,000
Timeline: 2008-2017
3. Cooperate with public water suppliers with vulnerable DWSMA’s to inventory those ISTS located within the vulnerable or highly vulnerable areas of the DWSMA and explore possible sources of funding to correct noncompliant systems. Support innovative approaches towards inspection programs of individual septic treatment systems.
Partners: ESD, MRWA, public water suppliers, SWCD, BWSR, WD’s
Funding: Estimated Cost is \$200,000
Timeline: 2008-2017
4. Support the awarding of additional scoring points in the determination of eligibility for conservation program funding if an area is within a DWSMA.
Partners: NRCS, SWCD, MRWA, public water suppliers, BWSR, WD’s
Funding: Estimated Cost is \$1,000
Timeline: 2008-2009
5. Cooperate with the public water suppliers in their promotion of conservation programs.
Partners: National Resources Conservation Service (NRCS), SWCD, MRWA, public water suppliers, BWSR, WD’s
Funding: Estimated Cost is \$10,000
Timeline: 2008-2017
6. Promote BMP’s associated with irrigation on coarse textured soils in DWSMA’s.
Partners: MDA, NRCS, SWCD, MRWA, public water suppliers, WD’s, DNR

Funding: Estimated Cost is \$10,000
Timeline: 2008-2017

7. Support research for the purpose of developing the use of native/alternative plants as a cellulosic source for biofuels. Support the planting of native/alternative, low input plants as vegetative buffers, particularly in Source Water Protection areas.
Partners: MDA, NRCS, SWCD, MRWA, St. Cloud
Funding: Estimated Cost is \$10,000
Timeline: 2008-2012
8. Explore the possibility of supplemental incentive funding to existing programs for vegetative buffers, set aside programs and BMP's. Possible sources are watershed districts, the UMRSWPP, or municipal water utility funds.
Partners: NRCS, SWCD, MRWA, St. Cloud, BWSR, WD's, lake associations, other non-profits
Funding: Estimated Cost is \$10,000
Timeline: 2008-2017
9. Cooperate with public water suppliers with DWSMA's in their efforts to reduce agricultural chemical usage in areas where runoff and/or infiltration to the aquifer are a concern through education and incentive programs.
Partners: NRCS, SWCD, MRWA, public water suppliers, BWSR, WD's
Funding: Estimated Cost is \$10,000
Timeline: 2008-2017
10. Encourage public water suppliers with Source Water Protection plans to collect household hazardous waste through the County Household Hazardous Waste Collection program.
Partners: ESD, public water suppliers
Funding: Estimated Cost is \$1,000
Timeline: 2008-2017

Objective E -- Conduct mapping and inventory initiatives for the purpose of source water protection.

1. Cooperate with the requests of public water suppliers in mapping and inventory initiatives within DWSMA's. These initiatives may include:
 - detailed inventory of potential contaminants
 - mapping and documenting storm water outfalls on rivers and tributaries
 - mapping and documenting private and public drainage ditches
 - gathering information on stormsheds for storm outfalls and ditch outfalls
 - inventory and map areas that need buffers to reduce sediment loading.Partners: ESD, SWCD, public water suppliers
Funding: Estimated Cost is \$26,000
Timeline: 2008-2017

Implementation of Development Impacts

Goal 2 is to minimize the impact from new development and redevelopment on surface and ground water resources. Areas of highest concern are river and lake shoreland.

Objective A -- Encourage low impact development and better site design strategies on all new and redevelopment projects. This objective will be addressed throughout the county.

1. Promote low impact development strategies by seeking to include in the Stearns County Landuse and Zoning Ordinance #209 incentives for projects that use low impact development strategies
Partners: ESD, SWCD
Funding: Estimated Cost is \$10,000
Timeline: 2008-2009
2. Promote minimization of soil compaction around building sites. Strategies include:
 - inclusion in the Shoreland Contractor Workshop agenda
 - inclusion in the County Circular, published quarterly
 - inclusion on the Central Minnesota Water Education Alliance website
 - provide incentives in Stearns County Planning and Zoning Ordinance #209 for minimization of soil compactionPartners: SWCD, ESD, municipalities, Central MN Builders Association
Funding: \$5,000
Timeline: 2008-2017
3. Promote projects that can be used to demonstrate green roofs, rain gardens, pervious pavement, infiltration boulevards, etc. Strategies include:
 - tours of completed projects every two years. Tours are open to development community, agency staff, and interested citizens.
 - completion of one project in the County every two years
 - development of a cost share programPartners: SWCD, County Parks Dept., Minnesota Erosion Control Association, Lake Associations
Funding: \$50,000
Timeline: 2008-2012
4. Clarify and strengthen the language in the General Erosion and Sediment Control Standards of Stearns County Landuse and Zoning Ordinance #209 Section 7.5.1 so that it is more clearly defined and understandable. Encourage municipalities to synchronize their erosion and control standards with the County's.
Partners: ESD, SWCD, municipalities
Funding: \$2,000
Timeline: 2008-2009

5. Include in the Stearns County Landuse and Zoning Ordinance #209 a means of utilizing conservation design, either through incentives or mandates.
Partners: ESD, SWCD
Funding: \$5,000
Timeline: 2008-2009
6. Research a County-managed conservation easement program which would promote the use of conservation subdivisions.
Partners: ESD, County Parks Department, MN Land Trust
Funding: \$1,000
Timeline: 2008-2009
7. Include as part of the platting process the requirement that the first plan submitted by the applicant should be a conceptual sketch plan, rather than a preliminary plat. The conceptual sketch plan will contain a detailed existing resource and site analysis map. A context map will also be submitted of the immediate area surrounding the land to be platted. Pre-application meetings with the applicant, using the conceptual sketch plan, will be used as an opportunity to design the plat with the goal of preserving sensitive land.
Partners: ESD, SWCD
Funding: \$5,000
Timeline: 2008-2009
8. Utilize the DNR Green Infrastructure Mapping to identify significant natural areas, to identify corridors that serve as connections between these significant areas and to guide development to less sensitive areas.
Partners: ESD, SWCD
Funding: \$2,000
Timeline: 2008-2010
9. Research and implement portions of the Alternative Shoreland Standards developed through the Governor's Initiative.
Partners: ESD, DNR
Funding: \$2,000
Timeline: 2008-2009

Objective B -- Promote land and water best management practices in shoreland

1. Assist landowners with shoreland and riparian BMP's, such as vegetative buffers, including cost-share assistance if requested.
Partners: SWCD, WD's, DNR, ESD, lake associations, MN Waters
Funding: \$200,000; Potential source is grants from BWSR, DNR & MN Waters
Timeline: 2008-2017
2. Promote disconnection of impervious surfaces from waters of the state by the use of BMP's, promoted through education and incentives.
Partners: SWCD, lake associations, ESD, WD's
Funding: \$25,000; Potential source of funding is grants from BWSR and DNR

Timeline: 2008-2017

3. Have a detailed Countywide Natural Resource Inventory completed. The purpose of the inventory is to identify sensitive natural areas for the purpose of restoration and preservation and for the purpose of planning future development.
Partners: SWCD, DNR, ESD, WD's, lake associations
Funding: \$100,000; Potential sources of funding are grants from BWSR and DNR
Timeline: 2008-2017
4. Seek to adopt language in the Stearns County Landuse and Zoning Ordinance #209 so that construction of retaining walls in shoreland is only approved for sediment and erosion control and will not be allowed for aesthetic purposes.
Partners: ESD
Funding: \$2,000
Timeline: 2008-2009
5. Seek out and assist with storm water management and/or erosion control retrofit projects, particularly around lakes and rivers
Partners: SWCD, ESD, WD's, lake associations, municipalities, townships
Funding: \$100,000; Potential sources of funding are grants from BWSR
Timeline: 2008-2017
6. Include in the Stearns County Landuse and Zoning Ordinance #209 a provision that the Stearns Pollutant Loading Model will be run for all proposed projects in shoreland. If the calculated total suspended solids and total phosphorus exceed presettlement conditions, then a BMP will be required such that the BMP will reduce loading to presettlement conditions or as defined by a TMDL.
Partners: ESD, SWCD
Funding: \$2,000
Timeline: 2008-2009

Objective C -- Improve quality of stormwater runoff and manage flow, volume and direction throughout the County.

1. Work with contractors/developers on fulfilling the requirements of the NPDES. Strategies include:
 - inspections by staff concerning compliance with stormwater ordinance
 - presentations at township meetings
 - presentations to contractors, through Central MN Builders Association (CMBA)Partners: ESD, SWCD, WD's, MPCA, CMBA
Funding: \$15,000
Timeline: 2008-2017
2. The County will do public education and outreach to increase public awareness and understanding of stormwater runoff and erosion control issues. Possible means of education and outreach include:
 - Central Minnesota Water Education Alliance

- SWCD website
- articles in Stearns County Circular, a newsletter sent to all County taxpayers quarterly, that highlight seasonal stormwater issues and stormwater related events and programs
- stormwater information on the County web site
- “Sediment and Erosion Control for New Homeowners” brochure will be provided to all Construction Permit applicants
- work with local schools to develop and implement a program for elementary school children focused on household stormwater management
- supplement/endorse Watershed District and Lake Association education efforts
- Shoreland Contractor Workshop

Partners: ESD, SWCD, WD’s, MN Waters

Funding: \$15,000

Timeline: 2008-2017

3. Clarify requirements of long term operation and maintenance plans for permanent stormwater practices and develop enforcement measures that include a monitoring procedure.

Partners: SWCD, ESD

Funding: \$15,000

Timeline: 2008-2009 strengthen requirements
2009-2017 enforce requirements

4. Revise the design standards for projects requiring storm water facility calculations. In particular, allow flexibility in the calculation for treating the discharge rates and volumes of storm water to allow for the preservation of sensitive natural resources.

Partners: ESD, SWCD

Funding: \$5,000

Timeline: 2008-2012

5. The County will establish a program, working with the Cities, to ensure that construction sites are adequately inspected for compliance with NPDES stormwater and erosion regulations should NPDES Pilot Program be discontinued.

Partners: ESD, SWCD, MPCA

Funding: \$600,000 (this includes staff position for ten years)

Timeline: 2008-2017

6. The County will continue to participate actively in the Central Minnesota Water Education Alliance (CMWEA). CMWEA is a coalition made up of the County and MS4’s that provides educational outreach to promote water quality stewardship.

Partners: MS4’s, public water suppliers, LA’s, ESD, SWCD, WD’s

Funding: \$150,000; Potential sources of funding are Initiative Foundation, private companies

Timeline: 2008-2017

7. Offer education to communities and individual contractors on the storage and application of road salt and on winter snow management techniques.
Partners: SWCD, ESD, MPCA, Watershed Districts, municipalities, Lake Associations
Funding: \$10,000
Timeline: 2008-2017

Objective D -- Better coordination of the Water Management Plan with the NPDES permit requirements of Stearns County and the MS4 communities within the County

1. The County will distribute information on the County's SWPPP including information on illicit discharges, erosion control, shoreline management, composting and pollution prevention and other applicable BMP's.
Partners: ESD, SWCD, CMWEA
Funding: \$15,000
Timeline: 2008-2017
2. County will provide public education and outreach on illicit discharge and elimination. The activities will include
 - publish articles in Stearns County Circular related to illicit discharge and hazardous waste disposal
 - provide training about the hazards and environmental impacts associated with illegal discharges
 - set up Stormwater Hotline for citizens to report illegal dumping.Partners: ESD, SWCD
Funding: \$2,000
Timeline: 2008-2017
3. County will provide education to staff on construction site run-off control by sending staff to training sessions related to erosion control materials, techniques and methods.
Partners: ESD, SWCD
Funding: \$12,000
Timeline: 2008-2017
4. Training will be provided to those County employees that are involved in activities in the field which may impact stormwater quality, including road salt and sand application, landscaping and other activities.
Partners: ESD, SWCD
Funding: \$15,000
Timeline: 2008-2017
5. Work cooperatively with local units of government for the purpose of minimizing development impacts and standardizing the specifications of their individual SWPPP's.
Partners: SWCD, townships and municipalities
Funding: \$25,000
Timeline: 2008-2017

Implementation of Impaired Waters

Goal 3 is to address the issue of impaired waters and will require the following steps:

- determine the status of the County's water resources in relation to whether they can meet their designated uses
- improve those rivers, lakes and streams that do not meet their designated uses
- protect those lakes, rivers, and streams that support their designated uses

Objective A -- Assess the ability of the County's lakes, rivers and streams to meet their designated uses.

1. Coordinate, track and analyze water monitoring for the entire County.
Partners: ESD, SWCD, Watershed Districts, City of St. Cloud, LA's
Funding: \$50,000 to \$100,000
Timeline: 2008-2017
2. Develop and annually review a priority list of lake, river and stream monitoring.
Partners: ESD, SWCD, Watershed Districts, LA's, MPCA
Funding: \$20,000
Timeline: 2008-2017
3. Seek funding for lake, river and stream monitoring.
Partners: ESD, SWCD, Watershed Districts, LA's, MPCA
Funding: \$10,000
Timeline: 2008-2017
4. Create monitoring plans of waters.
Partners: SWCD, ESD, Watershed Districts, MPCA, MN Waters, LA's
Funding: \$25,000
Timeline: 2008-2017
5. Promote volunteer monitoring through development and support of volunteer workshops
Partners: Watershed Districts, SWCD, ESD, MN Waters
Funding: \$20,000
Timeline: 2008-2017
6. Carry out monitoring programs as needed for priority waters.
Partners: SWCD, ESD, Watershed Districts, MPCA, BWSR
Funding: \$150,000, from grants
Timeline: 2008-2017
7. Submit surface water quality data to the MPCA annually to be entered into the STORET database.
Partners: ESD, SWCD, Watershed Districts

Funding: \$20,000
Timeline: 2008-2017

8. Include a summary of surface and ground water quality monitoring data in the Water Management Plan Annual Report.
Partners: ESD, SWCD
Funding: \$5,000
Timeline: 2008-2017
9. Seek funding for development of TMDL studies and plans and implementation of TMDL plan.
Partners: ESD, ESD, Watershed Districts, BWSR, MPCA
Funding: \$20,000
Timeline: 2008-2017

Objective B -- Improve those water resources that are listed as impaired and protect those that are not impaired. The Priority Concern that addresses Development Impacts contains action items that are directed towards non-agricultural erosion control and stormwater runoff management. There may be additional actions required as TMDL studies are completed. Improvement and protection measures will address loading from the contributing watersheds.

1. Support and cooperate with Watershed Districts and the MPCA on ongoing TMDL projects.
Partners: SWCD, ESD, Watershed Districts, MPCA
Funding: \$50,000
Timeline: 2008-2017
2. Seek ways to provide environmental education to all citizenry of the County. This can be partially accomplished by inviting all children of one grade to an environmental educational fest. The development of a County/regional Natural Resources Learning Center will be explored. A brochure will be developed that details all the currently available environmental learning opportunities to grade school students in the County.
Partners: SWCD, ESD, Watershed Districts, U of MN Extension Service, County Parks Department, College of St. Benedict, St. John's University, SCSU
Funding: \$100,000 from grants
Timeline: 2008-2017
3. Educate feedlot owners on proper feedlot management, including manure storage and application, for the purpose of meeting regulatory requirements. Tools to be used are field days, flyers, classes and mailings, including the Feedlot Newsletter which is sent to all permitted feedlot owners.
Partners: ESD, SWCD, MDA, NRCS, U of MN Extension Service
Funding: \$50,000
Timeline: 2008-2017

4. Provide information, technical and/or financial assistance to County landowners implementing agricultural BMP's on working lands to reduce soil erosion, protect stream banks and improve water resources.
Partners: SWCD, MDA, NRCS, ESD
Funding: \$500,000/year, primarily from grants
Timeline: 2008-2017
5. Actively promote and market federal/state/local conservation programs to targeted landowners and help prepare them for eligibility in programs such as CSP & EQIP.
Partners: SWCD, MDA, NRCS, U of MN Extension Service
Funding: \$50,000
Timeline: 2008-2017
6. Educate urban and rural landowners about proper land application of nutrients and pesticides, including the promotion of phosphorus-free fertilizer for residential use. Evaluate success of educational programs through developed assessment programs.
Partners: SWCD, ESD, MDA, NRCS, U of MN Extension, WD's, LA's, CMWEA, SCSU
Funding: \$50,000
Timeline: 2008-2017
7. Promote and market conservation programs that provide cost-share and assistance to livestock producers for the adoption of comprehensive nutrient management practices. Watersheds of impaired waters are highest priority.
Partners: SWCD, MDA, NRCS, WD's
Funding: \$50,000
Timeline: 2008-2017
8. Ensure the proper use and abandonment of manure pits.
Partners: SWCD, ESD, MDA, NRCS, WD's
Funding: \$350,000, primarily from grants
Timeline: 2008-2017
9. Continue to inspect feedlots and work with owner/operators to bring their facilities into compliance, with those feedlots that are within identified TMDL watersheds having priority.
Partners: ESD, SWCD, MDA
Funding: \$2,500,000, primarily from grants
Timeline: 2008-2017
10. Utilize the drained wetland inventory developed by Ducks Unlimited and LIDAR to identify areas within the TMDL watersheds that should be targeted for wetland restoration.
Partners: SWCD, NRCS, Ducks Unlimited
Funding: \$20,000
Timeline: 2008-2017

11. Inspect areas within watersheds of impaired waters for proper application of nutrients and review records of land application.
Partners: ESD, SWCD, MPCA
Funding: \$100,000
Timeline: 2008-2017

12. Promote and establish vegetative buffers on public and private ditches.
Partners: SWCD, ESD, Watershed Districts, NRCS, Pheasants Forever
Funding: \$100,000
Timeline: 2008-2017

13. Establish and maintain vegetative buffers in accordance with existing Stearns County Landuse and Zoning Ordinance #209 and MN Rules 6120.3300 Subpart 7. “The shore impact zone for parcels with permitted agricultural land uses is equal to a line parallel to and 50 feet from the ordinary high water level. General cultivation farming, grazing, nurseries, horticulture, truck farming, sod farming, and wild crop harvesting are permitted if steep slopes and shore and bluff impact zones are maintained in permanent vegetation or operated under an approved conservation plan (Resource Management Systems) consistent with the field office with the field office technical guides of the local soil and water conservation districts or the United States Soil Conservation Service (now referred to as NRCS).” The following is the proposed process to accomplish this goal:
 - a. 2009 – inventory County to determine ordinance compliance with permanent vegetation/conservation plan requirements within shoreland and bluff impact zones and steep slopes.
 - b. 2010 – conduct an informational/educational effort to inform all County citizens of the Stearns County Landuse and Zoning Ordinance #209 requirements for permanent vegetation.
 - c. 2011 – County staff will begin contacting at least 20% landowners per year that have been determined to be substantially out of compliance with the Stearns County Landuse and Zoning Ordinance #209 and offer technical assistance/existing program availability to rectify issues.
 - d. 2012 – begin to bring high priority lands into compliance with Stearns County Landuse and Zoning Ordinance #209 through enforcement. Areas in identified TMDL watersheds will be first priority.Partners: SWCD, ESD, Watershed Districts, NRCS
Funding: \$100,000
Timeline: 2008-2012

14. Evaluate and coordinate water quality trading for the purpose of achieving water quality improvement.
Partners: MPCA, SWCD, ESD, WD’s, LA’s public water suppliers
Funding: \$500,000
Timeline: 2008-2017

IMPLEMENTATION SCHEDULE FOR PRIORITY CONCERNS

Goal 1. Source Water Protection				
Objective A. Promote, support and participate in education directed at source water protection issues				
Action Item	Description	Responsible Agencies	Time	Focus Area
1	Promote and support Source Water Protection educational activities, in particular concerning maintenance of onsite sewage treatment systems, proper disposal of hazardous chemicals through the Household Hazardous Waste program, stormwater runoff, low impact development, BMP's during construction, and properly sealing unused wells.	ESD, SWCD, MDH, MRWA, public water suppliers, CMWEA	2008-2017	DWSMA's
2	Participate with communities on educational activities, such as water festivals and educational fairs.	ESD, SWCD, MDH, MRWA, public water suppliers, DNR, WD's, lake associations	2008-2017	DWSMA's
Objective B. Focus inspection and enforcement within shoreland and DWSMA's.				
1	Continue to inspect all feedlots, with focus on feedlots within vulnerable and highly vulnerable DWSMA's. Work with owners/operators to bring facilities into compliance. In addition, assess the potential negative effects on ground water quality that can result from manure storage and stockpiling of manure.	ESD, SWCD, MDH, MRWA, BWSR, MDA, USGS	2008-2017	DWSMA's
2	Continue to inspect all feedlots, with an emphasis on feedlots in shoreland, work with owners/operators to bring facilities into compliance, and assess the potential impacts to surface water quality from open lot runoff.	ESD, SWCD, BWSR, MDA	2008-2017	Shoreland
3	Inspect areas within DWSMA's and shoreland for proper application of nutrients and review records of land application.	ESD, SWCD, MDH, MRWA, BWSR, MPCA	2008-2017	Shoreland and DWSMA's
4	Work with MPCA to focus NPDES Phase II Construction Permit inspections in the area of St. Cloud Priority Area A DWSMA.	ESD, MPCA, SWCD, St.Cloud	2008-2017	St Cloud DWSMA

Goal 1. Source Water Protection. Objective C. Administer initiatives that advance source water protection				
1	Seek funding for Source Water Protection, including both Wellhead Protection and protection of surface water intakes.	MDH, MRWA, ESD, SWCD, BWSR, MPCA	2008-2017	DWSMA's
2	Participate, as requested, in the development and implementation of Source Water Protection Plans.	ESD, SWCD, MDH, MRWA, public water suppliers	2008-2017	DWSMA's
3	Support local efforts to conduct nitrate testing for private wells through nitrate "clinics".	MDA, SWCD, MDH, MRWA, BWSR, LA's, WD's	2008-2017	DWSMA's
4	Explore development of planning and zoning tools, such as an overlay district, which promote proactive land use planning in order to protect drinking water supplies. One of the aspects of the overlay district will include evaluation of proposed storm water infiltration projects in vulnerable WHPA's, using MDH guidance.	ESD, MDH, MRWA, Cities and Townships	2008-2009	DWSMA's
5	Explore development of additional required protective measures for aggregate mining in wellhead protection areas overlying geologically sensitive aquifers	ESD, MDH, MRWA, WD's	2008-2009	DWSMA's
Objective D. Employ land and water treatment initiatives for the protection of source water.				
1	Promote efforts to minimize the potential negative effects of unused wells by reactivating, sealing by a licensed contractor or obtaining a maintenance permit for the well.	ESD, MDH, MRWA, public water suppliers, SWCD, BWSR, WD's	2008-2017	County
2	Promote the cost-share programs for properly sealing unused wells.	ESD, MDH, MRWA, public water suppliers, SWCD, BWSR, WD's	2008-2017	County
3	Cooperate with public water suppliers to inventory those ISTS located within the vulnerable areas of the DWSMA and explore possible sources of funding to correct noncompliant systems. Support innovative approaches towards inspection programs of individual septic treatment systems.	ESD, MRWA, public water suppliers, SWCD, BWSR, WD's	2008-2017	DWSMA's

Goal 1. Source Water Protection. Objective D. Employ land and water treatment initiatives for the protection of source water, continued.				
4	Support the awarding of additional scoring points in the determination of eligibility for conservation program funding if an area is within a DWSMA.	NRCS, SWCD, MRWA, public water suppliers, BWSR, WD's	2008-2009	DWSMA's
5	Cooperate with the public water suppliers in their promotion of conservation programs..	NRCS, SWCD, MRWA, public water suppliers, BWSR, WD's	2008-2017	DWSMA's
6	Promote BMP's associated with irrigation on coarse textured soils in DWSMA's.	MDA, NRCS, SWCD, MRWA, public water suppliers, WD's, DNR	2008-2017	DWSMA's
7	Support research for the purpose of developing the use of native/alternative plants as a cellulosic source for biofuels. Support the planting of native/alternative plants as vegetative buffers.	MDA, NRCS, SWCD, MRWA, public water suppliers	2008-2012	DWSMA's
8	Explore the possibility of supplemental incentive funding to existing programs for vegetative buffers, set aside programs and BMP's. Possible sources are watershed districts, the UMRSWPP, or municipal water utility funds.	NRCS, SWCD, MRWA, public water suppliers, BWSR, WD's, lake associations, non-profits	2008-2017	County
9	Cooperate with public water suppliers with DWSMA's in their efforts to reduce agricultural chemical usage in areas where runoff and/or infiltration to the aquifer are a concern through education and incentive programs.	NRCS, SWCD, MRWA, public water suppliers, BWSR, WD's	2008-2017	DWSMA's
10	Encourage public water suppliers with Source Water Protection plans to collect household hazardous waste through the County Household Hazardous Waste program	ESD, public water suppliers	2008-2017	DWSMA's

Goal 1. Source Water Protection. Objective E. Conduct mapping and inventory initiatives for the purpose of source water protection.				
1	Cooperate with the requests of public water suppliers in mapping and inventory initiatives within DWSMA's. These initiatives may include detailed inventory of potential contaminants; mapping and documenting storm water outfalls on rivers and tributaries; mapping and documenting private and public drainage ditches; gathering information on stormsheds for storm outfalls and ditch outfalls; inventory and map areas that need buffers to reduce sediment loading.	ESD, SWCD, public water suppliers	2008-2017	DWSMA's
Goal 2. Development Impacts				
Objective A. Encourage low impact development and better site design on all new and redevelopment projects.				
Action Item	Description	Responsible Agencies	Time	Focus Area
1	Promote low impact development strategies by seeking to include in the zoning ordinance incentives for projects that use low impact development strategies	ESD, SWCD	2008-2009	County
2	Promote minimization of soil compaction around building sites	SWCD, ESD, municipalities, CMBA	2008-2017	County
3	Promote projects that can be used to demonstrate green roofs, rain gardens, pervious pavement, infiltration boulevards, etc.	SWCD, County Parks Dept., MECA, LA's	2008-2012	County
4	Clarify and strengthen the language in the General Erosion and Sediment Control Standards of the County Zoning Ordinance. Encourage municipalities to synchronize the language in their ordinances.	ESD, SWCD, municipalities	2008-2009	County
5	Include in the zoning ordinance a means of utilizing conservation design, either through incentives or mandates.	ESD, SWCD	2008-2009	County
6	Research a County-managed conservation easement program which would promote the use of conservation easements.	ESD, County Park Department, MN Land Trust	2008-2009	County

Goal 2. Development Impacts. Objective A. Encourage low impact development and better site design on all new and redevelopment projects, continued.

7	Include as part of the platting process the requirement that the first plan submitted by the applicant should be a conceptual sketch plan, with detailed existing resource and site analysis map rather than a preliminary plat. Pre-application meetings with the applicant, using the conceptual sketch plan, will be used as an opportunity to design the plat with the goal of preserving sensitive land.	ESD, SWCD	2008-2009	County
8	Utilize the DNR Green Infrastructure Mapping to identify significant natural areas, to identify corridors that serve as connections between these significant areas and to guide development to less sensitive areas.	ESD, SWCD	2008-2010	County
9	Research and implement portions of the Alternative Shoreland Standards as developed by the Governor's Initiative	ESD, DNR	2008-2009	Shoreland
Objective B. Promote land and water best management practices in shoreland				
1	Assist landowners with shoreland and riparian BMP's, such as vegetative buffers, including cost-share assistance if requested.	SWCD, WD's, DNR, ESD, lake associations, MN Waters	2008-2017	Shoreland
2	Promote disconnection of impervious surfaces from waters of the state by BMP's, using education and incentives.	SWCD, Lake Associations, ESD, WD's	2008-2017	Shoreland
3	Have a detailed countywide Natural Resource Inventory completed.	SWCD, DNR, ESD, WD's, lake associations	2008-2017	County
4	Seek to adopt language in the zoning ordinance so that construction of retaining walls in shoreland is only approved for sediment and erosion control and will not be allowed for aesthetic purposes	ESD	2008-2009	Shoreland

Goal 2. Development Impacts. Objective B. Promote land and water best management practices in shoreland, continued.				
5	Seek out and assist with storm water management and/or erosion control retrofit opportunities, particularly around lakes and rivers	SWCD, ESD, WD's, lake associations, municipalities, townships	2008-2017	Shoreland
6	Include in the County Zoning Ordinance a provision that the Stearns Pollutant Loading Model will be run for all proposed projects in shoreland and BMP's required to reduce loading to presettlement conditions or as defined by a TMDL.	ESD, SWCD	2008-2009	Shoreland
Objective C. Improve quality of stormwater runoff and manage flow, volume and direction.				
1	Work with contractors/developers on fulfilling the requirements of the NPDES.	ESD, SWCD, WD's, MPCA, CMBA	2008-2017	County
2	Educate public on impact of stormwater runoff and erosion control.	ESD, SWCD, WD's, MN Waters	2008-2017	County
3	Clarify requirements of long term operation and maintenance plans for permanent stormwater practices and develop enforcement measures that include a monitoring procedure.	SWCD, ESD	2008-2017	County
4	Revise the design standards for projects requiring storm water facility calculations. In particular, allow flexibility in the calculation for treating the discharge rates and volumes of storm water to allow for the preservation of sensitive natural resources.	ESD, SWCD	2008-2012	County
5	The County will establish a program, working with the Cities, to ensure that NPDES construction sites are adequately inspected for compliance with stormwater and erosion regulations should NPDES Pilot Program be discontinued	ESD, SWCD, MPCA	2008-2017	County
6	The County will continue to participate actively in the Central Minnesota Water Education Alliance (CMWEA).	MS4's, public water suppliers, LA's, ESD, SWCD, WD's	2008-2017	County

Goal 2. Development Impacts. Objective C. Improve quality of stormwater runoff and manage flow, volume and direction, continued.				
7	Offer education to communities and individual contractors on the storage and application of road salt and on winter snow management techniques.	SWCD, ESD, MPCA, WD's, municipalities, Lake Associations	2008-2017	County
Objective D. Better coordination of the Water Management Plan with the NPDES permit requirements of Stearns County and the MS4 communities within the County.				
1	The County will distribute information on the County's SWPPP including information on illicit discharges, erosion control, shoreline management, composting and pollution prevention and other applicable BMP's.	ESD, SWCD, CMWEA	2008-2017	County
2	County will provide education and outreach on illicit discharge and elimination.	ESD, SWCD	2008-2017	County
3	County will provide education to County staff on construction site run-off control by sending staff to training sessions related to erosion control materials, techniques and methods.	ESD, SWCD	2008-2017	County
4	Training will be provided to those County employees that are involved in activities in the field which may impact stormwater quality, including road salt and sand application, landscaping and other activities	ESD, SWCD	2008-2017	County
5	Work cooperatively with local units of government for the purpose of minimizing development impacts and standardizing the specifications of their individual SWPPP's.	SWCD, townships and municipalities	2008-2017	County
Goal 3. Impaired Waters				
Objective A. Assess the ability of the County's surface water to meet its designated uses.				
Action Item	Description	Responsible Agencies	Time	Focus Area
1	Coordinate and track water monitoring for the entire County.	ESD, SWCD, WD's, St. Cloud, LA's	2008-2017	County
2	Develop and annually review a priority list of lake, river and stream monitoring for each year's monitoring.	ESD, SWCD, WD's, LA's, MPCA, MN Waters	2008-2017	County

Goal 3, Impaired Water. Objective A. Assess the ability of the County's surface water to meet its designated uses, continued.				
3	Seek funding for lake, river and stream monitoring.	ESD, SWCD, WD's, LA's, MPCA	2008-2017	County
4	Create monitoring plans of waters.	SWCD, ESD, WD's, MPCA, MN Waters, LA's	2008-2017	County
5	Promote volunteer monitoring through development and support of volunteer workshops.	WD's, SWCD, ESD, MN Waters	2008-2017	County
6	Carry out monitoring programs as needed for priority waters.	SWCD, ESD, WD's, MPCA, BWSR	2008-2017	County
7	Submit surface water quality data to the MPCA annually to be entered into STORET.	ESD, SWCD, WD's, LA's	2008-2017	County
8	Include a summary of surface and ground water quality monitoring data in the Water Management Plan Annual Report.	ESD, SWCD	2008-2017	County
9	Seek funding for development of TMDL studies and plans and implementation of TMDL plan.	ESD, SWCD, WD's, BWSR, MPCA	2008-2017	County
Objective B. Improve those water resources that are impaired and protect those that are not impaired.				
1	Support and cooperate with Watershed Districts and the MPCA on ongoing TMDL projects.	SWCD, ESD, WD's, MPCA	2008-2017	County
2	Seek ways to provide environmental education to all citizenry in the County. This may be partially through environmental educational fests for children of one grade. The development of a County/regional Natural Resources Learning Center will be explored. A brochure will be produced that details the current environmental education opportunities.	SWCD, ESD, WD's, U of MN Ex Service, Parks, College of St. Benedict, St. John's U, SCSU	2008-2017	County
3	Educate feedlot owners on proper feedlot management, including manure storage and application, through field days, classes, flyers and mailings.	ESD, SWCD, MDA, NRCS, Ex Service	2008-2017	County

Goal 3. Impaired Water. Objective B. Improve those water resources that are impaired and protect those that are not impaired, continued.				
4	Provide information, technical and/or financial assistance to County landowners implementing agricultural BMP's on working lands to reduce soil erosion, protect stream banks and improve water resources.	SWCD, MDA, NRCS, ESD	2008-2017	County
5	Actively promote and market federal/state/local conservation programs to targeted landowners and help prepare them for eligibility in programs such as CSP and EQIP.	SWCD, MDA, NRCS, Ext Service	2008-2017	County
6	Educate urban and rural landowners about proper land application of nutrients and pesticides, including P-free fertilizer for residential use. Evaluate success of educational programs through developed assessment programs.	SWCD, ESD, MDA, NRCS, Ext Service, WD's, LA's, CMWEA, SCSU	2008-2017	County
7	Promote and market conservation programs that provide cost-share and assistance to livestock producers for the adoption of comprehensive nutrient management practices.	SWCD, MDA, NRCS, WD's	2008-2017	TMDL watersheds
8	Ensure the proper use and abandonment of manure pits.	SWCD, ESD, MDA, NRCS, WD's	2008-2017	County
9	Continue to inspect feedlots and work with owner/operators to bring their facilities into compliance, with those feedlots that are within identified TMDL watersheds having priority.	SWCD, ESD, MDA	2008-2017	TMDL watersheds
10	Utilize the drained wetland inventory developed by Ducks Unlimited and LIDAR to identify areas within the TMDL watersheds that should be targeted for wetland restoration.	SWCD, NRCS, Ducks Unlimited	2008-2017	TMDL watersheds
11	Inspect areas within watersheds of impaired waters for proper application of nutrients and review records of land application.	ESD, SWCD, MPCA	2008-2017	TMDL watersheds
12	Promote and establish vegetative buffers on public and private ditches.	SWCD, ESD, WD's, NRCS, Pheasants Forever	2008-2017	County
13	Establish and maintain stream and field vegetative buffers in accordance with existing County Zoning Ordinance and MN Rules 6120.3300 Subpart 7.	SWCD, ESD, WD's, NRCS	2008-2017	Shoreland
14	Evaluate and coordinate water quality trading for the purpose of achieving water quality improvement.	MPCA, SWCD, ESD, WD's, LA, public water suppliers	2008-2017	TMDL watersheds

ONGOING PROGRAMS

This section contains concerns which are currently being addressed by a variety of ongoing programs within the County. These are programs that are important in maintaining and preserving the quality of the water resources in the County.

Cleanup of Clandestine Drug Lab (Stearns County Ordinance #301)

This Ordinance is intended to help assure the reduction of human exposure to chemicals associated with the site of former clandestine drug lab operations at structures such as dwellings, buildings, motor vehicles, trailers, boats, recreational vehicles, manufactured homes or appliances, and including the contents thereof, as well as the air, land and water surrounding clandestine drug lab operations.

Clean Water Act Section 319 (MPCA)

Section 319 programs provide financial and technical assistance to local government and other resource managers to address nonpoint-source water pollution. Assistance is provided for the study of water bodies experiencing pollution problems, development of action plans to address the problems, and implementation of the plans to fix the problems. The local applicant must match the grants on a one-to-one basis. Section 319 funds have been used in Stearns County for unpermitted manure storage basin investigations, Manure Management Planning incentives, and Non-point BMP implementation.

Conservation Reserve Program (USDA)

CRP is a program that encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Stearns County in 2006 had 82 CRP contracts with a total of 1274 acres enrolled in the Conservation Reserve Program.

Conservation Security Program (USDA)

CSP is the newest USDA program. It is a voluntary program that rewards farmers who promote and practice good conservation stewardship on working agricultural land. There were 110 contracts in Stearns County in 2005.

Education Programs (SWCD)

SWCD conducts a number of ongoing education programs, including Certified Crop Advisory updates, Field Days, and radio shows on KASM.

Environmental Quality Incentives Program (NRCS)

EQIP is a voluntary conservation program for farmers that promotes agricultural production and environmental quality as compatible goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

Erosion Control (Stearns County Landuse and Zoning Ordinance #209)
Section 7.5 of this Ordinance addresses erosion control by requiring an erosion and sediment control plan to be submitted to and approved by ESD prior to construction of a new plat or a commercial or industrial facility, or when ESD determines a plan is necessary due to potential impacts of construction on the property or surrounding properties.

Feedlot Water Quality Program (BWSR and SWCD)
The State Feedlot Water Quality Management Cost-Share Program is administered by the BWSR in cooperation with SWCD's across the state. This includes financial and technical assistance coordination. SWCD's works with local producers to evaluate feedlots, identify water-quality problems, and develop solutions.

Feedlots (Stearns County Ordinance Landuse and Zoning Ordinance #209)
Stearns County and the MPCA have a delegation agreement which provides Stearns County with the authority to register all feedlot and manure storage areas within the County, review feedlot or manure storage permit applications, issue construction permits, inspect all feedlot and manure storage facilities and process complaints. Stearns County has approximately 2700 livestock operations. Many of the feedlot sites qualify for Minnesota's open lot agreement, which provides smaller farms extended schedules to become compliant with feedlot regulations. With the use of open-lot agreements, on-site farm inspections and permits, the feedlot department is working towards better water quality.

Floodplain and Shoreland Management (Stearns County Landuse and Zoning Ordinance #209)
Floodplain and Shoreland Management are DNR programs that are administered by the County. The Floodplain Management Program promotes and ensures sound land use development in floodplain areas in order to promote the health and safety of the public, minimize loss of life, and reduce economic losses caused by flood damages. The overall goal of the Shoreland Management program is to preserve and enhance the quality of the lakes, rivers and streams through restrictions and management of development in the vicinity of surface water.

Individual Sewage Treatment Systems (Stearns County Ordinance #198)
Stearns County is responsible for permitting and inspecting subsurface sewage treatment systems. The goal of the ISTS program is to protect the public health and the environment by adequate treatment and disposal of sewage from dwellings or other establishments not serviced by a publicly-owned treatment facility. Stearns County enforces "point-of-sale" ISTS certifications for all properties. The County has also undertaken an initiative to inspect the sewage treatment systems of lakeshore properties. To date four of the County's lakes have had all the sewage treatment systems inspected and action is being taken to bring any non-compliant systems into compliance.

Lakescaping Program (SWCD)

Lakescaping is the process of restoring (vegetating) a shoreline in order to correct an erosion problem or to improve the fisheries and water quality of the lake or river. The SWCD provides technical assistance including design, implementation and cost share.

Mining Permits (Stearns County Landuse and Zoning Ordinance #209)

Section 7.12 of this Ordinance regulates mining operations to that they shall be constructed, maintained and operated in a manner as to minimize dust and vibrations, to minimize interference with the surface water drainage outside the boundaries of the mining operation. All mining sites must be reclaimed within one year after mining operations cease.

Minnesota Milk's Environmental Quality Assurance Program

The EQA Program is a voluntary program that assists dairy producers in achieving environmental excellence in water quality, odor and air quality, soil quality and nutrient management, habitat quality and diversity, and community image.

NPDES (MPCA, ESD and SWCD)

The National Pollution Discharge Elimination System (NPDES) is a national program which is designed to prevent sediment and pollution from entering surface and groundwater. NPDES regulates the sediment and erosion resulting from construction activities which disturb over one acre of land, industrial facilities, and stormwater discharge of communities that meet a designated population threshold. Stearns County has entered into an agreement with the MPCA to assist with the implementation of the NPDES General Stormwater Permit for Construction Activity within the County. There are approximately 530 open NPDES permits in the County. The first priority is to investigate complaints and then to inspect construction areas located near lakes, trout streams, rivers and wetlands.

Public Waters Permits (DNR)

The DNR has the authority to issue or deny permits for proposed projects affecting public waters. Permits are required for any activity affecting the course, current, or cross-section of public waters.

Solid Waste Management (Stearns County Ordinance #171)

Household Hazardous Waste collections are typically held in the spring and summer throughout the County. People can bring their old, unused or unwanted paints, pesticides and anything from their homes with a hazard warning label. The County Solid Waste officer licenses the waste haulers and manages the disposal of the County's solid waste. Other provisions concerning solid waste are annual inspection of salvage yards, regulation of solid waste composting facilities, and regulation of solid waste disposal facilities and transfer stations. :

Source Water/Wellhead Protection (MDH)

The MDH administers the Source Water Protection Program. The purpose of Source Water Protection is to help prevent contaminants from entering public drinking water sources, whether the water comes from a well or from surface water. The City of St. Cloud, which draws its water from the Mississippi River, is developing a Source Water Protection Plan.

State Cost-share Program (BWSR)

The purpose of this program is to provide grants to SWCD's so they can help local landowners or land occupiers offset the costs of installing conservation practices that protect and improve water quality by controlling soil erosion and reducing sedimentation.

Storm Water Management (Stearns County Landuse and Zoning Ordinance #209)

Sections 7.21 of this Ordinance addresses storm water management by preventing or reducing, to the most practicable extent, the effect or impacts of storm water runoff and to provide for the protection of public waters and natural and artificial water storage and retention areas within the County. Soil laden runoff must be treated before entering any water body.

Subdivision (Stearns County Subdivision Ordinance #230)

This ordinance regulates the subdivision of land, some of the purposes being to guide development in order to provide adequate transportation, sewer and water, schools, parts and other services; to protect the natural beauty and topography of the County; and to encourage the wise use and management of natural resources.

Wetland Conservation Act (BWSR)

The purpose of the Minnesota Wetland Conservation Act is to achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands. In those instances in which impact to the wetland is unavoidable, the area of impacted wetland must be replaced, usually at a ratio of two to one. Stearns County is the Local Government Unit administering WCA and issues exemptions, no-loss, replacement plan and wetland banking determinations.

Wetland Regulations (USDA)

The wetland provisions of the 1985 Natural Food Security Act (known as Swampbuster) grant the NRCS the primary authority over wetlands related to agricultural lands. Swampbuster require agricultural producers to protect and maintain wetlands on their property to be eligible to receive USDA Farm Program benefits.

Wildlife Habitat Incentives Program (USDA)

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop or improve wildlife habitat on tribal and private lands. It provides both technical assistance and cost sharing to help establish and improve fish and wildlife habitat.

APPENDIX

Priority Concerns Scoping Document

**PRIORITY CONCERNS SCOPING
DOCUMENT**

**For the Stearns County Local Water
Management Plan**

Stearns County Environmental Services
Room 343, 705 Courthouse Square
Saint Cloud MN 56303

February 2007

The following Priority Concerns Scoping Document was developed in accordance with the changes to the Comprehensive Local Water Management Act; Statutes: 103B.304-103B.355. This Scoping Document identifies the priority concerns selected by the Stearns County Water Management Advisory Committee, along with a detailed account of how these concerns were identified and chosen.

INTRODUCTION

The first Stearns County Comprehensive Local Water Management Plan was adopted in 1991. Since then there have been two revisions. The current Plan was adopted in 2002 and will expire on January 31, 2008.

Stearns County is located in central Minnesota, approximately 65 miles northwest of the Twin Cities. (See attached State/County map.) Surrounding counties are Benton and Sherburne to the east; Wright, Meeker and Kandiyohi to the south; Pope to the west; and Todd and Morrison to the north. The Mississippi and Clearwater Rivers form the border on the east. Stearns is the largest County by area in the southern half of the state (14th in area overall). The total area of the County is 1,394 square miles or 892,160 acres, extending approximately 54 miles east to west and 36 miles north to south.

Stearns County contains 30 cities and 34 townships. The population is concentrated on the east end of the County, in the St. Cloud area. The County seat is Saint Cloud; with a population of approximately 59,000 it is the largest city in the County. Saint Cloud is also at the center of one of Minnesota's fastest growing metropolitan areas.

The dominant land use in the County has historically been agricultural and continues to be so. The following table illustrates the percentages of land use/land cover and the general trend. It should be noted that the data from the two time periods are derived by different methods. Both are data from the MN Land Management Information Center. The 1968-69 data was interpreted from high altitude air photos and are recorded in 40-acre parcels. The photos were taken in 1968 and 1969. The 1990's data set integrates six different source data sets to provide a simplified overall view of Minnesota's land use / cover. The MNDNR compiled 6 separate land cover and land use products that were developed during the 1990's.

Some of the differences between the two data sets are probably due to different methods of compilation. There is, however, a marked increase in cultivated land and a marked decrease in pasture. It would appear that land that had previously not been actively cultivated has been taken out of pasture and put into cultivation. This phenomenon would mean an increase in fertilization, irrigation and potential erosion of these lands. Given the high price that corn is bringing, there is a projected increase in cultivated land. The increase in urban land is fairly slight and would not be born out by what is seen visually in the County or by the amount of land annexed by the municipalities and the number of housing units that have been built. The Minnesota Planning State

Demographic Center projects that by 2030 the population will increase by 33% from 2000 to 2030. This will lead to an increase in urbanization.

Land Use	Percentage Based on 1968-69 Data	Percentage Based on 1990's Data
Cultivated	51.1	58.4
Pasture	31.8	19.7
Forested	10.1	11.5
Urban	3.3	4.6
Water	3.1	3.4
Wetland	1.2	2.1
Transportation	0.1	Not included
Extractive	-0.0	.14

PHYSICAL FEATURES OF THE COUNTY

The topography of the County in its general form is controlled by its bedrock base. The details of the landscape are due to glaciation, and to a lesser extent, stream erosion. The three major landforms created by the glaciers throughout the County are the hilly lake regions, the rolling till plains, and the relatively flat outwash plains. These features are widespread throughout the County. The hilly lake regions, however, are the most prominent in the northern and east central parts of the County.

The surface of the County's bedrock base has its highest elevation in the northwest corner where it is about 1,300 feet above sea level. It descends irregularly to the east and southeast to less than 935 feet above sea level. The lowest elevation occurs at the mouth of the Clearwater River where it enters the Mississippi River. In general, the eastern part of the County is more rolling and has steeper slopes than the rest of the County. The outwash plains in the western part of the County are nearly level.

The surface water of Stearns County includes lakes, wetlands, rivers and streams. (See attached Surface Water Resources Map.) There are 294 lakes and wetlands within the County that have an area of ten acres or more. In general, lakes situated in the hilly areas are usually deeper and somewhat smaller with more rugged surroundings. Lakes in the till or outwash plains regions, tend to be somewhat shallower with sandier beaches and bottoms

and are most likely more irregular in shape. In general, all runoff in the County flows into the Mississippi River.

Tributaries of the Sauk River drain the northwestern and central parts of the County. The North Fork and the Middle Fork of the Crow River drain the southwestern part of the County. The Mississippi River and its tributaries drain the eastern parts of the County. There are four major watershed units located in Stearns County. From largest to smallest in area they are the Sauk River, Platte-Spunk River, Crow River and the Clearwater River Watersheds.

PRIORITY CONCERNS HISTORY

The Stearns County Local Water Management planning process addressed the priority concerns as follows:

December 20, 2005: The Stearns County Board of Commissioners resolved to update the current Water Management Plan, which was last updated in 2002. The Board also resolved to request a one-year extension to January 31, 2008 so that coordination could be achieved with the update of the County Comprehensive Plan.

April 26, 2006: The Minnesota Board of Water and Soil Resources approved the request for an extension to update to January 31, 2008.

July and August 2006: As part of the process of soliciting public input for the Comprehensive Plan, five cluster meetings for townships and cities were held around the County. Some of the input related to natural resource topics that would be potentially addressed by the Water Management Plan.

October 2006: Three public open houses were held around the County to solicit input from the citizens on what should be in the Comprehensive Plan. Some of the input was on natural resource issues.

October 10, 2006: The Stearns County Environmental Services Department sent a letter indicating intent to update the plan, along with a request for input on priority concerns and a request for a copy of any water and related land resource plan. This letter was sent to all townships, incorporated cities and watershed districts within Stearns County; the adjacent counties; representatives of the MGS, DNR, MPCA, MDA and BWSR; lake associations; local legislators; Stearns County Board of Commissioners; and SWCD board members. Response was requested by November 27, 2006.

October 12, 2006: The Stearns Water Management Advisory Committee, a 12-member body of appointed citizens representing various sectors, voted to appoint an update subcommittee. The update subcommittee is composed of the following persons: Dennis Fuchs (Stearns SWCD), Wayne Cymbaluk (Stearns SWCD), Kay Cook (Stearns Water Management Advisory Committee), Jason Weirnerman (BWSR), and Susan McGuire (Stearns County Environmental Services Department). The purpose of the subcommittee

is to evaluate the progress which has been made on the goals of the current water plan, to develop a process for obtaining public input, to evaluate the public input, and to give guidance to the Water Management Advisory Committee on the selection of the priority concerns.

October 20, 2006: The subcommittee met and decided that public input for the update of the Water Management Plan will include input that has been gathered in the Comprehensive Plan process (phone survey, five township cluster meetings, three public open houses, Citizen Advisory Committee meeting). Two public meetings will be held for the Water Management Plan update, one in Melrose and one in St Cloud. An online survey will be posted on the Stearns County website.

October 23, 2006: County Water Planner and two staff from SWCD reviewed the current Water Management Plan to determine which goals had been reached, which are not feasible or no longer important, and which goals should be considered for retention in the updated plan.

October 30 2006: The update of the Comprehensive Plan receives guidance from a Citizen Advisory Committee. On October 30, 2006 the Citizen Advisory Committee addressed natural resource issues. The County Water Planner attended this meeting.

November 28, 2006: Both public meetings were legally noticed in the *Cold Spring Record*.

December 4, 2006: Online survey placed on County website. There is a link on the SWCD website directing people to the survey.

December 11, 2006: A press release was placed in the St. Cloud Times and all the other local newspapers. The press release discussed the update of the Water Management Plan, directed readers to the online survey, and publicized the public meetings. Two radio interviews with the Water Planner were also done on the same subjects. Posters advertising the public meetings were posted in public places around the County.

December 11, 2006: Subcommittee met and reviewed the priority concern input that had been received to date and brought forth their ideas on what should be a priority.

December 18, 2006: A public meeting was held in Melrose and was attended by 17 people. A brief presentation on the Water Management Plan was given, followed by open discussion of the natural resource issues in the County. Representatives from a number of lake associations, the SWCD, the Water Management Advisory Committee and the BWSR attended.

December 19, 2006: A public meeting was held in St Cloud and was attended by 14 people. The same format as the December 18 meeting was followed. Attendance included a representative from the Stearns County Board of Commissioners, the County

Planning Commission, St. Cloud Area Environmental Council, the BWSR, the Audubon Society and lake association members.

January 8, 2007: The update subcommittee met and reviewed the priority concern input and ranked the priority concerns to be presented to the Water Management Advisory Committee.

February 8, 2007: The Water Management Advisory Committee met and reviewed the draft Priority Concerns Scoping Document. A few minor revisions were suggested and subsequently incorporated.

February 14, 2007: Priority Concerns Scoping Document submitted to Stearns County Board of Commissioners for review.

OUTCOMES

The following are the issues and concerns identified by the public input process.

Agency Feedback

1. Albany Area Schools

First priority concern is public education on all water issues, i.e., watersheds, runoff, stormwater, etc. Use website, news letters and workshops. Second priority concern is native habitat restoration, particularly wetlands. Third priority concern is promotion of more educational water festivals.

2. Benton County Soil and Water Conservation District

First priority concern is to protect and enhance the quality of the shoreland along the Mississippi River. Actions needed are more restrictive zoning ordinances and purchasing of additional properties along river to set aside as natural areas.

Second priority concern is drinking water – Mississippi River. Actions needed are working together with all affected municipalities within the emergency response area to increase public education. Areas of high priority are Watab and Sauk Rapids Townships.

Third priority concern is groundwater quality and quantity. Actions needed are that new development should pay its own way by being required to purchase and retire existing water rights in exchange for permission to build.

3. City of Albany

Priority concern is flooding on the golf course by the South Two River. Construction of a retention pond south of Interstate 94 would help this problem. Also, North Lake has experienced large amounts of weed growth the past few years. Education of property owners on using zero phosphorus fertilizer may help.

4. Clearwater River Watershed District

First priority concern is inadequate wastewater treatment as a potential threat to lakes. Actions needed are education and community systems. Second priority concern is buffers along surface water. Actions needed are education and incentives. Third priority concern is rough fish migration and removal through migration barriers and removal of rough fish. Area of high priority is the Clearwater River watershed.

5. Environmental Quality Board, Department of Administration

The designated JOBZones appear to be located in areas sensitive to groundwater contamination. Suggestion was to check with MPCA, SWCD and local watershed districts on how to reduce the risk of ground water contamination associated with development in sensitive areas. Suggested that MPCA be consulted on how to plan for developments contemplated in or near impaired waters. Suggested that the DNR be consulted on planning for significant ground water using developments.

Minnesota Board of Water and Soil Resources

First priority concern is moderating the impact of new and existing urban/suburban development in high growth areas on surface and ground water resources. Some of the actions needed are identification of critical resource areas located in the outer fringe of high growth communities and development of mechanisms to protect critical water resources and maintain the ecological integrity of features such as wetlands and riparian areas. Seek methods to keep impervious surfaces to under a specified limit.

Second concern is the facility management of livestock producers to minimize the amount of waste and other materials entering the County's surface water resources. Actions needed are to identify producers in critical water resource areas and offer incentives to improve feedlot management, switch from surface water to ground water and to establish buffers between pasture areas and surface water.

Third priority concern is installation or restoration of buffers around critical water resources such as community wells, ditches and other surface water.

6. Minnesota Department of Agriculture

Top three concerns were 1) preservation of agricultural land, particularly in the western 2/3 of the County and addressing the CRP contracts that are expiring, 2) management of surface and groundwater through enactment of provisions to protect groundwater in DWSMA's, hiring a County limnologist and fulltime water management planner, and buffers along ditches in shoreland, and 3) wetland management through a comprehensive wetland management plan.

7. Minnesota Department of Health

Primary concern is source water protection.

8. Minnesota Department of Natural Resources

First priority is shoreland management – incorporation of new DNR Alternative Shoreland Standards. Second priority concern is stormwater management. Urban development near surface waters is a concern. Action needed is continuation of NPDES Phase II pilot. Third priority concern is nutrient management. Continued efforts with nutrient and runoff management are needed, particularly in agricultural areas near shoreland. The fourth priority concern is groundwater supply management. Continued

efforts are necessary to define and identify groundwater management areas throughout the County. DNR Waters has included Stearns County for an upgraded version of the Geologic Atlas that will better define what actions are needed.

9. Minnesota Pollution Control Agency

The first priority concern is Impaired Waters/Total Maximum Daily Loads. The MPCA encourages counties to identify the priority the County places on addressing impaired waters and how the County plans to participate in the development or implementation of TMDL projects; identify the pollutants causing the impairment; address the commitment of the County to submit any data it collects to MPCA and provide plans, if any, for monitoring as yet unmonitored waters; describe actions and timing the County intends to take to reduce the pollutant(s) causing the impairments.

The second priority concern is with feedlots. Recommended actions are education of producers regarding feedlot permit requirements and benefit of manure management plans; promotion of the proper use and abandonment of manure pits; proper land application of manure; proper open lot runoff management; and importance of BMP's to protect surface waters. Areas of high priority are within watersheds of impaired waters.

The third priority is stormwater. Recommended actions are education of contractors/developers on stormwater permit requirements, on effective BMP's for the control and mitigation of stormwater on sites during and after construction and on new discharges to impaired waters; requiring operation and maintenance plans for permanent stormwater ponds; and requiring Stormwater Pollution Prevention Plans prior to final plat approval. High priority areas are those that have potential to impact surface or ground water.

Fourth priority concern is protection of groundwater/drinking water sources. Water from the County drains into the Mississippi River, which provides drinking water to the Twin Cities. Also, areas of high density development have the potential to impact local groundwater/drinking water sources as many of these developments rely on individual wells and individual sewage treatment systems. Recommended actions are assessment of priority areas of concern; review development plans for future impacts; educate public and landowners on dangers of high nitrate levels in drinking water; provide well water screening opportunities. The entire County is an area of high priority.

10. Sauk River Watershed District

First priority concern is water quality education; examples given are a program for stormwater management targeted towards developers. Second priority concern is a surface water inventory. This includes quantifying storm drain discharge locations as well as determining the water quality of each discharge and developing a restoration plan. Third priority concern is storm water management, particularly regarding snow melt and spring rains. Education on manure spreading over frozen soil, sand and salt from streets, etc. All of County is priority.

11. Stearns County Soil and Water Conservation District

One set of concerns primarily centered on the results of development. Focused on the need to 1) address storm water pond infiltration in relation to ground water

sensitivity, 2) the consideration of low impact development strategies on all projects by focusing on reducing the amount of impervious surfaces created and minimization of soil compaction around building sites, 3) conduct a Natural Resources Inventory, 4) track wetland impacts, violations, exemptions, and creation through GIS, 5) create a method on proper procedure for the long term maintenance of storm water infrastructure, 6) better utilization of the Stearns County MS4 permit requirements with the Water Management Plan and other MS4 communities to reduce duplication of efforts, 7) set better design standards for projects requiring storm water calculations and 8) change zoning ordinance language so that retaining walls can be used only as a last resort for erosion control.

Second set of priority concerns has wetland restoration/preservation as first concern. All of County is of high importance. Second priority concern is stormwater runoff and buffers. Actions needed are better education, regulations, tax breaks and incentives. The third priority concern is an organized approach to preservation of natural areas and open space. The eastern half of the County is high priority now and the western half will be soon.

Other Parties

12. Citizens Advisory Committee (advisory to Comprehensive Plan update)

Concerns cited were 1) stormwater management across the board – farms, lake lots, municipalities, etc., 2) floodplains, floodways and trout streams, 3) preservation of significant, unique or sensitive natural resources, 4) preservation of natural habitat for wildlife, 5) wetland restoration.

13. Dairy Advisory Committee

First priority concern is that BMP's be followed regarding manure management; both application and storage. The DAC supports continuing education on these BMP's. The second priority concern is that those landowners who have restored wetlands, created buffer strips or filter strips, enrolled in CRP, etc., should continue to be reimbursed for costs and loss of production.

14. Greg Bechtold, Environmental Services Specialist

Priority concerns are 1) erosion control – wind and water from farmland- through minimum till/no-till, 2) buffers for tile inlets/ditches/wetland and lakes, rivers and streams, 3) stormwater and NPDES enforcement, 4) stormwater treatment, 5) preservation of natural areas such as wetlands, woods and grasslands, and 6) septic system and municipal treatment plant upgrades.

15. Dave Knafla, Environmental Services Specialist

Trout streams.

16. Lake Associations

Kings Lake Association: First priority concern is runoff. Action needed is to monitor to find the source. Second priority concern is erosion. Actions needed are funding, grants and education. Third concern is to promote clustered septic systems.

Koronis Lake Association: First concern is that any new building or development should have stringent controls on water runoff containment. The plan would be needed for any large rainfall (2-3”). Second concern is that rather than just fine someone who violates an environmental protection law, the infraction or damage or illegal construction must be removed or fixed.

Lake Maria Association: Priority concern is the pipe running from farm fields to ditch on eastside of County Road 11. Ditch feeds creek to Sauk River.

North Browns Lake Association: First priority concern is to improve water quality. Actions needed are creation of buffers, berms and holding ponds to filter runoff from agricultural operations; test septic systems on lakes and rivers for compliance; increase awareness of human impact on water resources. The area of concern is the Sauk River watershed.

Rossier/Watab Lake: First priority concern is shoreland erosion. Action needed is to eliminate high horse power boats/jet skis near shore. Second priority concern is to enforce current zoning regulations. Action needed is to critique variance/easement requests and educate elected officials and board members. Third priority concern is conservation practices – lakescaping, conservation buffers, and riparian buffers. All of County is high priority.

17. The Nature Conservancy

First priority concern is pattern tiling systems. These systems affect ground water recharge, change the soil profile, and increase water downstream. Actions needed are to prevent water drained from additional tiling to negatively impact location down stream. Research is needed to study the effects of drainage on the biodiversity of the soil profile. The North Fork of the Crow watershed and Sauk River watersheds are priority areas.

The second priority concern is ditch drainage systems being converted to large diameter tile systems. Large diameter tile systems are replacing small ditch systems that typically did not flow except under major rain events or snow melt. The large diameter tile systems do not have the vegetation that trapped the sediment in the ditches. Research is needed to see if these tile systems result in poorer water quality and/or faster rates of flow.

18. Online Survey

There were 76 responses to the online survey. Each response included ranking the top four problems/opportunities in the County. The number in parentheses indicates the number of votes received.

1. Declining Water Clarity (36)
2. Development Pressures/Impacts (35)
3. Over-application of fertilizers (33)
4. Contaminated Runoff (32)
5. Natural Habitat Destruction (23)

6. Stormwater Drainage/Management (22)
7. Destruction of wetland (21)
8. Failing Septic Systems (21)
9. Erosion (16)
10. Groundwater Contamination (16)
11. Lack of Environmental Education (12)
12. Lack of Regulation (10)
12. Other comments, Suggestions, Problems
 - Buffers around wetlands
 - Excessive ag manure application
 - Fluoride added to drinking water
 - Buffers along ditches and fields
 - Pesticides
 - Weeds

The most threatened resources and number of votes are:

- Lakes (26)
- Rivers (20)
- Wetland (20)
- Groundwater (10)

General comments from the online survey are:

More buffers around lakes. More retention ponds to reduce flooding. Two River Lake full of algae.

Horrible algae blooms in lakes. Caused by runoff from ag and shoreline management. More enforcement of current laws.

Too much development in formerly open land. Wetlands affected.

Much property tax paid by lake owners. Better lake water quality raises values and tax payments.

There are a large # of septic systems failing or directly discharging into farm drainage tile systems.

Farmers should get financial credit for establishing buffers on waterways, wetland and drain tile inlets.

Houses built right next to wetlands. Need buffers

Drain tiling is disrupting the wetlands. Farm waste is going into wetland and streams, then into lakes.

Even as little as 20' strip along any moving water that ends up in a lake can be important.

Too much fertilizer from farmers and general public. Gw contamination from the fertilizer

Conversion of Ag land to residential near lakes.

Second tier development on lakes.

Fluoride in water.

High nitrate levels. Our area is worse than 15 years ago.

Ensure farm runoff (manure, soil erosion) is managed. Find a way so there is economic benefit for farmers to manage runoff.

Want stricter regulations with more penalties for not following rules. Rules against water craft that churn up the bottom.

More strict enforcement of manure mgmt rules

Runoff from farms and feedlots with minimal barriers along water

19. Public Meetings

Attendees suggested the following items. Each attendee had three “stickies” to put behind the items they felt were most important. The number indicates the number of stickies received.

Nutrient Management Plans 8

Education 6

Shoreland buffers 5

Wetland buffers 5

Restrict development on granite bedrock -- to high water tables and general sensitivity 4

Stormwater runoff 3

Low impact development 3

Adoption of DNR Alternative Shoreland Standards 3

Financial incentives for Low Impact Development practices 3

Manure Application runoff 2

Check septic systems in shoreland 2

Manure near tile inlets 1

Development runoff 1

Inactive quarries and the water quality in the quarries 1

Holding ponds should be created so that they function as natural wetlands 1

Shoreland wetland restoration

Mandatory natural vegetation buffers around all wetlands

More protection of Type I and Type II wetlands

Required natural resource education for all Planning Commission, County Board and City Council members

Seminar on water quality issues to be held in central Minnesota

Areas of high sensitivity to ground water pollution are those with coarse soils, particularly in SW part of County and along the Sauk River

Help Sand Lake

Require County to notice all property owners on lake of request for shoreland alteration permits 1

Put more lake association people on Water Management Advisory Committee

Better enforcement of current laws

All areas of county should be in a watershed district

No more contradiction between law and agency actions (no shoreland alterations permitted)

Keep environmental/natural resource connection, i.e., wildlife corridors and contiguous woodland areas

Cluster septic systems

Groundwater protection

PRIORITY CONCERNS FOR THE STEARNS COUNTY LOCAL WATER MANAGEMENT PLAN UPDATE

Many water resource concerns and management recommendations were forwarded. After discussion and evaluation by the Water Management update subcommittee, the following priority concerns were identified to be presented to the Water Management Advisory Committee as a whole. Most of the issues that have been raised by the public input process can be addressed under the three following Priority Concerns:

- Impaired Waters
- Source Water Protection
- Development Pressures/Impacts

These priorities are appropriate for Stearns County based on the following:

- There are 23 lakes in the County that are on the 2006 Impaired Waters List, thirteen of which are impaired due to excess nutrients. Twenty-two reaches of streams and rivers have been identified as impaired, due to a combination of conditions. (See attached TMDL Map and TMDL List). The majority of the surface water in the County has not been monitored in such a way that it would be possible to determine if the water is impaired or not. Selection of Impaired Waters as a priority concern includes monitoring of surface waters and identification of impairments, determination of the source of the pollutant, actions to bring the water out of impaired status, and evaluation of the water quality to determine when the water is no longer impaired.
- Land values are affected by the water clarity as proven by the recent Bemidji State University Study, “Lakeshore Property Values and Water Quality”. Decreases in land values would potentially harm the County’s economy. Prioritization of TMDL efforts may take into consideration those areas that have high economic value to the County.
- It is essential for Stearns County to retain a healthy agricultural community while also protecting and/or restoring the County’s water resources. There are approximately 2, 800 animal feedlots in the County. In 2005 Stearns was first in the State of Minnesota in total cash farm receipts, with 77 percent of this total being from livestock production, according to data from the Minnesota Agricultural Statistics Service.
- Significant efforts to restore/improve our water resources require funding. The bulk of State funding is being directed towards those areas within a TMDL project area.
- The City of St. Cloud draws its drinking water from the Mississippi River. The rest of the County uses groundwater for its drinking water; glacial aquifers are the

primary source of groundwater in Stearns County. Source water protection in Stearns County includes both the surface water draining from the Sauk River and Platte-Spunke watersheds, and groundwater, much of which is being drawn from vulnerable aquifers.

- Significant land subdivision and platting continues around the County's lakes and streams. There were 982 construction site permits issued in 2006 by the County, 269 of which were issued in shoreland. This does not include those areas within municipal boundaries, which also are experiencing significant development in shoreland areas.
- There were 74 plats reviewed by the County Planning Commission in 2005. The amount of development within the municipalities is comparable to that which is outside the municipalities.
- The population of Stearns County, as determined by the 2000 census, is 133,166. The Minnesota Planning State Demographic Center projects that by 2030 the population will be 177,370, a 33% increase. This will accelerate development pressures.

Many of the suggested priority concerns will be included as elements of the above three identified concerns. Education of the general public, developers, contractors, and agricultural producers will be addressed as elements of all three identified concerns. Inventory of surface water inlets will be done as part of the TMDL process. Establishment of buffers around surface waters will be part of all three priority concerns. Efforts to control and mitigate the effects of storm water will be included under Development Pressures/Impacts.

The following items are issues that are recognized as valid concerns for the Local Water Management Plan. Though important, they will not be addressed in this updated version.

Some of the suggested priority concerns, such as zoning changes, preservation of natural areas and preservation of agricultural land are more appropriately addressed by the updated County Comprehensive Plan.

Completion of a County-wide Natural Resource Inventory was identified as a potential priority concern; funding for this will be explored but it will not be included as a priority concern.

Septic system evaluations and subsequent upgrading were identified by the public input. It is important for the health of the County's water resources to have sewage treatment that is compliant with current regulations. The County has enacted a point-of-sale septic certification requirement and will continue to work with interested lake associations and watershed districts that wish to pursue this project. Septic system

evaluation will be an element of the three identified priority concerns, but not a priority concern on its own.

The adoption of the DNR Alternative Shoreland Standards is important but not appropriate as a priority concern.

Some of the suggested concerns are currently being addressed by water resource agencies and will continue to be addressed, even though not listed specifically as a priority concern. Examples of this are establishment of buffers, lakescaping, nutrient and runoff management, feedlot permitting and management.

Ground water quality and quantity were identified by public input as potential concerns. Review of new plats within the County now utilizes the Nitrate-Nitrogen Probability Map, developed by MDH, and the Sensitivity of Ground Water Systems to Pollution Map, created by the MN DNR. New plats are required to drill test wells at the rate of one for each ten lots and the nitrate-nitrogen levels must be below 5 mg/l. The upgraded version of the County Geologic Atlas, currently being developed by the MN DNR, will be a valuable tool. At this point in time there have been only a few instances in the County in which ground water quality or quantity has been a problem. This concern will be re-examined for higher prioritization at the next plan update.

Utilization of GIS to track wetland impacts, violations, exemptions, and creation can be accomplished with the current County resources and will be explored.

Some of the suggested priority concerns are more appropriate to other entities, such as lake associations or watershed districts. Examples of this include installation of rough fish migration barriers and removal of rough fish and remediation of flooding problems. Similarly, control of high-speed boats is an item that would need to be addressed by a different agency.

The establishment of pattern tiling systems and conversion of ditch drainage systems to large diameter tile systems are issues that are seen as important but will not be addressed by the Water Management Plan due to budget constraints.

Monitoring of trout streams will continue to be promoted.

Other concerns will be re-examined for higher prioritization at the next plan update or addressed as unforeseen opportunities arise.

Attachments: Water Management Advisory Committee members
State/County Map
Surface Water Resources Map
TMDL Map
TMDL List

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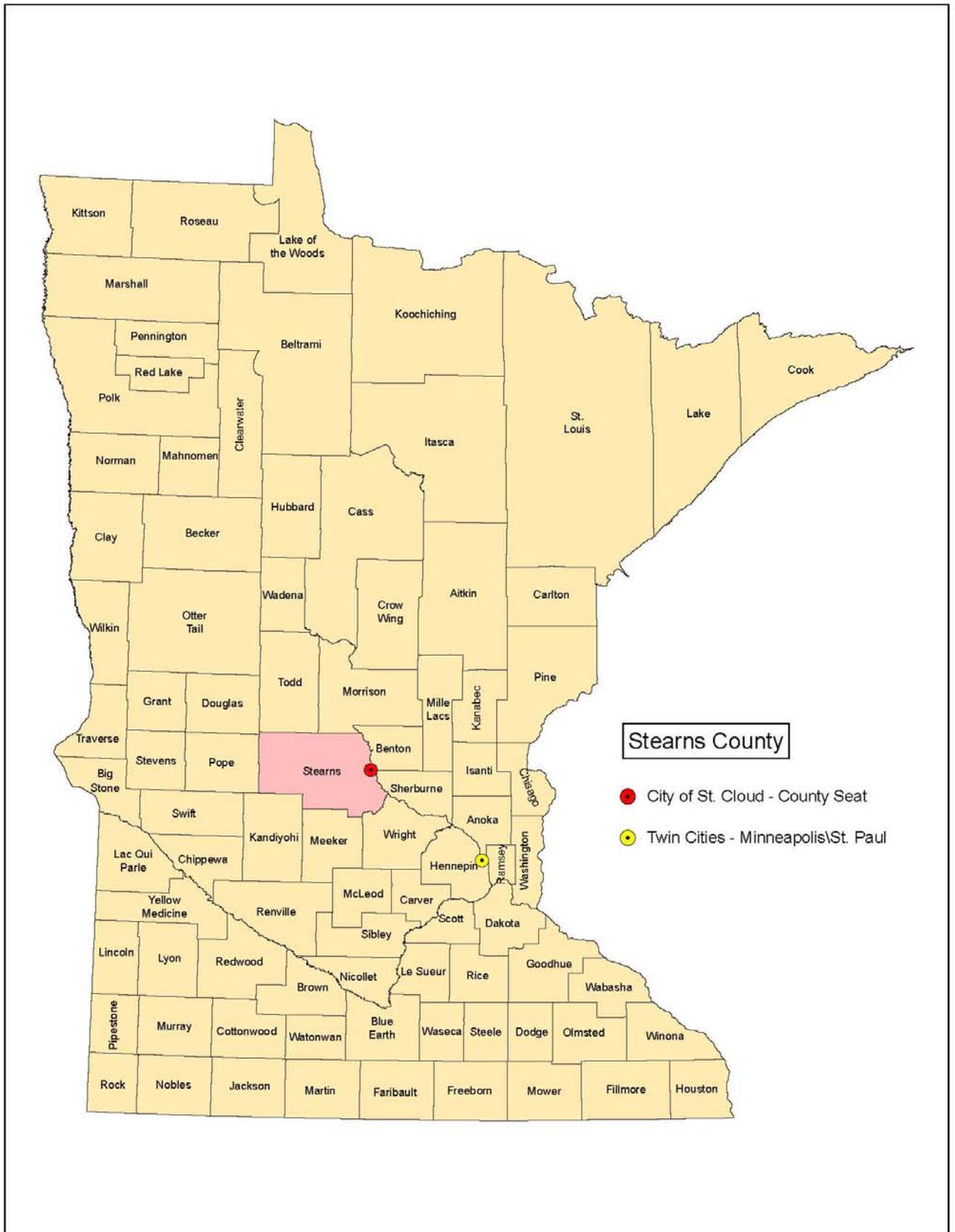
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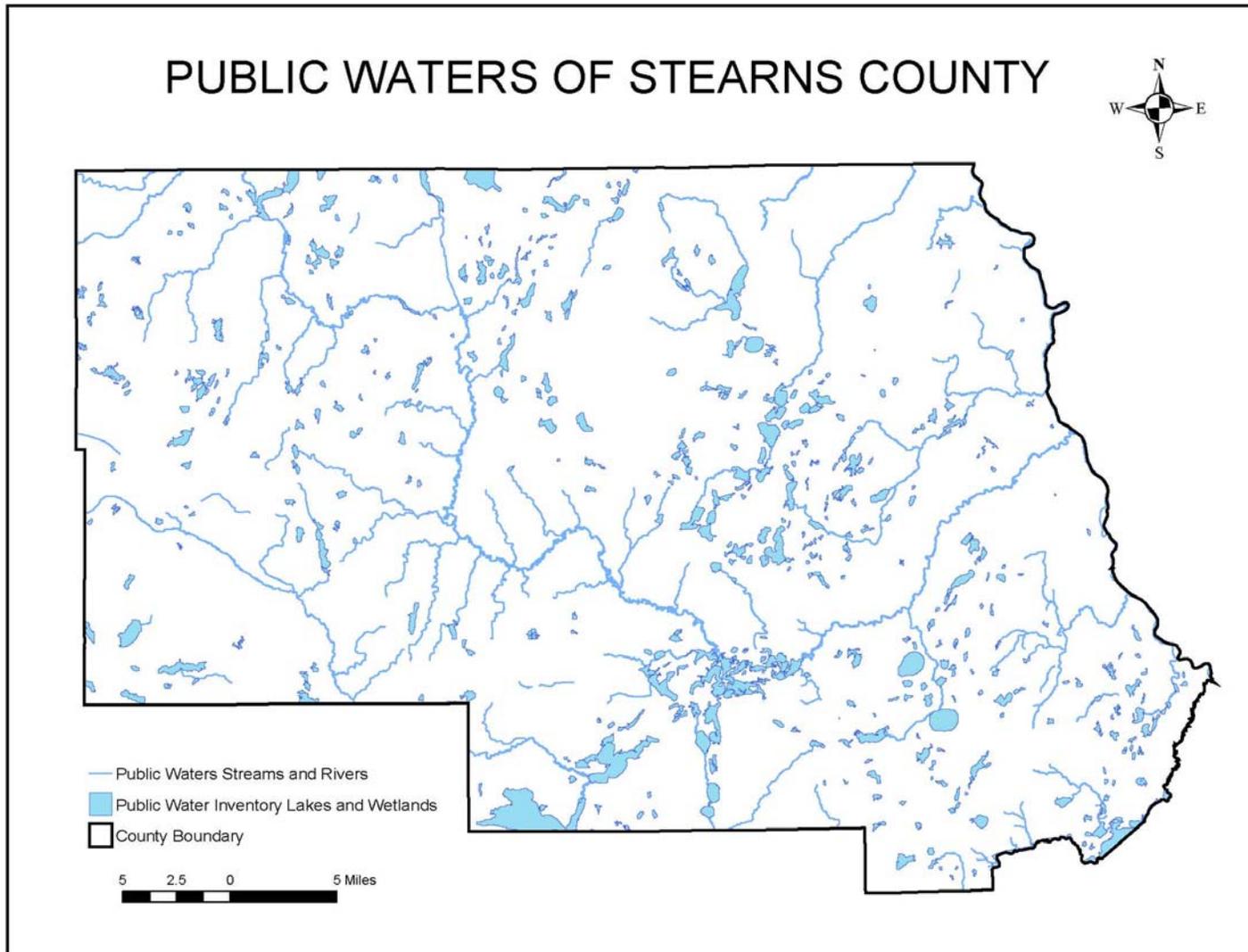
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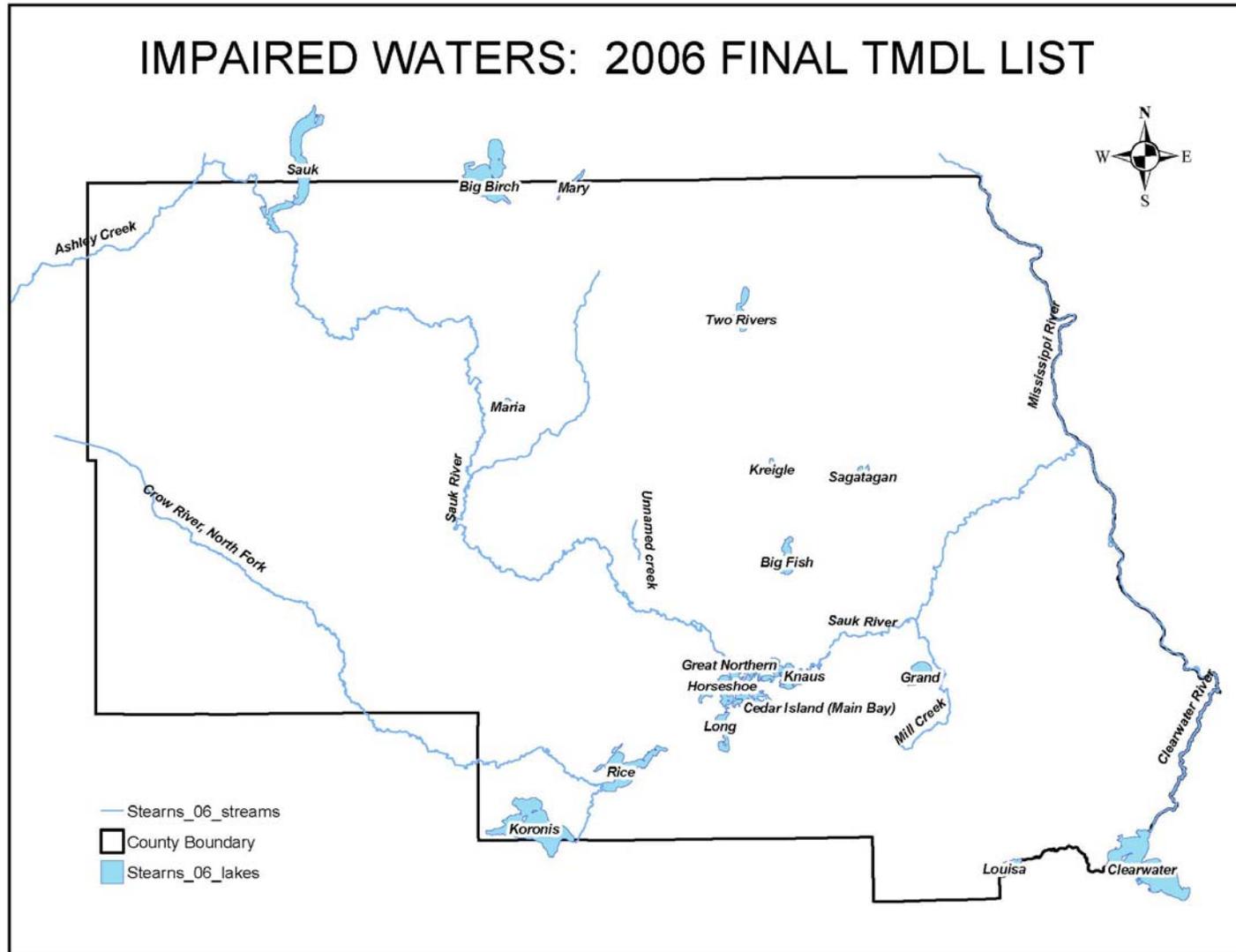
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Priority Concerns Scoping Document







Priority Concerns Scoping Document

Final 2006 TMDL List

May 8, 2006

Reach	Description	Yr ²	River ID# ⁹	Prev ID# ¹³	Lake ID# ¹⁰	Affected use	Pollutant or stressor ³	Target start ⁷	Target completion ⁷	Category ¹⁴
UPPER MISSISSIPPI RIVER BASIN, Upper Portion										
Ashley Creek	Headwaters to Sauk Lk	98	07010202-503			Aquatic life	Low Oxygen ^{7,5}	2006	2010	5C
Clearwater River	Clearwater Lk to Mississippi R	06	07010203-511			Aquatic life	Low Oxygen ^{7,5}	2008	2011	5C
Crow River, North Fork	Headwaters (Grove Lk) to Lk Koronis	06	07010204-508			Aquatic consumption	Mercury ⁷ FCA	2006	2021	5C
Getchell Creek (County Ditch 2)	Unnamed Cr to Sauk R	06	07010202-562			Aquatic life	Invertebrate IBI	2011	2021	5C
Mill Creek	Headwaters to Sauk R	06	07010202-537			Aquatic recreation	Fecal coliform	2006	2009	5C
Mississippi River	End HUC (07010104 below Swan R) to Two R	98	07010201-501			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Two R to Spunk Cr	98	07010201-509			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Spunk Cr to Platte R	98	07010201-508			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Platte R to Little Rock Cr	98	07010201-505			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Little Rock Cr to Sartell Dam	98	07010201-513			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Sartell Dam to Watab R	98	07010201-514			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Watab R to Sauk R	98	07010201-502			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	Sauk R to CSAH 7 in St Cloud	98	07010203-574	501		Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	CSAH 7 in St Cloud to St Cloud Dam	98	07010203-574	501		Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Mississippi River	St Cloud Dam to Clearwater R	98	07010203-513			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	Sauk Lk to Melrose Dam	98	07010202-507			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	Melrose Dam to Adley Cr	06	07010202-506			Aquatic life	Invertebrate IBI	2011	2021	5A
Sauk River	Melrose Dam to Adley Cr	98	07010202-506			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	Adley Cr to Getchell Cr	98	07010202-505			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	Getchell Cr to State Hwy 23	98	07010202-508			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	State Hwy 23 to Horseshoe Lk	06	07010202-557			Aquatic consumption	Mercury ⁷ FCA	2006	2021	5C
Sauk River	Knaus Lk to Cold Spring Dam	98	07010202-517			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Sauk River	Cold Spring Dam to Cold Spring WWTP	98	07010202-519			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5A
Sauk River	Cold Spring Dam to Cold Spring WWTP	02	07010202-519			Aquatic consumption	PCB FCA	2002	2015	5A
Sauk River	Cold Spring WWTP to Mill Cr	98	07010202-520			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5A
Sauk River	Cold Spring WWTP to Mill Cr	02	07010202-520			Aquatic consumption	PCB FCA	2002	2015	5A
Sauk River	Mill Cr to Mississippi R	94	07010202-501			Aquatic recreation	Fecal coliform	2004	2009	5A
Sauk River	Mill Cr to Mississippi R	98	07010202-501			Aquatic consumption	Mercury ⁷ FCA	1999	2011	5A
Sauk River	Mill Cr to Mississippi R	02	07010202-501			Aquatic consumption	PCB FCA	2002	2015	5A
Unnamed Creek	Unnamed Cr to Unnamed Cr	06	07010202-554			Aquatic life	Invertebrate IBI	2011	2021	5C
Grand	Lake or Reservoir	02			73-0055-00	Aquatic consumption	Mercury ⁷ FCA	2002	2015	5C
Schneider	Lake or Reservoir	04			73-0082-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Great Northern	Lake or Reservoir	04			73-0083-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Knaus	Lake or Reservoir	04			73-0086-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Krays	Lake or Reservoir	04			73-0087-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Bolting	Lake or Reservoir	04			73-0088-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Zumwalde	Lake or Reservoir	04			73-0089-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Sagatagan	Lake or Reservoir	02			73-0092-00	Aquatic consumption	Mercury ⁷ FCA	2002	2015	5C
Kreigle	Lake or Reservoir	02			73-0097-00	Aquatic consumption	Mercury ⁷ FCA	2002	2015	5C
Big Fish	Lake or Reservoir	98			73-0106-00	Aquatic consumption	Mercury ⁷ FCA	1999	2011	5C
Cedar Island	Lake or Reservoir	04			73-0133-01	Aquatic recreation	Excess nutrients	2004	2010	5A
Cedar Island (Main)	Lake or Reservoir	06			73-0133-01	Aquatic consumption	Mercury ⁷ FCA	2006	2021	5A

Priority Concerns Scoping Document

Final 2006 TMDL List

May 8, 2006

Reach	Description	Yr ¹²	River ID# ⁹	Prev ID# ¹³	Lake ID# ¹⁰	Affected use	Pollutant or stressor ³	Target start ⁷	Target completion ⁷	Category ¹⁴
Cedar Island (Mud Lake)	Lake or Reservoir	06			73-0133-02	Aquatic consumption	Mercury FCA	2006	2021	5C
Koetter	Lake or Reservoir	04			73-0133-03	Aquatic recreation	Excess nutrients	2004	2010	5A
Cedar Island (Koetter Lake)	Lake or Reservoir	06			73-0133-03	Aquatic consumption	Mercury FCA	2006	2021	5A
Cedar Island (East Lake)	Lake or Reservoir	06			73-0133-04	Aquatic consumption	Mercury FCA	2006	2021	5C
Two Rivers	Lake or Reservoir	98			73-0138-00	Aquatic consumption	Mercury FCA	1999	2011	5C
Long	Lake or Reservoir	04			73-0139-00	Aquatic recreation	Excess nutrients	2004	2010	5C
Horseshoe	Lake or Reservoir	04			73-0157-00	Aquatic recreation	Excess nutrients	2004	2010	5A
Horseshoe	Lake or Reservoir	98			73-0157-00	Aquatic consumption	Mercury FCA	1999	2011	5A
Rice	Lake or Reservoir	98			73-0196-00	Aquatic consumption	Mercury FCA	1999	2011	5C
Koronis	Lake or Reservoir	98			73-0200-00	Aquatic consumption	Mercury FCA	1999	2011	5C
Mania	Lake or Reservoir	06			73-0215-00	Aquatic recreation	Excess nutrients	2015	2019	5C
Mary	Lake or Reservoir	02			77-0019-00	Aquatic consumption	Mercury FCA	2002	2015	5C
Big Birch	Lake or Reservoir	98			77-0084-00	Aquatic consumption	Mercury FCA	1999	2011	5C
Sauk	Lake or Reservoir	04			77-0150-00	Aquatic recreation	Excess nutrients	2004	2008	5A
Sauk	Lake or Reservoir	98			77-0150-00	Aquatic consumption	Mercury FCA	1999	2011	5A
Cleanwater	Lake or Reservoir	98			86-0252-00	Aquatic consumption	Mercury FCA	1999	2011	5C
Louisa	Lake or Reservoir	02			86-0282-00	Aquatic recreation	Excess nutrients	2004	2009	5C

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