

Cass County PCSD

April 28th, 2016

2016 - 2026



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EXECUTIVE SUMMARY

Water planning is identifying what works best to protect and enhance Cass County's water resources. As the LGU responsible for the development and implementation of the Local Comprehensive Water Management Plan, the Cass County Environmental Services Department is committed to protecting, preserving & improving water resources in Cass County by being proactive, efficient, customer focused, organized, and innovative while being good stewards of the county's resources. The Department is committed to providing excellent customer service while helping landowners make wise choices that protect Cass County's extraordinary natural resources.

This plan has identified surface water, ground water, and aquatic invasive species as the priority concerns. Objectives and action steps have been identified for each concern and start on page 13.

This is a water resource "protection" based plan with a scope focused to the minor watershed level. Implementation strategies were developed from the priority concerns and tailored specifically for each of the 194 minor watersheds in the County. Analysis of existing, readily available data has revealed the details of these minor watersheds while showing where data-driven strategies can be implemented in a more targeted and efficient manner. This 10-year plan is unique from past versions because it:

- Focuses on Aquatic Invasive Species for the first time in plan history
- Targets specific surface and ground water resources to focus implementation efforts
- Addresses the abandonment of unmaintained Public Drainage Ditches
- Uses a watershed-based, land protection model
- Includes analysis and maps of all 194 minor watersheds in the county.

Coordination with other plans:

During the scoping process, a request was made to other LGUs and stakeholder groups for relevant plans and information related to water resource planning. No specific plans were submitted. Cass County was aware of the watershed monitoring and planning efforts of the MPCA. WRAP documents are the outcome of this effort. Cass County will incorporate any data as it becomes available into the water plan. No known conflicts exist. Also, incorporated by reference into this plan are the most current versions of the: Cass County Land Use Ordinance, Wellhead Protection Plans for Federal Dam, Remer, Hackensack, Cass Lake, Pine River and Backus. The Cass County Solid Waste Plan, Minnesota Stormwater Manual, Cass County Geologic Atlas, and NRCS Soil Survey are also hereby incorporated by reference.

Ongoing activities:

Cass County revised its Land Use Ordinance & Map in 2014 with the goal to incorporate the concerns and objectives of the Water Plan into the daily operations of the Land Services Department. This revision to the Water Plan further synchronizes the Water Plan with Department operations, which include ongoing activities including the State Wetland Conservation Act, Shoreland Management, Septic System Management and Wellhead Protection (as shown in the objectives and actions of this plan).

Water Plan Committee:

Cass County Board of Commissioners Neal Gaalswyk, Scott Bruns, Jeff Peterson, Dick Downham, and Robert Kangas.

BWSR Board Conservationist: Maggie Leach County Administrator: Robert Yochum Environmental Services Director: John Ringle Water Protection Specialist: Kelly Condiff



COUNTY PRIMER:

Water has been called Cass County's lifeblood, tourism its backbone and logging its heart. The county is comprised of 1,544,960 acres, of that 102,000 acres, or 14%, is covered by lakes, rivers, and streams. An additional 26% is covered by wetlands.

Figure 1. Land Use Table & Map (from National Land Cover Dataset, 2011)





Cass County is comprised of 15 incorporated cities, 50 organized townships. Cass County Cities and Townships





The abundance of surface water makes Cass County a destination area. From 2000 to 2014 the population in Cass County increased from 27,150 to 28,559; an increase of 5%. Much of this growth was evenly distributed in rural areas around the County's lakes. State estimates put the county's population in 2035 at 36,000, a 26% increase from today. From 2000 to 2007, total market valuations, as a whole, increased more than 100% across the County. From 2009-2013 property values decreased an average 2.99% annually. Since 2013 property values have rebounded back nearly to 2006 market valuations.

Population Density Based on number of E911 address pts added (per sq. mile)







WATER PLANNING BACKGROUND

Water management in Minnesota developed as a result of the statewide drought in the late 1970s, which caused the legislature to encourage more effort at the local level to develop and implement local water management plans to better preserve and protect water and related land resources. County water planning efforts began in earnest in the late 1980s as state funding assisted local units of government in developing their water plans. Water planning developed under the legislative authority and mandate of the Comprehensive Local Water Management Act (Minnesota Statutes, Chapter 103B). The purpose of Local Water Planning, by statute, is to:

- Identify existing and potential problems and opportunities for the protection, management, and development of water and related land resources.
- Develop objectives and carry out a plan of action to promote sound management of water and related land resources through effective environmental protection and efficient management.

The Board of Water & Soil Resources (BWSR) has oversight responsibilities to ensure that local water plans are prepared and coordinated with existing local and state efforts and that plans are implemented effectively. All parts of Minnesota have state-approved and locally adopted plans in place. These local plans focus on priority concerns, defined goals and objectives, and measurable outcomes. BWSR provides financial assistance to LGUs through the Natural Resources Block Grant.

The first water plan for Cass County was adopted in 1991, this will be its fourth update since being first adopted. The current Cass County Water Plan was adopted in 2009 and was set to expire in June of 2014. Cass County was granted a 2 year extension based on all of the major watershed monitoring being done by the MPCA. In 2009, three priority concerns were identified with the goal to protect the surface and groundwater resources of the County. Under each priority concern are action steps that specifically lay out tasks to accomplish the goal.

2009 Priority Concerns:

- 1. Groundwater protection
- 2. Surface water protection
- 3. Protect ground water quality



PRIORITY CONCERNS: SELECTION & PUBLIC INPUT PROCESS

In Sept. 2013, the Cass County Board of Commissioners adopted a resolution directing the County's Environmental Services Department to begin the process of updating the water plan. In order to develop the County's priority concerns, an online survey was developed and distributed to all townships, cities, lake associations, state government entities, citizen groups in November 2015 and required to be returned by February 1, 2016. In addition, a web link to the survey was posted on the county website for any additional public input. Approximately 50 responses were received in regards to the survey which shaped the formation of the Priority Concerns document. This survey was the only public input process utilized by Cass County due to the lack of interest at public input meetings in the past. A summary of their responses is included below. All priority concerns that were submitted are included in part, as an action item in the document. The priority concerns listed align with other state, local and regional plans that currently exist.

Priorities from Water Plan Survey Respondents



Surface Water





PRIORITY CONCERNS: GOALS, OBJECTIVES, & ACTIONS TABLE

Priority Concern: Aquatic Invasive Species

Objectives:	Action Steps:
1. Watercraft Inspections	Increase number of watercraft inspections to 20,000 annually. Increase amount of watercraft inspector trainings annually.
2. Lake Association Coordination	Coordinate boat inspections with Federal, State and LGUs Maintain a current contact list for Lake Associations. Distribute relevant news, grant opportunities, and inspection data to lake associations on a yearly basis through ACCL. Attend monthly ACCL meetings to provide a forum for open dialogue with individual lake associations.
3. Education & Outreach	Develop or utilize existing displays, presentations and promotional materials for all forum types. Development of SWCD website, social media, press releases and PSA's for publiceducation. Continue to work with surrounding counties, LLBO and the MHB on joint educational opportunities
4. Fiscal Stability	Annually educate legislators on importance of AIS funding. Investigate all funding sources for available for AIS.

Priority Concern: Surface Water Objectives:

Objectives:	Action Steps:
1. Stormwater Management	Provide technical assistance and onsite guidance to enable landowners to implement stormwater management practices. Practices could include shoreland buffers, rain gardens, rain barrels or pervious materials. Create and distribute educational materials to landowners and contractors to promote stormwater management practices. Investigate all funding sources available for stormwater management.
2. Shoreland Buffers	Provide technical assistance and onsite guidance to enable landowners to implement natural shoreline buffers. Map the current percentage of shoreline within the Shore Impact Zone that has been altered. Investigate all potential funding sources for buffer cost share.
3. Wetlands	Update County Wetland Ordinance. Increase wetland education for other county LGUs, contractors and private landowners. Inventory all existing county, township and privately owned culverts to determine functionality. Inventory and mapping of all intermittent streams and springs. Digitize all prior wetland delineations and incorporate into county data base.
4. Land Use & Development	Creation of a continuing education course for realtors, contractors and professionals through workshops or other opportunities. Measure and map impervious surface coverage in Shoreland Zone. Promote conservation easements and private forest management.

Priority Concern: Ground Water Objectives:

Objectives:	Action Steps:
1. Septic Maintenance & Inspection	Encourage landowners with septic systems to have their systems accessed for maintenance every three years. Inventory of mid-sized septic systems, develop operating plans for all. Provide leadership in administration of MN. Rules 7080-7083 and local septic ordinance. Community Cluster Systems development. Provide landowners with information on available financial assistance for septic system upgrades. Provide support for lake associations wanting to conduct lake wide SSTS sweep.
2. Cass County Groundwater Aquifer Map	Supply any necessary data or labor possible for an early completion of the Geologic Atlas.
3. Testing for Nitrates & Other Contaminants	Provide landowners with information and contacts for water testing. Creation of County wide groundwater database down to individual lot level. Make nitrate and groundwater information readily available to the public. Participate on local Wellhead Protection Planning teams.
4. Wellhead & Drinking Water Protection	Integrate Wellhead Protection Priorities into water plan implementation strategies. Update County Mapping of all active commercial groundwater extraction.
5. Sealing of Abandoned Wells	Identify and seal all abandoned wells throughout the county.
6. Solid & Hazardous Waste Disposal	Provide citizens with the economic information on the importance of recycling and solid waste management. Promote proper disposal of household hazardous waste, electronic waste, pharmaceutical and petroleum products.

PRIORITY CONCERNS: GOALS, OBJECTIVES, & ACTIONS

Priority Concern: Aquatic Invasive Species

Goal: To provide leadership in the fight against Aquatic Invasive Species by developing proactive solutions aimed at educating local citizens.

Aquatic invasive species (AIS) are non-native plants, animals, or pathogens that live primarily in water and thrive in their new environment, often out-competing native species. Well known AIS include: Zebra Mussels, Purple Loosestrife, Eurasian Watermilfoil, and Spiny Waterflea. AIS management has quickly become one of the County's greatest challenges. Although the scenario varies by lake and by species, it is clear that the easiest and most cost effective method is prevention.



Current Cass County AIS Waters

Objective 1: Watercraft Inspection

In recent years there has been an increased focus on controlling the spread of aquatic invasive species (AIS) in Minnesota by monitoring watercraft as they enter and depart from public water bodies. Although the Minnesota Department of Natural Resources (DNR) has taken the lead in watercraft inspection, the amount of man-hours and funding dedicated to this ever-increasing threat has been inadequate in slowing the spread of AIS. This has prompted Cass County to take a greater role in this fight. In 2014, the County formally initiated a watercraft access inspection program by partnering with local lake associations, townships and the Mn. DNR.

Action 1:	Increase the number of watercraft inspections done to 20,000 annually.
Action 2:	Increase frequency of watercraft inspector trainings annually.
Action 3	Coordinate inspections with Federal, State and LGU'S
Action 5.	Cass Soil and Water Conservation District
Lead:	Cass County, Association of Cass County Lakes, Mn. DNR,
Partners:	USFS, ACOE, LLBO and CCAT, Cass County.

Financial:	State and Local Funding
Duration:	Length of plan
Measurable Outcomes:	
	Host one annual workshop/open house.
	Communicate on no less than a quarterly basis
	Maintain spreadsheet

Objective 2: Lake Association and Resort Coordination

Action 1:	Maintain a current contact list for lake associations and resorts.
Lead:	Cass Soil and Water Conservation District
Partners:	Association of Cass County Lakes
Financial:	State Grants, In-kind staff time
Duration:	Length of plan

Measurable Outcomes:

Distribution of all AIS related news and data in a timely manner.

Objective 3: Education and Outreach

Education and outreach measures that will increase awareness of the threat and promote common sense prevention measures that can be effective in the fight against AIS.

- Action 1: Develop or utilize current displays, presentations and promotional materials for all media.
- Action 2: Development of SWCD website, social media, press releases and PSA's for public education.
- Action 3: Continue to work with adjacent counties, LLBO and MHB on joint regional educational projects.
- Lead: Cass Soil and Water Conservation District
- Partners: Cass ESD, U-M Extension, Mn. DNR, MHB, ACCL, U.S. Forest Service
- Financial: State Grants, In-kind staff time
- Duration: Length of Plan

Measurable Outcomes:

Annually attend or present at an AIS event. Issue at least one press release or appear on radio or TV at least once annually to promote AIS Awareness.

Objective 4: Fiscal Stability

Action 1:Educate legislators on importance of State AIS funding.Action 2:Show results annually to provide basis for continued funding.Action 3:Investigate all additional funding sources available for AIS.CassLead:Soil and Water Conservation DistrictPartners:Cass ESD, U-M Extension, Mn. DNR, MHB, ACCL. StateFinancial:Grants, In-kind staff time.Duration:Length of Plan

Measurable Outcomes:

Continuance of program Contingency Plan if state aid is inadequate or terminated.

Priority Concern: Surface Water

Goal: To maintain or improve existing surface water integrity for future generations.

Water is the focal point of Cass County. Local property owners have known of its importance for generations. The county contains 6 major watersheds, 1054 lakes, 62 miles of the Mississippi River and an additional 59 rivers combining for a total of 3,477 miles of shoreline. In recent years, the importance of this resource has expanded far beyond county borders. Aquifer depletion, accelerated by population growth in the Twin Cities metro area is forcing communities to increase their usage of the Mississippi River as a drinking water source. This practice has exponentially increased the importance of maintaining high water quality in Cass County.

Objective 1: Stormwater Management

One of the most effective ways to maintain or improve water quality in Cass County is the management of stormwater runoff. Stormwater that is not managed can have devastating consequences on the quality of lakes, streams, and rivers. Stormwater often contains oil, chemicals, excess nutrients (such as phosphorous), toxic metals, litter, and disease-causing organisms. In addition, stormwater frequently overwhelms streams and rivers, scours stream banks and river bottoms, and hurts or eliminates fish and other aquatic organisms.

- Action 1: Provide technical assistance and onsite guidance to enable landowners to implement stormwater management practices.
- Action 2: Utilize grants and other funding mechanisms to provide financial incentives for implementing stormwater management practices.
- Action 3: Expand the availability of educational materials, workshops, and network of resources for stormwater management.
- Action 4: Support scientific research and methods that promote minimal impact stormwater techniques that use natural drainage-ways and vegetated soil surfaces to convey, store, filter, and retain storm water onsite while mimicking the natural hydrology of a site.
- Action 5: Develop public and private drainage solutions that incorporate effective stormwater managementand erosion and sediment control.

Lead: Cass County Environmental Services

- Partners: Cass SWCD, U-M Extension, MPCA, MnDOT, CCAT, Mn.DNR, MECA, BWSR
- Financial: Local and State grants, In-kind staff time
- Duration: Length of Plan

Measurable Outcomes:

Work with LGU's and other groups to identify and remediate problem areas.

Provide annual total number of implemented plans across the county by various entities or groups.

Continue to educate public through the use of workshops.

Objective 2: Shoreline Buffers

Cass County contains 1054 lakes and 60 streams with over 3,477 miles of shoreline. Buffers offer an important level of run off protection that is important in maintaining high water quality and providing unique habitats for some of Minnesota's most threatened plant and animal species. Cass County has been a leader in this practice and will continue to be in the future.

- Action 1: Provide technical assistance and onsite guidance to enable landowners to implement natural shoreline buffers.
- Action 2: Map the current percentage of shoreline within the Shore Impact Zone that has been altered.
- Action 3: Investigate all funding sources for promotion and installation of Shoreland Buffers.
- Lead: Cass County ESD
- Partners: Cass SWCD, DNR, U of M Extension, MPCA, Local Lake Associations, U.S.F.S
- Financial: Local and state grants, In-kind staff time
- Duration: Length of plan

Measurable Outcomes:

- Provide annual number of newly implemented shoreland buffers throughout the county.
- Protect or restore one mile of shoreline annually.
- Minimize Loss of shoreland vegetation.
- Reprinting of the "Cass County Shoreland Guide"

Objective 3: Wetland Protection

Approximately 25% (603 sq. miles) of Cass County is comprised of wetlands. Wetlands are unique land features that act as both a sponge and filter for surface water. Once regarded as useless, wetlands are now regarded as key components to maintaining our high water quality. Wetlands throughout the county have varying amounts of protection enforced by different government agencies, federal (Clean Water Act, ACOE), state (Wetlands Conservation Act, BWSR), (Mn. DNR) and county (Cass County Wetlands Ordinance).

- Action 1: Updating the Cass County Wetland Ordinance to reflect importance of wetlands outside of the Shoreland Zone.
- Action 2: Increased accuracy of NWI mapping by incorporating existing and future wetland delineation shapefiles into county wetland GIS layers.
- Action 3: Land Use Ordinance Revision requiring building setbacks from wetlands.
- Action 4: In the winter of 2013, Cass County mapped all 200 miles of public and private drainage systems in Cass County. The vast majority of county drainage systems have not been repaired since their creation in the early 1900's. Investigate opportunities for the fiscal abandonment of non-maintained judicial or county drainage systems.
- Action 5: Inventory all existing county, township, and private culverts crossing wetland complexes to determine functionality of culverts.
- Lead: Cass County Environmental Services
- Partners: Cass SWCD, BWSR, ACOE, DNR, Cass County, CCAT, Area 8 Joint Powers Board Engineers, Private Landowners, USFS
- Financial: State Grants, In-kind staff time
- Duration: Length of plan

Measurable Outcomes:

Updated Wetland Ordinance reflecting importance of wetlands outside Shoreland Zone.

Both public and internal mapping system with updated NWI coverage.

Updated Land Use Ordinance with building setbacks to wetlands. Abandonment of portions or entire drainage ditch systems.

Working culvert database, done to Mn. DNR specs, data would be used for future replacement or elevation adjustments caused by environmental or human causes.

Objective 4: Land Use and Development

The Cass County Environmental Services Department is charged with administering the "Land Use Ordinance" in order to educate, protect, preserve, or enhance the quality of the lakes, rivers, forests, wetlands, natural land forms, and open spaces of Cass County for future generations. Common sense land use regulations that are administered by the staff allow for everyone to appreciate the exceptional scenic, recreational, agricultural and economic qualities that our clean water provides.

- Action 1: Create a continuing education course for area realtors, contractors and professionals presented through workshops and or other educational opportunities.
- Action 2: Map impervious surface coverage within 250 feet of the Ordinary High Water Level (OHWL).

In 2016, Cass County started a lakeshore research project to calculate the amount of impervious surface coverage on 11 lakes along the Boy River. Impervious surfaces are hard surfaces on a lot such a s rooftops, sidewalks, patios and driveways that don't allow water to soak into the ground. Impervious surface data was calculated using high-resolution aerial photography, property sketches and ARC GIS Modeling. The amount of impervious surface can be calculated for the entire riparian lot 250 feet landward of the OHWL. The lakes being measured correspond with the lakes that were part of the Phosphorus Sensitivity modeling done by the DNR and EOR as part of the WRAPS for the Leech Lake Watershed. The goal of the program is to determine what link exists between impervious surface coverage on the land and water quality in the lake as well as to target specific parcels for stormwater management that would help improve water quality.

Action 3: Promotion of Conservation Easements and Private Forest Management Cass County has been supportive of private land conservation efforts since it was adopted by the state as a way to make conservation less expensive to the state as well as a benefit to county landowners. In the last 3 years, Cass SWCD has enrolled over 9,000 acres of SFIA and 2C contracts as part of the Tullibee Lakes Watershed Program and put five new conservation easements on the landscape as part of the RIM Wild Rice Easement program. This program could help offset any future losses of public lands.

Action 4: Measure Water Quality Data and Assess Trends

Cass County's six major watersheds are all in various stages of having a watershed assessment being completed on them, as a part of the MPCA statewide Watershed Assessment Program. The WRAPS data that has come from these studies allows for a more defined approach to water quality data collecting. In areas that have potential problems, future water testing will gather enough data to allow for a trend analysis to be performed. The Crow Wing River WRAPS data on pages 22-26 has indicated potential areas for more water testing or projects to be done.

Lead: Cass County Environmental Services

Partners: Cass SWCD, CCAT, MPCA, Mn. DNR, MDA, MDH, LLAWF, MLT, TNC.

- Financial: State Grants, Outside funding sources, In-Kind Staff Time,
- **Duration:** Length of Plan

Measurable Outcomes:

Annual Educational Workshop that offer CEU's for Realtors and Contractors.

Complete impervious mapping coverage that will be utilized in land use decisions.

Permanent private land conservation options.

Identification of specific sources of impairments.

Removal of waterbody from impaired list.

3.3.7. (0701010607) BIG SWAMP CREEK HUC 10 Watershed: Proposed strategies and actions

Red rows = impaired waters requiring restoration; Clear rows = unimpaired waters requiring protection

					Water Quality Current				G	overn	nmen Ri	ital Unit esponsil	s wit bility	h Pr	imary		
Rank	HUC-12 Subwatershed	County Location and Upstream Influence Counties	Waterbody (ID)	Water Quality Parameter (incl. non- pollutant stressors)	Conditions (Based on data collected between 2002- 2011 for the 2014 Monitoring and Assessment Report)	Water Quality Goals / Targets	Strategies (see Table 11 for descriptions and implementation tools; see Table 12 for applicable NRCS codes)	Estimated Scale of Adoption Needed	MPCA	SWCD	NRCS	MDA	Citioc/Tourochine	Lities/ Iownsnips	Landowners Non-profits	Timeline	Interim 10-yr Milestones
							Access Control	Control cattle access to stream		•	•					20 years	Implement at least one cattle exclusion project
							Stream restoration	Restore channelized sections of stream		•						20 years	Complete at least one stream restoration project
			Big Swamp Creek/ JD2 (07010106-531)	Nutrients & Hydrology	Not assessed	improve existing	Culvert management	Improve road crossings				•		•		10 years	Assess road crossing conditions
	Goose Lake –	Carr				water quality	Dam management	Remove large beaver dams				•		•		20 years	Remove at least one dam
3	Big Swamp Creek (070101060701)	Hubbar d					Conservation easements	No net loss of forest		•			,		• •	30 years	Identify remnant stands in watershed and other areas at high risk for agricultural conversion
			Perch Lake (11082600)	Phosphorus	Unknown	Maintain or improve existing water quality	Monitoring	Conduct bimonthly monitoring of TP, Chl-a and Secchi depth during the open water season	•	•						5 years	Collect 2 years of bi- monthly TP, Chl-a, and Secchi depth measurements at deepest point
							Access Control	Control cattle access to stream		•	•					20 years	Implement at least one cattle exclusion project
						Maintain ar	Stream restoration	Restore channelized sections of stream		•			,			20 years	Complete at least one stream restoration project
3	Big Swamp Creek (070101060702)	Wadena Cass	Big Swamp Creek/ JD2 (07010106-531)	Nutrients & Hydrology	Not assessed	improve existing	Culvert management	Improve road crossings						•		10 years	Assess road crossing conditions
						water quality	Dam management	Remove large beaver dams						•		20 years	Remove at least one dam
							Conservation easements	No net loss of forest		•			,		• •	30 years	Identify remnant stands in watershed and other areas at high risk for
									1	1	1				1		agricultural conversion

3.3.8. (0701010608) CAT RIVER – CROW WING RIVER HUC 10 Watershed: Proposed strategies and actions

Red rows = impaired waters requiring restoration; Clear rows = unimpaired waters requiring protection

					Water Quality Current				Gov	ernn	nenta Res	l Units ponsibi	with Prir lity	nary		
Rank	HUC-12 Subwatershed	County Location and Upstream Influence Counties	Waterbody (ID)	Water Quality Parameter (incl. non- pollutant stressors)	Conditions (Based on data collected between 2002- 2011 for the 2014 Monitoring and Assessment Report)	Water Quality Goals / Targets	Strategies (see Table 11 for descriptions and implementation tools; see Table 12 for applicable NRCS codes)	Estimated Scale of Adoption Needed	MPCA	SWCD	NRCS	MUA DNR	Cities/Townships	Non-profits	Timeline	Interim 10-yr Milestones
5	Yaeger Lake (070101060801)	Wadena	All lakes and streams	Nutrients & Hydrology	Not applicable	Maintain or improve existing water quality	Culvert management	Improve Problem, Poor and Fair road crossings in the watershed: Problem crossing at the Trib to Yeager Lake at CSAH 23. Poor Crossings on Trib to Yeager Lake at CR 13, Trib to Crow Wing River at CR 150. Fair crossings at Yeager Lake Outlet at CR 15, and Jim Cook Lake Outlet at CR 150.				•	•		10 years	Contact local road authority regarding needed road crossing improvements
							Groundwater management	Protect groundwater levels, quality, and contribution to surface water features		•		•			30 years	No net decline and no new contamination
5	Burgen Lake (070101060802)	Wadena Hubbar	Crow Wing River	Nutrients & Hydrology	Not assessed	Maintain or improve existing	Culvert management	Improve one poor road crossing over Trib to Crow Wing River at CR 110.				•	•		10 years	Contact local road authority regarding needed road crossing improvements
		d Cass				water quality	Wetland restoration	Restore wetlands in the watershed		•	•	•		,	20 years	Assess condition of wetlands in the watershed
							Groundwater management	Protect groundwater levels, quality, and contribution to surface water features		•		•			30 years	No net decline and no new contamination
3	Town of Huntersville – Crow Wing River	Wadena Hubbar d Cass	Crow Wing River (07010106-516)	Fish IBI, invert IBI, DO, turbidity,	FS for fish IBI and turbidity; IF for DO; NA for invert	Maintain or improve existing	Culvert management	Improve one fair road crossing on Trib to Crow Wing River at 229 th Ave (Twp 182)				•	•		10 years	Contact local road authority regarding needed road crossing improvements
	(070101060803)	u cass		E. coli	IBI and <i>E. coli</i>	water quality	Access Control	Control cattle access to stream		•	•				20 years	Implement at least one cattle exclusion project
							Stream restoration	Restore channelized sections of stream		•		•			20 years	Complete at least one stream restoration project
					ES for fish IRI-IE		Groundwater management	Protect groundwater levels, quality, and contribution to surface water features		•		•			30 years	No net decline and no new contamination
3	Cat River (070101060804)	Wadena Otter Tail	Kitten Creek (07010106-546)	Fish IBI, invert IBI, DO, turbidity, <i>E. coli</i>	for DO and turbidity; NA for invert IBI and <i>E.</i> <i>coli</i>	Maintain or improve existing water quality	Culvert management	Improve the problem, poor and fair road crossings: Problem crossing at 119 th Ave (Twp 240). Poor crossings at 159 th Ave (Twp 213). Fair crossings at 3 crossings on 310 th St (Twp 87).				•	•		10 years	Contact local road authority regarding needed road crossing improvements

					Water Quality Current				Gover	nmen Re	tal Uni esponsi	ts with bility) Prim	ary		
Rank	HUC-12 Subwatershed	County Location and Upstream Influence Counties	Waterbody (ID)	Water Quality Parameter (incl. non- pollutant stressors)	Conditions (Based on data collected between 2002- 2011 for the 2014 Monitoring and Assessment Report)	Water Quality Goals / Targets	Strategies (see Table 11 for descriptions and implementation tools; see Table 12 for applicable NRCS codes)	Estimated Scale of Adoption Needed	MPCA SWCD	NRCS	MDA	DNR Cities/Townshins	Landowners	Non-profits	Timeline	Interim 10-yr Milestones
							Stream restoration	Restore channelized sections of stream	•			•			20 years	Complete at least one stream restoration project
							Access Control	Control cattle access to stream	•	•					20 years	Implement at least one cattle exclusion project
							Riparian buffers	25% increase in amount of buffers	•				•	•	20 years	Increased size and amount of buffers
				Bacteria	Impaired for F		Ordinances	Put ordinances in place to reduce poor applications of septage by 100% of pumpers				•			5 years	Review ordinances and current practices of septage land application
			Cat River	(<i>E. coli</i>) Fish IBI,	<i>coli;</i>	Monthly geometric	Groundwater management	Protect groundwater levels, quality, and contribution to surface water features	•			•			30 years	No net decline and no new contamination
			(07010100-544)	invert IBI, DO, turbidity	IBI and turbidity; IF for DO	126 org/100mL	Manure management	Address 50% of identified problems with manure management BMPs	•	•			•		15 years	Conduct windshield survey to identify manure problems
							Culvert management	Improve the problem and poor road crossings: Problem crossings at Snowmobile Trail and 318 th St (Twp 89). Poor crossings at CR 146, CSAH 13, 159 th Ave (Twp 213), 179 th Ave (Twp 207), Trib to Cat River ar CSAH 13 and 159 th Ave (Twp 213).				• •			10 years	Contact local road authority regarding needed road crossing improvements
						Maintain or	Culvert management	Improve fair road crossings of Beaver Creek at CR 139 and Trib to Beaver Creek at CSAH 12				• •			10 years	Contact local road authority regarding needed road crossing improvements
5	Beaver Creek (070101060805)	Wadena Cass	Beaver Creek (07010106-530)	Nutrients & Hydrology	Not assessed	improve existing water quality	Access Control	Control cattle access to stream	•	•					20 years	Implement at least one cattle exclusion project
							Stream restoration	Restore channelized sections of stream	•			•			20 years	Complete at least one stream restoration project
3	City of Nimrod – Crow Wing River (070101060806)	Wadena Cass	Crow Wing River (07010106-515) Crow Wing River (07010106-513) Little Swamp Creek (07010106-581)	Fish IBI, invert IBI, DO, turbidity, <i>E. coli</i>	FS for fish/invert IBI, DO and turbidity; IF for <i>E.</i> <i>coli</i> FS for fish/invert IBI, turbidity, and <i>E. coli</i> ; IF for DO Not assessed	Maintain or improve existing water quality	Culvert management	Improve Problem, Poor and Fair road crossings: Problem crossing at the Trib to Crow Wing River at 294th st (Twp 73). Poor Crossings on Little Swamp Creek at 259th Ave (Twp 165), Two separate trib to Crow Wing River at CR 139 and CR 138. Fair crossings on multiple Trib to the Crow Wing River at CR 140 x 3, Cr				• •			10 years	Contact local road authority regarding needed road crossing improvements

					Water Quality Current				G	overi	nmen Ri	ital Un espon	its w sibilit	vith P ty	Primary	imary					
Rank	HUC-12 Subwatershed	County Location and Upstream Influence Counties	Waterbody (ID)	Water Quality Parameter (incl. non- pollutant stressors)	Conditions (Based on data collected between 2002- 2011 for the 2014 Monitoring and Assessment Report)	Water Quality Goals / Targets	Strategies (see Table 11 for descriptions and implementation tools; see Table 12 for applicable NRCS codes)	Estimated Scale of Adoption Needed	MPCA	SWCD	NRCS	MDA	DNR	Cities/Townships	Landowners Non-profits	Timeline	Interim 10-yr Milestones				
							Riparian buffers	25% increase in amount of buffers		•			•		• •	20 years	Increased size and amount of buffers				
							Erosion Control	Restore Eroded Streams		•			•			10 Years	Conduct Stream Geomorphic Assessment				
			Loon Lake	Phoenborus	Growing Season	Maintain or	In-lake management	Improve in-lake biological community and/or reduce internal loading	•	•						20 years	Assess in-lake biological health and identify internal loading risks				
			(11022600)	Phosphorus	ppb	water quality	Shoreline protection	50% of landowners implement Shoreland BMPs		•					•	20 years	All shoreland residents receive shoreland BMP information				
			All lakes and streams	Nutrients & Hydrology	Not applicable	Maintain or improve existing water quality	Increase forest acreage	Add forest acreage (adding 12,399 acres would achieve 75% of watershed in forested landscape); Focus on high value uplands					•			50+ years	No net loss of forest				
							Access Control	Control cattle access to stream		•	•					20 years	Implement at least one cattle exclusion project				
1	Stony Brook	Cass			Impaired for E.		Manure management	Address 50% of identified problems with manure management BMPs		•	•				•	15 years	Conduct windshield survey to identify manure problems				
	(070101061002)		Stoney Brook (07010106-698)	Fish IBI, invert IBI, DO, turbidity,	<i>coli</i> FS for fish/invert	Monthly geometric average <i>E. coli</i> <	Ordinances	Put ordinances in place to reduce poor applications of septage by 100% of pumpers						•		5 years	Review ordinances and current practices of septage land application				
				E. coli	IBI, and turbidity; IF for DO	126 org/100mL	Culvert and dam management	Restore stream connectivity					•	•		20 years	Assess stream crossings and connectivity				
							Groundwater management	Limit groundwater appropriations		•			•			30 years	No net decline and no new contamination				
							Riparian buffers	25% increase in amount of buffers		•					• •	20 years	Increased size and amount of buffers				
	Rush Brook	6	All lakes and streams	Nutrients & Hydrology	Not applicable	Maintain or improve existing water quality	Increase forest acreage	Add forest acreage (adding 1,585 acres would achieve 75% of watershed in forested landscape); Focus on high value uplands					•			50+ years	No net loss of forest				
4	(070101061003)	Cass	Rock Lake (11032400)	Phosphorus	Growing Season Average TP = 21	Maintain or improve existing	In-lake management	Improve in-lake biological community and/or reduce internal loading	•	•						20 years	Assess in-lake biological health and identify internal loading risks				
					ppb	water quality	Septic system management	Upgrade all failing septics		•				•	•	10 years	Inspect all shoreline septic systems				
3	Home Brook (070101061004)	Cass	All lakes and streams	Nutrients & Hydrology	Not applicable	Maintain or improve existing water quality	Increase forest acreage	Add forest acreage (adding 14,979 acres would achieve 75% of watershed in forested landscape); Focus on high value uplands					•			50+ years	No net loss of forest				

					Water Quality Current				Gover	nment Re	tal Units sponsib	with Prim ility	ary		
Rank	HUC-12 Subwatershed	County Location and Upstream Influence Counties	Waterbody (ID)	Water Quality Parameter (incl. non- pollutant stressors)	Conditions (Based on data collected between 2002- 2011 for the 2014 Monitoring and Assessment Report)	Water Quality Goals / Targets	Strategies (see Table 11 for descriptions and implementation tools; see Table 12 for applicable NRCS codes)	Estimated Scale of Adoption Needed	MPCA SWCD	NRCS	MDA DNR	Cities/Townships Landowners	Non-profits	Timeline	Interim 10-yr Milestones
			Lake Margaret (11022200)	Phosphorus	Growing Season Average TP = 94	TP < 60 ppb	Please refer to the TMDL imp http://www.pca.state.mn.us, projects/upper-mississippi-ri	lementation plan for this lake, av /index.php/water/water-types-ar iver-basin-tmdl/project-lake-mar	ailable fro nd-progra garet-exce	om the ms/mi ess-nu	Lake M Innesota trients.h	argaret – I Is-impaireo Itml	Excess	Nutrients TN ers-and-tmdl	/DL website: s/tmdl-
							Access Control	Control cattle access to stream	•	•				20 years	Implement at least one cattle exclusion project
					Impaired for E.		Manure management	Address 50% of identified problems with manure management BMPs	•	•		•		15 years	survey to identify manure problems
			Corey Brook (07010106-700)	Fish IBI, invert IBI, DO, turbidity.	<i>coli</i> FS for fish/invert	Monthly geometric average <i>E. coli</i> <	Ordinances	Put ordinances in place to reduce poor applications of septage by 100% of pumpers				•		5 years	Review ordinances and current practices of septage land application
			(0/010100 /00)	E. coli	IBI, and turbidity; IF for DO	126 org/100mL	Culvert and dam management	Restore stream connectivity			•	•		20 years	Assess stream crossings and connectivity
							Groundwater management	Limit groundwater appropriations	•		•			30 years	No net decline and no new contamination
					Impaired for <i>E.</i> <i>coli</i>		Riparian buffers	25% increase in amount of buffers	•			•	•	20 years	Increased size and amount of buffers
							Access Control	stream	•	•				20 years	cattle exclusion project
			Home Brook				Manure management	problems with manure management BMPs	•	•		•		15 years	survey to identify manure problems
				Fish IBI, invert IBI,		Monthly geometric average <i>E. coli</i> < 126 org/100mL	Culvert and dam management	Restore stream connectivity			•	•		20 years	Assess stream crossings and connectivity
			(07010106-524)	DO, turbidity, <i>E. coli</i>	FS for fish/invert IBI, and turbidity;		Groundwater management	Limit groundwater appropriations	•		•			30 years	No net decline and no new contamination
					IF for DO		Ordinances	Put ordinances in place to reduce poor applications of septage by 100% of pumpers				•		5 years	Review ordinances and current practices of septage land application
							Riparian buffers	25% increase in amount of buffers	•			•	•	20 years	Increased size and amount of buffers
							Increase forest acreage	Add forest acreage (adding 14,370 acres would achieve 75% of watershed in forested landscape); Focus on high value uplands			•			50+ years	No net loss of forest
		Crow Wing		Nutrionto 9		Maintain or	Access Control	Control cattle access to stream	•	•				20 years	Implement at least one cattle exclusion project
2	(070101061005)	Cass	All lakes and streams	Nutrients & Hydrology	Not applicable	improve existing water quality	Shoreline protection	50% of landowners implement shoreland BMPs	•			•		20 years	All shoreland residents receive shoreland BMP information
							Septic system management	Upgrade all failing septics	•			•		10 years	Inspect all shoreline septic systems
							Conservation easements	Protect undeveloped land	•			•	•	30 years	Prioritize undeveloped tracts of land for conservation

Priority Concern: Ground Water

Goal: To maintain a safe, plentiful and clean source of water for tomorrow.

Cass County is blessed with an abundance of groundwater. It is estimated that over 70% of Minnesotans use groundwater as their source of drinking water. Other users of groundwater include irrigation, cooling, power generation, extractive use operations, and other industrial uses. Users of over 10,000 gallons per day or 1 million gallons per year are regulated by the Minnesota Department of Natural Resources. See Figure on the next page for a map of these locations in Cass County.

In the winter of 2104, Cass County began a well inventory as part of an agreement to have a Geologic Atlas completed for Cass County. In August 2015, Cass County completed locating and inventory of nearly 10,000 private well locations throughout Cass County. Completion allows for the Mn. Geologic Survey to start its bedrock borings. The completion of this project will generate a comprehensive mapping of aquifer and aggregate supply.

Wise stewardship of this resource is of the utmost importance, especially since much of Cass County has sandy soils that allow water (and contaminants) to infiltrate from the surface to the groundwater relatively quickly. Spills and leaks from underground petroleum fuel tanks are common sources of soil and groundwater contamination. Chlorinated cleaning solvents are another significant source of contaminants. Many of these manmade or refined organic compounds, referred to as Volatile Organic Compounds (VOCs), are common in commercial and household products. High nitrogen content fertilizers such as ammonia are a source of nitrate groundwater contamination. Agricultural pesticides and herbicides are additional concerns for potential groundwater contamination. The newest threat to groundwater is the use of synthetic hormones and medications, which are unable to be broken down by standard SSTS systems. Poorly functioning septic systems can also contribute excess nitrogen and phosphorus to the soil and groundwater.

In addition to the land uses of an area, the potential for contamination is influenced by the surficial or "surface" geology. Since water moves more rapidly through sandy soil, shallow sand-point wells are more susceptible to contamination than deep drilled wells. Many deeper aquifers have an aquitard layer that limits water movement from upper aquifers. Much of the region around Cass County's lakes has a surficial sand aquifer (and thus, many shallow wells). Water table depths in this area are often less than 25 feet. In certain areas within this surficial sandy layer, there is a deeper aquifer below.



Objective 1: Septic System Maintenance and Inspection

Over 25 percent of Minnesota households use on-site sewage treatment systems, commonly referred to as septic systems, to treat their wastewater. Cass County has over 22,000 individual septic systems, which ranks fifth statewide. It also has 150 resorts and 50 restaurants that all have mid-sized septic systems. Cass County has averaged approximately 300-350 septic system permits per year, over the past 5 years. One-third of those are for septic system upgrades. While septic systems are designed and installed by licensed professionals to meet the needs of individual sites, homeowners are responsible for the system's operation and maintenance. Septic failure is often due to the lack of maintenance after a system is installed or the system is operated beyond design sizing. In the typical system, raw sewage is collected by the plumbing in the home and delivered to the septic tank. There the light solids float to the top, forming a scum layer, and the heavy solids sink to the bottom, forming sludge. In the tank, organic solids such as food particles and human waste are anaerobically decomposed by millions of naturally occurring bacteria. The septic tank delivers the partially treated liquids, or effluent, to the soil treatment area for aerobic treatment. Effluent contains pathogens, nutrients, and some fine solids. A thin layer of fine solids, dead bacteria, and soil bacteria, called a biomat, forms naturally where the effluent enters the soil. The biomat restricts the flow sufficiently to keep the soil beneath unsaturated. The unsaturated soil contains oxygen which allows aerobic bacteria to live and destroy pathogens. These air spaces also force nutrients such as phosphorus and sodium to come in direct contact with soil particles to which they become attached. A portion of the nitrogen passes through into the groundwater. After passing through the unsaturated soil, the now harmless treated water evaporates into the air or returns to the soil and groundwater system.

- Action 1: Encourage landowners with septic systems to have their systems maintained every three years.
- Action 2: Encourage all owners of mid-sized systems to implement operating permits, which have

continuous maintenance and monitoring.

- Action 3: Provide leadership for administration of septic code (Minnesota Rules Chapter 7080-7083) and the Cass County Septic Ordinance.
- Action 4: Identify areas for potential centralized wastewater treatment options where applicable.
- Action 5: Provide landowners with information on financial assistance for septic system upgrades.
- Action 6: Provide support to lake associations to conduct lake wide SSTS compliance inspections sweeps.
- Lead: Cass County Environmental Services
- Partners: Cass Soil & Water Conservation District, ACCL, MPCA, BWSR, University of Minnesota Extension, Region Five Development Commission, Local Septic Professionals, Cass County Cities, Townships
- Financial: Local & state grants, In-kind staff time.
- Duration: Length of plan

Measurable Outcomes:

Track septic installs, upgrades, and maintenance as part of all land use permits.

Inventory all septic systems over 2500 gallons per day flow, and implement operating permits for them on a county wide basis.

Adopt a new septic system ordinance and communicate changes through septic-related workshops every other year.

Where possible eliminate individual SSTS systems and change to a community cluster system.

Upgrade 5-10 failing systems for low-income residents annually. Have all lakes with associations conduct septic sweeps.

Objective 2: Cass County Groundwater Aquifer Map

Action: 1 Supply any and all necessary data or labor necessary to promote early completion of Geologic Atlas.

Lead: Cass County Environmental Services

Partners: Cass County Land Department, Mn. Geologic Society

Financial: State and Local funding, In-Kind Labor

Duration: Completion of Groundwater Aquifer Map.

Measurable Outcomes:

Complete Map of Cass County Groundwater Aquifers

Utilization of map in decision making process.

Objective 3: Well Testing Database and Mapping of Contaminants

Nitrates are a common contaminant found in many wells in Minnesota. Too many nitrates in drinking water can cause serious health problems for infants, including "blue baby syndrome" (or methaemoglobinemia). Nitrates in the environment come from decomposition of plants and animal wastes. People also add nitrates to the environment in the form of fertilizers. Although natural nitrate levels in Minnesota are generally quite low, elevated levels often occur in agricultural areas where nitrate sources are often concentrated. Nitrates are tasteless and odorless, so routine testing is important.

Action1:	Provide landowners with information and contacts for water testing.
Action 2:	Creation of a County wide groundwater database down to the individual lot level.
Lead:	Cass County Services Department
Partners:	Department of Agriculture, MPCA, Cass Soil and Water Conservation District, MDH
Financial:	State and Local Funding, In-Kind Staff time.

Duration: Length of plan

Measurable Outcomes:

Maintain fact sheets, supply well testing kits for independent lab, information online. Provide annual report and map that summarizes the year's well testing results.

Objective 4: Wellhead Protection

- Action 1: Participate on local Wellhead Protection Planning teams.
- Action 2: Update County Mapping of Wellhead Protection Areas.
- Action 3: Integrate wellhead protection priorities into water plan strategies.
- Lead: Cass County Environmental Services
- Partners: Cass SWCD, Municipalities
- Financial: State and Local Funding, In-kind Labor

Duration: Length of Plan

Measurable Outcomes:

Attend Wellhead Protection Meetings on a regular basis. Updated county-wide map of wellhead protection areas. Map Wellhead Priorities Areas





Objective 5: Well Sealing

Cass County is home to 22,726 non-municipal addresses, and only 15,600 known well locations. A large percentage of these locations have one or more wells located on the property. The large scale development that took place in the early 2000's has left an unknown number of abandoned or unused wells throughout the county. If a landowner has well that is not in use and does not have a "Water Well Maintenance Permit", or the well poses a threat to health or safety, Minnesota law requires that you must have the well sealed. If your well appears to be filled or capped, but you learn it was improperly sealed, the homeowner is responsible to have the well properly sealed by an MDH licensed well contractor. Once fully sealed, the contractor is required to submit a "Well and Boring Sealing Record" to MDH and landowner. Cass SWCD has a cost-share program available throughout the county to help landowners with well sealing.

Action 1: Promote the SWCD Well Sealing Program.

Action 2: Creation of county wide well location map.

Lead: Cass County Environmental Services

Partners: Cass SWCD, MDH, U.S. Forest Service

Financial: State funding, Local In-kind or cash match

Duration: Length of Plan

Measurable Outcomes:

Cost sharing 5-10 well sealings annually. A complete map of all wells in Cass County.



Objective 6: Solid & Hazardous Waste Disposal

Household hazardous waste, business and electronic waste, old prescription drugs, used oils, and many other common products should be properly disposed of, rather than simply dumping them into the environment or down the drain. If disposed of inappropriately, they may contaminate soil, ground water or surface water, and air quality. The first option should always be to reduce, reuse, or recycle it; if no other options are available then they must be properly disposed of. Many of these items are banned from landfills. Cass County maintains a "Solid Waste Management Plan" that addresses the solid waste management system available to manage all forms of solid waste. The County in 1991 began an aggressive two part approach to deal with solid waste; adequate infrastructure and an educational program. In 2011, Cass County initiated a used pharmaceutical "Take it to the Box" program. Four secure used pharmaceutical return containers are stationed at various law enforcement stations across the county. Pharmaceuticals and medical waste introduced to ground water via septic systems has been shown to be of serious environmental concern.

The County's main Solid Waste Disposal Site complex is located just north of Pine River off on the west side of Hwy. 371. The "One-Stop-Service" provides convenient access for proper disposal for these materials at a reasonable price. Prices are set to promote the proper management of waste. In many cases, the County's problem material program complements existing retailer programs to ensure in-depth coverage. The Cass County site is able to accept many of these items for minimal costs (or even free) to ensure proper disposal. See the Cass County website for a location of drop-off sites and schedules to dispose of these items.

- Action 1: Provide citizens with information on the importance of recycling and solid waste management.
- Action 2: Promote proper disposal of household hazardous waste, electronic waste and pharmaceutical and petroleum products.
- Action 3: Promote product stewardship for proper disposal of various types of solid, hazardous and pharmaceutical wastes as well as materials management which focuses on the economic value in waste recovery and recycling in addition to environmental protection.
- Lead: Cass Environmental Services
- Partners: Cass SWCD, U-M Extension, MPCA, USFS, Cass County Cities and townships.
- **Duration:** Length of Plan

Measurable Outcomes:

Host several E-waste, HHW, and business recycling events annually

Maintain factsheets, ordinances and other solid/hazardous information online.

Provide citizens with information on the importance of recycling and solid waste management.



Acronyms

ACCL-Association of Cass County Lakes ACOE-Army Corp of Engineers BWSR-Board of Water and Soil Resources CCAT-Cass County Association of Townships EOR-Emmons and Oliver Resources ESD-Environmental Services Department JPB-Joint Powers Board LGU-Local Unit of Government LLAWF-Leech Lake Area Watershed Foundation LLBO-Leech Lake Band of Ojibwe **MECA-Mn. Erosion Control Association MDH-Mn. Dept. of Health MHB-Mississippi Headwaters Board MLT-Mn. Land Trust Mn.DNR-Minnesota Department of Natural Resources** MnDOT-Mn. Dept. of Transportation MPCA-Mn. Pollution Control Agency **OHWL-Ordinary High Water Level PSA-Public Service Announcement** SSTS-Subsurface Sewage Treatment System **SWCD-** Soil and Water Conservation District **TNC-The Nature Conservancy USFS-United States Forest Service** WCA-Wetland Conservation Act

WRAPS-Watershed Restoration and Protection Strategy

Primary Concerns Input for Cass County Local Water Plan Update

Priority Concerns Input for Cass County Local Water Mar	nagement Plan Update
Answer Options	Response Response Percent Count
Agency/Organization/Individual :submitted by:	100.0% <u>37</u> 94.6% <u>35</u>
Date submitted ans	97.3% 36 wered question 37

Number	Response Date		Agency/Organi zation/Individua Categories	Submitted by:
	1	Feb 9, 20 1 7:58 PM	sdds	sds
	2	Feb 6, 2016 5:08. AM	woman lake chain	jlimburg
	3	Jan 8, 2016 9:17 PM	Fairview Township	Marla Yohc
	4	Jan7,.2016 3:50 PM	Inguadona Lake Assoc.	leroy bertsc
	5	Jan 6, 2016 5:45 PM	. Crooked Lake Town AIS Commitl	i Lloyd Thye
	6	Dec 19, 2015 2:19 AM	Wabedo, Little Boy, Cooper, Rice	Kathy Wag
	7	Dec 11, 2015 4:41 PM	Gull Chain of Lakes Association	Robert Elia
	8	Dec 7, 2015 10:55 .PM	Town of Loon Lake	
	9	Dec 3, .2015 2:18PM	DNR	Doug Schu
1	0	Dec 2, 2015 5:49 PM	Ada Lake Association	Jon Hanse1
1	1	Nov 29, 2015 5:37 PM	Wabedo Twp	R Stokesb,
1	2	Nov 25, 2015 9:37 PM	BWSR	Dan Stewa
1	3	Nov 25, .2015 1:52 PM	Kathy Bertssch	Kathy Berti
1	4	Nov.24, 2015 1:15PM	Ansel Township	Linda Kuse
1	5	Nov 23, 2015 11:56 PM	Baby,Kid,Kerr,Lost,Man,McKeowr	Ron Jandu1
1	6	Nov 23, 2015 4:17.PM F	Paula West	Paula Wes
1	7	Nov23, 2015 3:57 PM	cass lake	Sue Uhrina
. 1	8	Nov 23, 2015 3:01 AM	Robert Holman	Same
1	9	Nov 22, 2015 4:16 PM	Big Deep Lake Property Owners /	. Wayne Ed
2	0	Nov 22, 2015 .4:04 PM	Child, Girl, Woman Lakes Area A	i Don Kruse
2	1	Nov 22, 2015 1:2.7 AM	ACCL	Vic Rinke
2	3	Nov 21, 2015 10:18 AM	Jerry Lerom	
2	4	Nov 21, 2015 1:31 AM	Ada Lake Association	Dave Sohn
2	5	Nov 21, 2015 1:27 AM	Pine Mountain Lake Assoc.	Darvin Kae
2	7	Nov 20, 2015 9:47 PM	Webb Lake Assoc	Maggie Mc
2	8	Nov 20, 2015 9:24 PM	Hand Hay Lake Association	Sandra Thi
2	9	Nov 20, 2015 7:12.PM	MN DNR	Darrin Hovr
3	0	Nov 20, 2015 2:19 PM	MN Pollution Control Agency	Phil Votrub
3	1	Nov 20, 2015 1:11 AM	Pike Bay Township	Matt Ericks
3	2	Nov 19, 2015 8:51 PM (City Of East Gull Lake	Rob Maser
3	3	Nov 19, 2015 6:22 PM I	Leech Lake Area Watershed Four	John Sump
3	4	Nov 19, 2015 2:14PM N	/lississippi Headwaters Board	Tim Terrill
3	5	Nov 18, 2015 8:53 PM	City of Pine River	Wanda Mo1
3	6	Nov 18, 2015 8:48 PM (City of Walker	Terri Bjorkl
3	7	Nov 18, 2015 8:05 PM 7	The Nature Conservancy	Todd Holm

Kelly Condiff

From: Sent: To: Cc: Subject: Attachments: Todd Holman <tholman@tnc.org> Monday, February 15, 2016 1:34 PM Kelly Condiff Kristen Blann RE: Cass County Scoping Document Draft 2 30Lakes_med.jpg; Presentation to TLWD 102615.docx

Kelly:

Great work on this draft. As an outcome of the USGS GeoAtlas work in Crow Wing, areas were mapped that illustrate strong connectivity between surface and ground water. This would include the old glacial lake Brainerd basin that captures the Gull Chain up to Pelican, North Long etc. If the public can see and understand that in those specific areas what happens on the land is really connected to the lakes/wells and vice versa, it helps inform other decisions regarding land use, high risk land uses and maybe even land uses that just should not be in those areas. As is the case in the GLBrainerd area, huge resort/tourism dollars in addition to the source water supply for public and private wells should drive inter-governmental decision making for ground and surface water protection. It seems like this kind of mapping should be in the groundwater section if available and then an economics section that identifies water related tourism, well dependence for drinking water and industrial uses.

These exhibits were created for another discussion, but lattach them just as illustrations. Kristen is the better subject matter expert regarding greater detail or Cass County wide applicability.

Thanks for consideration of these thoughts. TH

From: Kelly Condiff [mailto:kelly.condiff@co.cass.mn.us]

Sent: Thursday, February 11,2016 9:20 AM

Please review and comment

To: 'Morley, David A -FS'; dan.steward@state.mn.us; 'Hoverson, Darrin (DNR)'; robert.yochum@co.cass.mn.us; Tim Moore; sundbergl @means.net; cpeterson@tds.net; MKFroehlig; Ken Kostial; Ken Laporte; janevanhunnick@hotmail.com; jebatty@uslink.net

Cc: 'Schultz, Doug (DNR)'; John Bogard; rjlerom@gmail.com; John Ringle; 'Leech Lake Area Watershed Foundation'; Todd Holman; jeff.hrubes@state.mn.us; tomandlindakuschel@tds.net; 'Baird, Heather (DNR)'; Votruba, Phil (MPCA) **Subject:** Cass County Scoping Document Draft 2

I<elly Condiff

From:	Jerry Lerom <rjlerom@gmail.com></rjlerom@gmail.com>
Sent:	Saturday, February 13, 2016 10:36 AM
To:	KellyCondiff
Cc:	Morley, David A -FS; <dan.steward@state. mn.us="">; Hoverson, Darrin (DNR);</dan.steward@state.>
	<robert.yochum@co.cass.mn.us>; Tim Moore; < sundbergl@means.net>;</robert.yochum@co.cass.mn.us>
	<cpeterson@tds.net>; MKFroehlig; Ken Kostial; Ken Laporte;</cpeterson@tds.net>
	<janevanhunnick@hotmail.com>; <jebatty@uslink.net>; Schultz, Doug (DNR); John</jebatty@uslink.net></janevanhunnick@hotmail.com>
	Bogard; John Ringle; Leech Lake Area Watershed Foundation; <tholman@tnc.org>;</tholman@tnc.org>
	<jeff.hrubes@state.mn.us>; <tomandlindakuschel@tds.net>; Baird, Heather (DNR);</tomandlindakuschel@tds.net></jeff.hrubes@state.mn.us>
	Votruba, Phil (MPCA)
Subject:	Re: Cass County Scoping Document Draft 2

Hi Kelly,

Thank you for the opportunity to review the CCWP draft. I carefully read the document and, in particular, hi-lite'd all references to coordinating/partnering with lake associations and ACCL. Specifically: AIS - Watercraft inspections, coordination; Surface Water - Shoreland buffers, partners; Ground Water - Septic System ..., Action 6 and Partners.

Although not specifically mentioned, I could certainly see ACCL partnering or at least being included in the overall communications loop in the Land Use and Development (Obj. 4, Action 2,3,4.

I am curious about the reference to "150 resorts" in Cass County in "Objective 1:Septic System Maintenance and Inspection" opening paragraph. We (ACCL) are operating with 56 resorts/CG on the Boy River Chain of Lakes and 40 on all other lakes for total of 94 + or -. These are the numbers we have identified as part of the Dr. Welle project and those non-Boy River Chain of Lakes resorts that we know about.

I am impressed with the work done in preparing the CCWP draft, my compliments. Will the plan eventually go the the SWCD BOD and BOC for their adoption?

Thanks for the opportunity to review the draft.

Regards,

Jerry Lerom, Pres. ACCL Sent from my iPad

On Feb 11,2016, at 10:19 AM, Kelly Condiff kelly.condiff@co.cass.mn.us wrote:

Please review and comment

<Updated PCSC.pdt>

Feed-back on Scoping Water Plan Cass County-LLAWF

Overall I'm struggling to figure out how to incorporate some of the current issues that popped out during the WRAP?

Could implementing the Leech River WRAP be a priority concern??

Priority Concern: Aquatic Invasive Species

3. Education & Outreach – would it be possible to have a priority concern focused just of Education and Outreach – so we could focus on broad water conservation education into one priority concern ? Verse the major focus of education on AIS?

If that is not an option – please add LLAWF page 6 under partners. It is my understanding from John R – that he has funds to support our part time communication position and they will be responsible in partnership with the SWDC and Cass Environmental staff in re-doing of the SWDC Web Site and LLAWF's site which will focus on landowner info / resources etc.

Priority Concern: Surface water

Could one Action be implementing the 5 priority (HUC 12) areas as outlined in the Leech WRAP for protection?

Objective 2 : Shoreland Buffers

I would be interested in fund raising around a pilot that would investigate the interest and.willingness of landowners and the county regarding incentives/rewards for providing high quality shoreland buffers. We would test an rewards program on a couple lakes to see if it results in landowner changing their behavior.

You mention one outcome being protect and restore one mile of shore land annually?

I would like you to consider adding an additional action under Sensitive Shoreland Protection. Maybe this should be under Land Use and Development

Action 3 Promote Conservation Easements – please add LLAWF as a partner.

You could mention the current CE programs Clean Water Critical Habitat focused on Tullibee Lakes in Cass.

Kelly Condiff

Votruba, Phil (MPCA) <phil.votruba@state.mn.us></phil.votruba@state.mn.us>
Wednesday, February 17, 2016 11:32 AM
Kelly Condiff
RE: Cass Water Plan Scoping document Review

Thanks!

Phil Votruba Watershed Project Manager MPCA Brainerd Regional Office 7678 College Rd, Suite 105 Baxter, MN 56425 (218) 316-3901-Direct (218) 828-2492-Front Desk

From: Kelly Condiff [mailto:kelly.condiff@co.cass.mn.us] Sent: Wednesday, February 17, 2016 11:19 AM To: Votruba, Phil (MPCA) Subject: RE: Cass Water Plan Scoping document Review

I have made most of changes_It you mentioned, this is updated version.

From: Votruba, Phil (MPCA) [mailto:phil.votruba@state.mn.us] Sent: Tuesday, February 16,2016 1:51 PM To: Kelly Condiff Subject: RE: Cass Water Plan Scoping document Review

Hi Kelly:

I have reviewed the Cass County Water Plan Scoping Document (Plan) and it looks like the document is in pretty good shape. I have a few suggested revisions that you may want to consider in the overall refinement of the Plan. These suggestions are as follows:

<u>G</u>eneral

- You may want to have a List of Acronyms/Explanati on of Terms in front to help clarify the Acronyms within report.
- Apostrophe use. In some cases the term LGU's (e.g. page 3) is used in a plural sense where it should be LGUs.
- Consider adding page numbers to the document.
- In some cases it appears that the formatting could be revised to adjust spacing between paragraphs (e.g. page 3) /and words & consistency of Font use. Consider double checking document for consistency in this regard.

Specific Specific

- Page 4 of PDF. Surface Water -Consider adding a Map of the County illustrating the 8 digit HUC watershed boundaries within the county. Add a brief summary paragraph of each watershed and an update on the WRAPS process for each watershed. Also, if available, note some of the outcomes to date from the WRAPS and implementation priorities (if available at this time) that have been identified. Note impaired waters and waters of exceptional use.
- Page 5 of PDF. Under Groundwater Septic Maintenance & Inspection. You may want to consider adding MN Rules in front of 7080-7083.
- Page 6 of PDF. Should Cass Lake be added to AIS map?

- Page 12 of PDF. Land Use and Development add italics to the word Use. The first paragraph here notes the different natural resources in the county but ends with "that our clean water provides". Might want to include other natural resources in this statement since they are noted above. Might want to say something like e.g. that our wealth of natural resources provides? Forestlands important element in protecting water quality, good opportunity to mention that in this section.
- Page 13 of PDF. Last paragraph first sentence. Reference made to SE MN. May want to clarify this sentence.
- Page 19 of PDF. Well Sealing First sentence. Double check spelling of Municipal.
- Page 21 PDF. Solid & Hazardous Waste Disposal second paragraph, first sentence, add spacing on the word "betweenthetwo":

Thank you for the opportunity to review and comment on the Plan. It looks like a strong template for the Plan. The MPCA thanks the Cass County SWCD/ESD for all their active participation and leadership with the WRAPS projects. Please let me know if you have any questions.

Sincerely,

Phil Votruba Watershed Project Manager MPCA Brainerd Regional Office 7678 College Rd, Suite 105 Baxter, MN 56425 (218) 316-3901- Direct (218) 828-2492-Front Desk

From: Kelly Condiff [mailto:kelly.condiff@co.cass.mn.us] Sent: Wednesday, February 10, 2016 2:14 PM To: Votruba, Phil (MPCA) Subject: Cass Water Plan Scoping document Review

Please review and comment

Kelly Condiff

From:Schultz, Doug (DNR) <Doug.W.Schultz@state.mn.us>Sent:Thursday, February 11, 2016 11:01 AMTo:Kelly Condiff (kelly.condiff@co.cass.mn.us)Subject:Water plan with my commentsAttachments:Updated PCSC.pdf

Hi Kelly,

See attached, only a handful of comments. You guys really get a lot done, thanks for the opportunity to review.

Doug

I<elly Condiff

From: Sent: To: Subject: Morley, David A -FS < damorley@fs.fed.us> Wednesday, February 10, 2016 2:40 PM Kelly Condiff RE: Cass water Plan Scoping document

Nice work!

You can include the USFS in with partners on:

"Objective 3: Education and Outreach" under "AIS Priority Concern" section.

"Objective 2: Shoreline Buffers" and "Objective 3: Wetland Protection" under "Surface Water Priority Concern" section

"Objective 5: Well Sealing" and "Objective 6: Solid & Hazardous Waste Disposal" under "Ground Water Priority Concern" section

We've worked with Cass directly or indirectly in all of the above mentioned areas in the past, and we fully intend on continuing that relationship in any capacity we that can into the foreseeable future.



David Morley Hydrologist Forest Service Chippewa National Forest, Walker Ranger District

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Caring for the land and serving people

From: Kelly Condiff [mailto:kelly.condiff@co.cass.mn.us] Sent: Wednesday, February 10,2016 2:13 PM To: Morley, David A -FS <damorley@fs.fed.us>; 'Schultz, Doug (DNR)' <Doug.W.Schultz@state.mn.us> Subject: Cass water Plan Scoping document

Please review and return with comments

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