Clean Water Council Meeting Agenda

Monday, March 20, 2023

9:00 a.m. to 2:00 p.m.

IN PERSON with Webex Available (Hybrid Meeting)

9:00 Regular Clean Water Council Business

- **(INFORMATION ITEM)** Introductions
- **(ACTION ITEM)** Agenda - comments/additions and approve agenda
- **(ACTION ITEM)** Meeting Minutes - comments/additions and approve meeting minutes
- **(INFORMATION ITEM)** Chair and Council Staff update
    - **Policy & Budget and Outcomes Committee Updates**
    - **Staff update**
        - **Legislative update**

9:30 Strategic Planning Exercise: Questions on Status Reports, Intro to Small Group Workshop

- MPCA Organizational Improvement Unit

10:00 Strategic Planning Exercise: Small Groups Workshop

11:00 BREAK

11:15 Strategic Planning Exercise: Report Out

11:45 LUNCH

12:15 Groundwater Restoration and Protection Strategies (GRAPS)

- Tannie Eshenaur, Minnesota Department of Health
- Carrie Raber, Minnesota Department of Health, Interagency GRAPS Team

12:45 Nonpoint Priority Funding Plan (NPFP)

- How should BWSR's NPFP fit into CWC's Strategic Plan?
- Justin Hansen, Board of Water and Soil Resources

1:00 Integrating WRAPS and GRAPS into One Watershed One Plan

- Zach Gutknecht, Beltrami SWCD (Upper/Lower Red River and Mississippi Headwaters 1W1Ps)
- Doug Bos, Rock SWCD (Missouri River 1W1P)

2:00 Adjourn

Immediately after: Steering Committee

Clean Water Council
February 27, 2023 Meeting Summary

Members present: John Barten (Chair), Steven Besser, Richard Biske, Richard Brainerd, Tannie Eshenaur, Warren Formo, Justin Hanson, Rep. Josh Heintzeman, Frank Jewell, Jen Kader (Vice Chair), Margaret Wagner for Peder Kjeseth, Holly Kovarik, Jason Moeckel, Jeff Peterson, Rep. Kristi Pursell, Victoria Reinhardt, Todd Renville, Peter Schwagerl, Glenn Skuta, Phillip Sterner, and Marcie Weinandt.
Members absent: Gary Burdorf, Kelly Gribauval-Hite, Sen. Jennifer McEwen, Raj Rajan, Sen. Carrie Ruud, Patrick Shea, and Jordan Vandal.

To watch the WebEx video recording of this meeting, please go to https://www.pca.state.mn.us/clean-water-council/meetings, or contact Brianna Frisch.

Regular Clean Water Council Business

- Introductions
- Approval of the February 27 meeting agenda and January 23 meeting summary, motion by Dick Brainerd, and seconded by Rich Biske. Motion carries.
- Chair and Council Staff update
    - Policy & Budget and Outcomes Committee Updates
    - Staff update
        - Legislative update: The February budget forecast was released today. There is a $17.5 billion surplus, which was the same amount projected in November 2022. About $12.5 million is carry forward, or one-time money, and $5 billion in a structural surplus that can be used for ongoing new spending or tax reductions. Inflation is now included. Additionally, there are many water-related bills being heard at the Legislature. The House version of the Clean Water Fund Recommendations bill is included in the meeting packet. Note the updated rider language from the state agencies.
        - Tannie Eshenaur, Minnesota Department of Health (MDH): One item to mention for the Clean Water Fund bill, is that the MDH requested an extension on the spend window of the private well initiative as well as water reuse programs. It was submitted with the rider language, as was done in the past. It was not included in the bill, and so now they were told to ask for an amendment.

Strategic Planning Exercise, by Kim Behrens and Kari Cantarero, Minnesota Pollution Control Agency (MPCA) Organizational Improvement Unit *(WebEx 00:48:00)*

- The Council's Strategic Plan was first introduced in April of 2020. This is a five-year plan, looking at a three-year review. This meeting is about recording status reports for the 2020 strategies.
- Reviewed mission statement and four goals and proceeded to review progress on strategies.

Discussion/Comments:

- John Barten: It would be good to change the second goal, to read "Groundwater is clean and available to Minnesotans" because some parts of the state dealing with limits to groundwater.
- Jen Kader: For the vision and goals, I struggle to differentiate them. To me, it seems they are similar. Goals are usually more time-bound and measurable.
- Tannie Eshenaur, MDH: In the vision, you can change the drinking water item, from "both public water system users and private well owners" to be "all users."
- John Barten: For "Groundwater is clean and available" it should use "sustainable."

- This meeting will focus on the status reports and prioritization. March will review strategies. April will review the impact and effort matrix as well as finish up reviewing strategies. May will provide the updated Strategic Plan and discuss reporting and communication needs.

Questions/Comments:

- Jen Kader: A timeline to 2034 when the Legacy Amendment expires makes sense. Also, it would be good to have goals extend longer, like 2050 to show what could be if the funding continues beyond 2034. It also shows what would not be achieved if the funding is cut.
- Dick Brainerd: Is the plan flexible enough to add things in as we go? Response: This review is happening in year three, and we encourage you to do it again in year four.

- Rich Biske: Perhaps we can spend time thinking about the principles of the Council and perhaps checking the theory of change. The programs and content come across, but the theory of change does not, losing sight of the ways to achieve the goals.
- Jen Kader: We talk about the watershed approach and adaptive management and addressing other issues that arise. All to make sure we are adaptively adjusting, to make sure the approach and focus are retained. Also, how these goals are structured is important because there are critics. It will be so important to communicate the goals that are achievable in the timeframes, while acknowledging the aspirational direction we are aiming for too.
- Glenn Skuta, MPCA: It would be important to communicate what has evolved in terms of once the amendment was passed and money started to flow. It takes time for the train to pick up speed as it is leaving the station. There was some developmental lag, and now in the last decade, the train is picking up speed. There are successes to keep this forward motion. This is a long evolutionary process, where the work does not end in 2034. The train has a long way to go. I think there is something missing in overall principles. For example, looking at the niche that the Clean Water Funds (CWFs) fill. This could be identified more.
- Jason Moeckel, DNR: Many programs help achieve these strategies. It is a valuable document to help make these decisions, looking at properly investing in these programs. There are options to communicate the work.
- Margaret Wagner, Minnesota Department of Agriculture (MDA): The plan is used when bringing programs to the Council. I think the fourth goal is sometimes overlooked. State agencies connect most of their work in the first three goals. The fourth is more of a catch-all. Most of the work can be connected there.
- Tannie Eshenaur, MDH: I second Margaret. There is a need to help change these social norms, the systems in place, and the culture. That will make the broad-based change we are seeking. In the Strategic Plan, there is a section on guiding values and requirements. It may be the appropriate place to put in the theory of change.
- Frank Jewell: I think of the work of Bonnie Keeler looking at these social norms. I keep thinking about how most people think water is plentiful in Minnesota. They don't have to wonder about it. However, changing that mindset, that it is a natural resource that needs to be protected, is important.
- Facilitators: There are two outstanding questions that have come to the surface. One, what can this fund do that others cannot. As well as how much does the Council want to make sure the funds are used for certain areas, unique niches. Second, adding the theory of change into the values and requirements. Additionally, there is more work to be done with goal four. Potentially theories of change and principles together.

Strategic Planning Exercise, Part 2 *(WebEx 01:44:30)*

- Let's review the strategies, get updates, and make changes as needed. Council members should be thinking about the previous conversations and the questions brought forward. Paul reached out to the state agencies to receive updated numbers. Spreadsheet is included in meeting packet.
- Goal 1 Changes/Updates/Questions:
  - Frank Jewell: (Strategy 5) Do we ever note how many acres are protected? It would be useful to know. *Answer*: Yes, the dashboard will share that information. The MDH now has better data sources.
  - Kim Behrens, MPCA: (Strategy 5) When does the dashboard go live? *Answer:* They are testing it out right now. Likely sometime in 2023.
  - Tannie Eshenaur, MDH: (Strategy 7) There is a dashboard for that item.
  - Jason Moeckel, DNR: (Strategy 7) Going through the strategies listed so far for goal 1 align strongly with individual programs and appropriations. Specifically, the MDH. As the other strategies are viewed, they are not as clear-cut. Is the Council working to have a strategy that aligns with programs, or is there wiggle room to have strategies that are being flushed out? I think the Council is doing this, but I want to bring it to your attention, in case there is a discussion needed. Response from Paul: It would be helpful to have that discussion. The first plan included strategies we have been doing but had never been mentioned in one document. We can check off many of these things now, so now we can remove things and add things.
- Goal 2 Changes/Updates/Questions:
  - Jason Moeckel, DNR: (Strategy 2) The Minnesota Geological Survey completes Part A of the county atlases, while the DNR completes Part B. The Part B is about four years behind.
  - Jason Moeckel, DNR: (Strategy 3) The number changes often. However, it is over 1,234 wells.
  - Justin Hanson, Board of Water and Soil Resources (BWSR): (Strategy 4) BWSR track sealed unused groundwater wells that threaten drinking water. MDH receives a record when wells are sealed.

- Goal 3 Changes/Updates/Questions:
  - Jen Kader: (Strategy 3): Are 100,000 priority acres enough? *Answer:* It is specific to priority acres.
- Next steps: In March we will continue with the status reports and work on the prioritization scale.

Monitoring, Assessment, Characterization & WRAPS in the Lower Minnesota West Watershed, by Joel Chirhart and Glenn Skuta, MPCA *(WebEx 02:44:00)*

- The watershed framework is a ten-year monitoring and assessment cycle. It starts with two years of monitoring and follows an assessment, stressor identification, and the development of restoration and protection strategies. Currently, they are into their second ten-year cycle across the state. Local partners are involved in this approach.
- The primary goal of the first ten-year cycle was to evaluate the surface water conditions to inform management of actions. They tracked water quality status and trends, identify stressors associated with impairments, effectiveness monitoring, informed WRAPs, addressed permitting needs, and worked with local partners (such as County staff, watershed staff, and Soil and Water Conservation Districts). They spaced out the work across the state to spread the workload as well as blunt any effects of weather. The second cycle is following the same order again.
- Secondary benefits of watershed monitoring include: refined water quality standards, determination of aquatic life use goals, development of tools to aid the stressor identification (SID) process, collaboration on regional and national water quality trend projects, interagency monitoring cooperation, as well as support the research dealing with emerging water quality and health concerns (such as climate change or PFOS).
- Monitoring has changed over time. From the 1970s to 2010, the primary pool they used for looking at data and trends across the state was with eighty milestone stations. They collected various parameters monthly in spring, summer, and fall months. Some of the stations were around in the 1950s. They are still a part of the monitoring network today. MPCA started pollutant load monitoring stations in about 2007 at two hundred sites, and they have worked to fill in the gaps (from about 1996 to today), reaching about six thousand biomonitoring stations. They continue to do trend monitoring data along the major river networks. They have moved watershed to watershed doing the intensive water monitoring. They add stations as needed. Most other states are where we were before 2007 and the Clean Water Fund.
- Local contracted partners and the MPCA monitor locally for stream chemistry. They focus on nutrients, sediment, bacteria, dissolved oxygen, conductivity, pH, and temperature. For lakes, it is one to two years of sampling. The focus is on nutrients, algae, and lake water clarity. Additionally, the DNR samples fish on a subset of lakes for IBI. For biological monitoring, it is conducted by the MPCA for the streams, and the DNR for the lakes. They monitor fish, invertebrates, chemistry, and habitat assessment for streams. Fish and plant sampling for lakes. This is a direct assessment of the health of the aquatic community.
- The Lower Minnesota River Watershed is the most downstream watershed in the Minnesota River Basin. There are 1835 square miles, 2482 miles of flowing water, and 133 lakes over ten acres. There is a diversity of land use, public perception, local funding, and active local government units.
  - For cycle 1: 133 stations were sampled. The biological stations selected to represent the DNR minor watersheds. The water chemistry stations selected to pour point of HUC12 watersheds. The fish contaminant stations are at the pour point of the watershed. Additional stations were added as needed.
  - For cycle 2: 58 stations currently planned, with additional monitoring locations to be added. The biological and water chemistry stations selected at pour point of HUC12 watersheds. The fish contamination stations at the pour point of the major watershed. Additional stations will be added as requested. This reveals a significant scaling back of data collection in the second cycle.
- Adaptive management in monitoring:
  - First cycle uses an unbiased approach to assess the health of the state's water resources effectively and efficiently. They identify where water quality is doing well (focus on protection) and not doing well (focus on restoration). They work to identify priorities based on conditions feeding into problem investigation and WRAPS to inform implementation.
  - Second cycle is a reassessment of conditions. They are looking for change between cycle one and two. They work to solicit request and plans with the local government units on shared watershed monitoring goals. This planning and implementation considered the local priorities.
- Findings:

- Common impairments in the Lower Minnesota Watershed include biology (fish and macroinvertebrates), nutrients, sediment, bacteria, and chloride. Looking at aquatic life, there was 75 percent non-support and 43 percent full support. For aquatic recreation, there was 55 percent non-support and 45 percent full support. Streams showed a different picture. Only 14 percent were full support for aquatic life, leaving 86 percent non-support. The aquatic recreation was also impacting, with only 9 percent full support and 91 percent non-support. Within these categories, the numbers are a variety of different water quality parameters, as a comprehensive assessment of the streams in the watershed.

- The next part of the watershed framework is water resources characterization and problem investigation. Looking at the parameters, if one of them is impaired, it makes the list of impaired water (lake or stream).
  - The goal is to identify stressors causing biological impairments. Common stressors in the Lower Minnesota River Watershed include: water chemistry (sediment, dissolved oxygen, nitrate-nitrogen), stream habitat, connectivity (such as perched culverts), as well as altered hydrology. Looking at the stressors help to address what changes may be needed to help remove this water as an impairment.
  - A Total Maximum Daily Load (TMDL) is the maximum amount of pollutant a water body can receive without violating water quality standards. It is a calculation done to figure out the reduction needed to achieve the water quality standard. It is a high level of source assessment to guide restoration activities. There are nearly a hundred TMDLs in the Lower Minnesota River Watershed completed in three reports.
  - Calculations involve computer modeling, specifically hydrologic simulation program FORTRAN, which is a HSPF program. It incorporates flow, water quality, land use, climate, soils, and topography. It estimates water quality and flow conditions at a finer scale. The results can identify priority restoration areas.
  - The WRAPS synthesizes the information that has been collected during the Watershed Approach process. It incorporates existing strategies like the Nutrient Reduction Strategy and Sediment Reduction Strategy.
  - The MPCA is on track to have all the WRAPS complete by the statutory deadline of June 2023. They are updating watersheds on an as needed basis and coordinating with the local government units. There are 78 of 80 watersheds complete right now. One is on public notice, and the other is in progress and going on public notice in April.
  - They have close cooperation with local resource professionals. This is with the restoration and protection strategies, prioritizing waterbodies, and can be transferable to the local water planning (such as One Watershed One Plan (1W1P)) work. Local involvement is sometimes key to success.
  - This work aligns with larger scale efforts. There are TSS reduction goals, nutrient reduction goals, and bacteria reduction goals. A team approach is important.
  - The local water planning (1W1P) was split into two, with the Lower Minnesota River West 1W1P and the Lower Minnesota River East 1W1P. This area BWSR will get into more at one of the upcoming meetings.
  - Survey results have revealed that the local government units agree that the 1W1P water quality elements are consistent with the WRAPs.
  - Healthier watersheds webpage reveals detailed information on the implementation in the watershed. There is a lot of data available to view.

Questions:

- Dick Brainerd: Are there areas where you should collect more data? *Answer:* We are doing as much as we can with the data we have. They cannot reach back to the small enough scale because it requires detailed monitoring. Some of these occur on a scale that we cannot handle given our resources.
- Tannie Eshenaur, MDH: What are things that you monitor that may be related to healthy water for swimming? Do you sample for other things that are related to swimming? *Answer:* For aquatic recreation. It is two different standards for stream and river environments versus lakes. In the lake environments they have the lake eutrophication standard, looking at total phosphorous and algal growth, as well as the clarity of the water. It gets to aesthetics, biological mass. Regarding bacteria, there is a high variability in the concentrations in different parts of the lake, so you would have to have many sampling sites with a high frequency of samples. That is why you do see bacteria being monitoring by local government units and places that monitor the beaches specifically, not in mid-lake or west shore, because of the high frequency. For the streams, there are more visits to the stream locations, and the water is flowing, so there is a non-stagnant situation (the bacteria is flowing).
- Marcie Weinandt: Are you monitoring ditches? *Answer:* Yes, we are monitoring some. They are water and contribute to the overall health of water. It is essential to sample them.

- Rich Biske: There is a lot tracked through the watersheds right now. Through the 1W1P process are you able to track the number of public participants through the process? Could it be tracked as a metric? *Answer:* I feel like we are doing that in lots of areas, but one of the big items is the We Are Water exhibits, and they have tracked those numbers. *Response from Tannie Eshenaur, MDH:* Early in the CWFs process, we had Dr. Mae Davenport talk to the Council about the social science components, which was used with other projects. It can be a powerful tool. It does take some thought to include this in the process.
- Justin Hanson, BWSR: Thinking about social behaviors, something the MPCA did early on in this process was to help make it locally driven. It was intentional and meaningful. It set up well, to have ownership and partnership with the 1W1P. There was such cooperation. It was an important social set that the MPCA took, and it will move further work forward. This needs to be tracked somehow because there is a story there, and it is successful. Social norms are changing so that measurement needs to be captured.

Adjournment *(WebEx 04:04:42)*

Today's Agenda

9:30 am	Qs on Status Reports; Intro Workshop
10:00 am	Small Groups Workshop
11:00 am	Break
11:15 am	Report Out Results
11:45 am	Lunch

A **strategy review** is the process in which organizations discuss the progress of their goals and objectives and make the necessary adjustments for the upcoming year.

The Strategy Plan Review Parts

Goal #1 Drinking water is safe for everyone, everywhere in Minnesota

Goal #2 Available groundwater is clean and sustainable for Minnesotans

Today's Workshop

Task #1: Assign Roles

Task #2: Determine Prioritization

Task #3: Strategy Review

Task #4: Report Out Results

10-15 minutes per strategy. One hour for tasks 1-3.

Worksheet

External Factors

Measures & Targets

Effectiveness

Prioritization

SMALL GROUP WORKSHEET: CWC STRATEGY REVIEW | March 2023

Strategy 1.8	Status Update	Prioritization
Increase public water supply efficiency in the Twin Cities Metropolitan Area by reducing groundwater use by 150 million gallons per day year to accommodate future population growth. Sustain the quantity and quality of the resources through water reuse, alternative supplies, efficiency, technology, intergovernmental collaboration, and technical assistance.	Funded by two Clean Water Fund programs. On track or exceeding 150 million gallon per year goal.	Choose one: R = CWF is required to fund (based on mandate) O = CWF is the only funding source S = CWF is the safest, biggest, and fastest funding source (could be funded by policy, bond $ or other source)

A. Which of these factors impact this strategy?					Decisions about current strategy			
Economic	Environmental	Political	Technology	Other?	No change	Tweak	Major Alteration	Delete or Complete

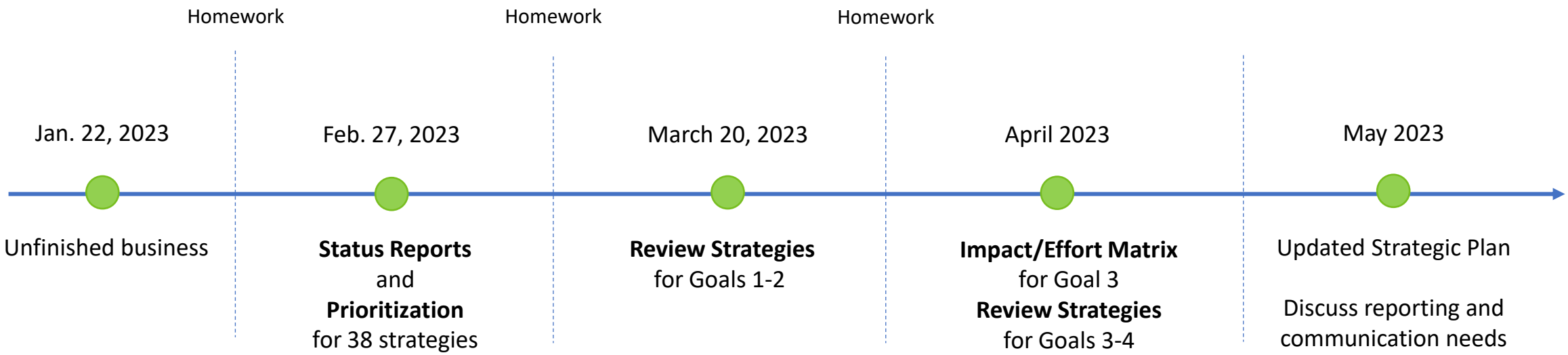
Recommended change to strategy

B. Measures and Targets for Outputs and Outcomes	Decisions about measures and targets			
How do we know we have achieved this strategy?	No change	Alter the target	Major Alteration	

Does this strategy have an appropriate metric or measure? Recommended change to measure(s).

C. Is this strategy making a difference? Why or why not?

Timeline


Homework
Homework
Homework
Jan. 22, 2023
Feb. 27, 2023
March 20, 2023
April 2023
May 2023
Unfinished business
Status Reports and **Prioritization** for 38 strategies
Review Strategies for Goals 1-2
Impact/Effort Matrix for Goal 3 **Review Strategies** for Goals 3-4
Updated Strategic Plan
Discuss reporting and communication needs

	A	B	C	D	E	F	G	H
2		**Goal (What we will accomplish)**	**Details (How we will accomplish the goal)**		**Responsible Agency**	**Strategies (Methods to accomplish)**	**Status Report**	**Prioritization R, O, S**
3								
4	Goal 1:	**Drinking water is safe for everyone, everywhere in Minnesota**	• Protect public drinking water sources • Ensure that users of public water systems have safe water • Ensure that private well users have safe water	1	*several agencies*	Spend a minimum of five percent of the Clean Water Fund exclusively on drinking water as required in the State Constitution.	Paul made a rough calculation in 2021 about how much of the CWF was supporting drinking water source protection. That totalled around 19% of FY22-23 spending. The measurement was VERY rough.	
5				2	MDH	Support widespread and routine testing of private well water and help private well owners achieve safe limits at the tap, beginning with a pilot project in FY2020-2021.	Pilot is complete. Recommendations for the fund is that every private well owner in MN will get a free well test to test major contaminants at no cost to them. Over 10 years at 10% per year.	
6				3	MDA	Prioritize implementation funding that supports the Ground Water Protection Rule, so no additional municipal water supply wells exceed the drinking water standard for nitrate.	This is proceeding as planned using the Nitrate in Groundwater line item in FY24-25 recommendations. Local advisory teams meeting. In process. A dashboard might be possible to measure which water suppliers are below the DW standard.	
7				4	MDA	Implement the Nitrogen Fertilizer Management Plan (NFMP) to promote vegetative cover and advanced nitrogen fertilizer management tools to protect private wells in vulnerable areas.	This is also funded by the Nitrate in Groundwater line item. Intersects with private well protection item (MDH), Forever Green Initiative (MDA), Township Testing (for N and pesticides) and Drinking Water Source Protection grants (BWSR). Difficult to get metrics. Do not have a numeric today. Possible metrics: How many acres of green area do we have? Are we seeing increased number of wells seeing nitrates? These are local priorities.	
8				5	MDH	Protect the approximately 400,000 acres of vulnerable land surrounding drinking water wellhead areas statewide by 2034.	This is funded through the Source Water Protection line item in the FY24-25 CWF recommendations and previous recommendations. Work is in process. Working on a dashboard for 2023. It will provide us what progress we are making.	
9				6	MDH	Source Water Protection Planning		
10				6a	MDH	• Conduct ongoing source water protection planning and implementation for the state's 500 **vulnerable** community public water systems;	All first generations plans are complete. Fifty plans a year are updated.	
11				6b	MDH	• Complete first generation source water protection plans for the remaining 420 non-vulnerable community public water systems by 2025;	Complete: 306 Remaining: 114	
12				6c	MDH	• Complete revised source water assessments for all 23 surface water systems by ~~2025~~2027;	Progress on this activity was delayed by COVID – completion will be delayed by 2 years. Eight source water assessments should be complete by 2023. (source water assessments are like the Part 1 for wellhead protection; the basic hydrologic science of the surface water source.)	

	A	B	C	D	E	F	G	H
13				6d	MDH	• Complete source water intake protection planning by ~~2027~~2029;	Progress on this activity was delayed by COVID – completion will be delayed by 2 years. Five source water intake protection plans should be complete by mid-2023. (source water protection plans are like the Part 2 for wellhead protection, the actions the system will take to protect the surface water at the intake.)	
14				6e	MDH	• Complete pilot source water protection planning for 10 non-community public water systems with at-risk populations by 2027.	On track. Details to come.	

	A	B	C	D	E	F	G	H
15				7	MDH	Provide financial assistance for source water implementation activities through grants to satisfy 50% of demand through 2034.	This is funded through the Source Water Protection line item in the FY24-25 CWF recommendations and previous recommendations. Work is in process. See dashboard.	
16				8	MC	Increase public water supply efficiency in the Twin Cities Metropolitan Area by reducing groundwater use by 150 million gallons per ~~day~~ year to accommodate future population growth. Sustain the quantity and quality of the resources through water reuse, alternative supplies, efficiency, technology, intergovernmental collaboration, and technical assistance.	Funded by two Clean Water Fund programs. On track or exceeding 150 million gallon per year goal.	
17	Goal 2:	**Available groundwater is clean and sustainable for Minnesotans**	• Protect groundwater from degradation. • Support effective measures to restore degraded groundwater. • Ensure groundwater use is sustainable • Avoid adverse impacts to surface water features due to groundwater use	1	MDH	Complete Groundwater Restoration and Protection Strategies (GRAPS) for all major watersheds engaged in comprehensive watershed planning by 2025 (double check this date and language here). Providing data and tools for use.	To stay on track, MDH requires some extra staff capacity. The Council's FY24-25 Clean Water Fund recommendations include additional funding for more people for more capacity. MDH has a dashboard map of GRAPS completed and in progress.	
18				2	UMN/DNR	Complete groundwater atlases for all Minnesota counties by 2029.	The Minnesota Geological Survey completes Part A of the county atlases and the DNR completes Part B for the groundwater portion. COVID and retirements have caused delays. Part A will be able to finish by 2034. Part B is 4 years behind.	
19				3	DNR	Achieve a goal of 1,600 state-owned and managed long-term groundwater monitoring wells statewide by 2034	Clean Water Fund appropriations provide support for 50 new wells per year. The state currently has more than 1,200 wells.	
20				4	MDH/BWSR	Prioritize the sealing of unused groundwater wells that present a risk to drinking water aquifers by 2034.	BWSR now provides the funding for well sealing instead of MDH. Not sure of a metric here. It is being tracked by BWSR in eLink. When sealed, record comes to MDH.	
21				5	MPCA	Maintain a compliance rate for subsurface septic treatment (SSTS) systems at a minimum of 80 percent, and to attain a goal of 90 percent annually.	Annual reports show compliance consistently higher than 80% even as number of SSTS systems increases. FY24-25 recommendations include a boost in funding, including for low-income grants.	
22				6	DNR/MDA/MC	Adopt BMPs for water efficiency, water use reduction, and irrigation water management, , and prioritize them in areas of high water use intensity by agricultural irrigators, highly sensitive areas, Groundwater Management Areas (GWMAs), and highly vulnerable Drinking Water Source Management Areas (DWSMAs).	MDA uses the CWF to support an extension educator and update BMPs. MDA was able to get federal funds to develop a bigger project. DNR administers the GWMA and MDH works with community water suppliers, BWSR, and MDA on prioritizing BMPs in DWSMAs. Met Council offers grants to reduce lawn irrigation waste with updated irrigation controllers and works with MnTAP on water efficiency. Supporting MNTAP for water efficiency. It is possible to quantify improvements adopted.	
23				7	MC	Identify significantly contributing groundwater recharge areas to the aquifers in the Twin Cities Metropolitan Area by 2025, and develop protection and management strategies for these aquifers by 2034 to ensure continuous orderly and economic development.	Not started. Met Council will post a source water protection white paper for policy plan update online soon.	

	A	B	C	D	E	F	G	H
24	Goal 3:	**Surface waters are swimmable and fishable throughout the state** ****This one is the most contentious or we are doing too much; everything is priority. Are we going to take anything off the list?** **Impact/Effort Matrix**	• Prevent and reduce impairments in surface waters • Maintain and improve the health of aquatic ecosystems • Protect and restore hydrologic systems • Incorporate climate considerations into planning for water quality	1	MPCA	Fund the completion of Watershed Restoration and Protection Strategies (WRAPS) for all 80 major watersheds by 2023. Complete all necessary Total Maximum Daily Load (TMDL) reports for impaired waters. Complete round of WRAPS updates.	The MPCA has completed 78 of 80 WRAPS. The last two are expected to be approved in 2023, so this strategy will be COMPLETE. The MPCA supports "WRAPS 2" to review the previously approved one and still must complete TMDL reports on impairments under the WRAPS budget line item.	
25				2	BWSR	Fund the completion of comprehensive watershed management plans for all 80 major watersheds, including those under One Watershed One Plan, so that all plans are initiated by 2025.	Minnesota's 80 major watersheds have been consolidated into 60 total planning boundaries. Thirty-two have been approved; eight are in review; and 14 are in planning stage. Six have not started. We are ON TRACK.	
26				3	None specified	Protect 100,000 priority acres and restore 100,000 priority acres in the Upper Mississippi River headwaters basin with a combination of public and private funding to ensure high quality water by 2034.	TNC and BWSR are tracking. DNR has forestry BMP work and forest stewardship. Metrics suggestions: … (Rich) Does this need to more encompassing?	
27				4	UMN/MPCA/MDA/other?	Invest in activities and research that can accelerate improvement in water quality through new approaches (e.g., perennial crops and other “landscape drivers”, chloride management or alternatives, etc.).	We support the Forever Green Initiative (UMN/MDA), Smart Salting (MPCA), stormwater research innovations (UMN), and other? No metric here but the "portfolio mix" in the existing plan mentions spending up to five percent in this category.	
28				5	None specified	Include climate impacts as one of multiple benefits of protection and restoration, and incorporate climate resilience into comprehensive watershed management plans.	Fuzzy! We need a conversation with the interagency climate action team(s) to determine how to integrate this into water quality work.	
29				6	MDH/MPCA	Support effective science-based responses to emerging threats or contaminants of emerging concern.	Originally meant to show that we shouldn't drop everything to address politically-driven research requests based on media coverage. Possibly delete?	
30				7	PFA	Support cities to upgrade wastewater treatment facilities to address specific water quality goals by reducing the discharge of nutrients and other pollutants based on total maximum daily loads (TMDL) and regulatory requirements	This is a description of the Point Source Implementation Grant (PSIG) program. We recommend funding for this every two years. PFA has the Project Priority List and Intended Use Plan that is a priority list of PSIG candidates so demand is high.There is Council discussion about whether this should be moved to the Legislature's bonding bill. Should we specify how much of PSIG should come from the CWF?	
31				8	PFA	Support technical assistance and construction financing to help small communities replace failing septic systems with community subsurface systems	This is a description of the Small Community Wastewater program. We recommend funding for this every two years. Demand was higher a decade ago and the investment now is modest. Should we be specific about how much of demand we should meet?	
32				9	MDA/BWSR	Achieve a goal of five million acres of row crop agriculture that use cover crops or continuous living cover by 2034.	Funding by the Clean Water Fund supports this strategy. Many success stories like Forever Green, BWSR grants, soil health funding. Best metric would be U.S. Census Bureau's agricultural census, with data to be released in 2024? 2025?	
33				10	MDA	Enroll 6,500,000 acres and 5,100 Minnesota farms in the Minnesota Agricultural Water Quality Certification Program (MAWQCP) by 2030.	The program currently has 1,300+ farms enrolled covering 945,000+ acres as of 3 Mar 2023. MDA believes that we ON TRACK.	

	A	B	C	D	E	F	G	H
34				11	MDA	Fund technical assistance and local demonstration sites to assure that application of crop fertilizer uses the best available science.	This is funded through the MDA Technical Assistance Program and Nitrate in Groundwater Program. Programs work with 38 local government units on nitrate monitoring and reduction activities, and supports 25 edge-of-field water quality monitoring sites, 100 farm demonstration plots, and 30 field days and other events annually. The Council does not have a metric to know what percentage of farmers are optimizing fertilizer application. This strategy doesn't include manure but it could.	
35				12	BWSR?	Support in-lake treatment and restoration activities that only address water quality impairments and are supported by comprehensive plans, including One Watershed One Plan	BWSR has made 21 grants since 2012 for in-lake treatment (alum treatments, drawdowns, and rough fish) totalling $5,782,825.	
36				13	MPCA	Support state-federal cooperative programs, actions, and priorities outlined in the Great Lakes Restoration Initiative's Action Plan.	This was meant to validate the St. Louis River restoration and future support for the Lake Area Management Program (LAMP). The St. Louis River funding will be complete in FY24-25 and a request for LAMP did not go forward this time. Should we have a strategy that says we will prioritize outstanding resource value waters or ORVWs (Minn. R. 7050.0335)?	
37	Goal 4:	**All Minnesotans value water and take actions to sustain and protect it**	• Build capacity of local communities to protect and sustain water resources • Encourage systems and approaches that support, protect, and improve water • Provide education and outreach to inform Minnesotans' water choices • Encourage citizen and community engagement on water issues • Incorporate the needs and assets of Minnesota's diverse communities	1	CWC	Develop cultural competency on the Council to incorporate the strengths of diverse communities in Minnesota. Develop an inclusion plan by 2021 in consultation with the state's four ethnic councils (Councils for Minnesotans of African Heritage, Minnesota Council on Latino Affairs, Minnesota Indian Affairs Council, and Minnesota Council on Asian Pacific Minnesotans), Women Caring for the Land/Women Food & Ag Network, Hmong American Farmers Association, Center for Health Equity at the Minnesota Department of Health, and others.	Staff has organized guest speakers in 2020-2022 on various equity topics. We did not complete an inclusion plan. We would need some outside help to figure out what that would look like, or could take a different but unidentifed approach. Staff took State-Tribal Relations training in 3/2020 and has benefitted from MPCA Equity Committee programming.	
38				2	CWC/MPCA	Support agency efforts to inform, educate, and encourage the participation of citizens, stakeholders, and others in the protection and restoration of Minnesota's waters.16 Efforts should include the biennial Clean Water Fund Performance Report, traveling exhibits, more integrated presentation of projects and outcomes supported by the Clean Water Fund on state web sites, etc.	The Clean Water Fund supports We Are Water traveling exhibit. Council staff is working with Interagency Coordination Team (ICT) Communications Subteam on an interagency communications plan. (Currently working on revision of key messages.)	
39				3	CWC	Develop a set of questions by 2021 that can be used in occasional statewide surveys to determine the public's understanding of water resources and quality in Minnesota. The Council will work with agencies and/or the University of Minnesota on a cost-effective method of surveying Minnesotans regularly on the same questions through 2034.	Council staff worked with UMN Center for Survey Research to poll Minnesotans on views on water. There is no plan at the current time to continue that approach pending completion of the interagency communications plan.	

	A	B	C	D	E	F	G	H
40				4	CWC	Plan for program resilience after expiration of Legacy Amendment in 2034 and discourage Clean Water Fund applicants from relying on 100% CWF funding.	This might not be apprpriate as a strategy, but could be part of Guiding Values and Requirements section of the plan.	

Groundwater Restoration and Protection Strategies (GRAPS)

Carrie Raber| GRAPS Coordinator

Minnesota Department of Health

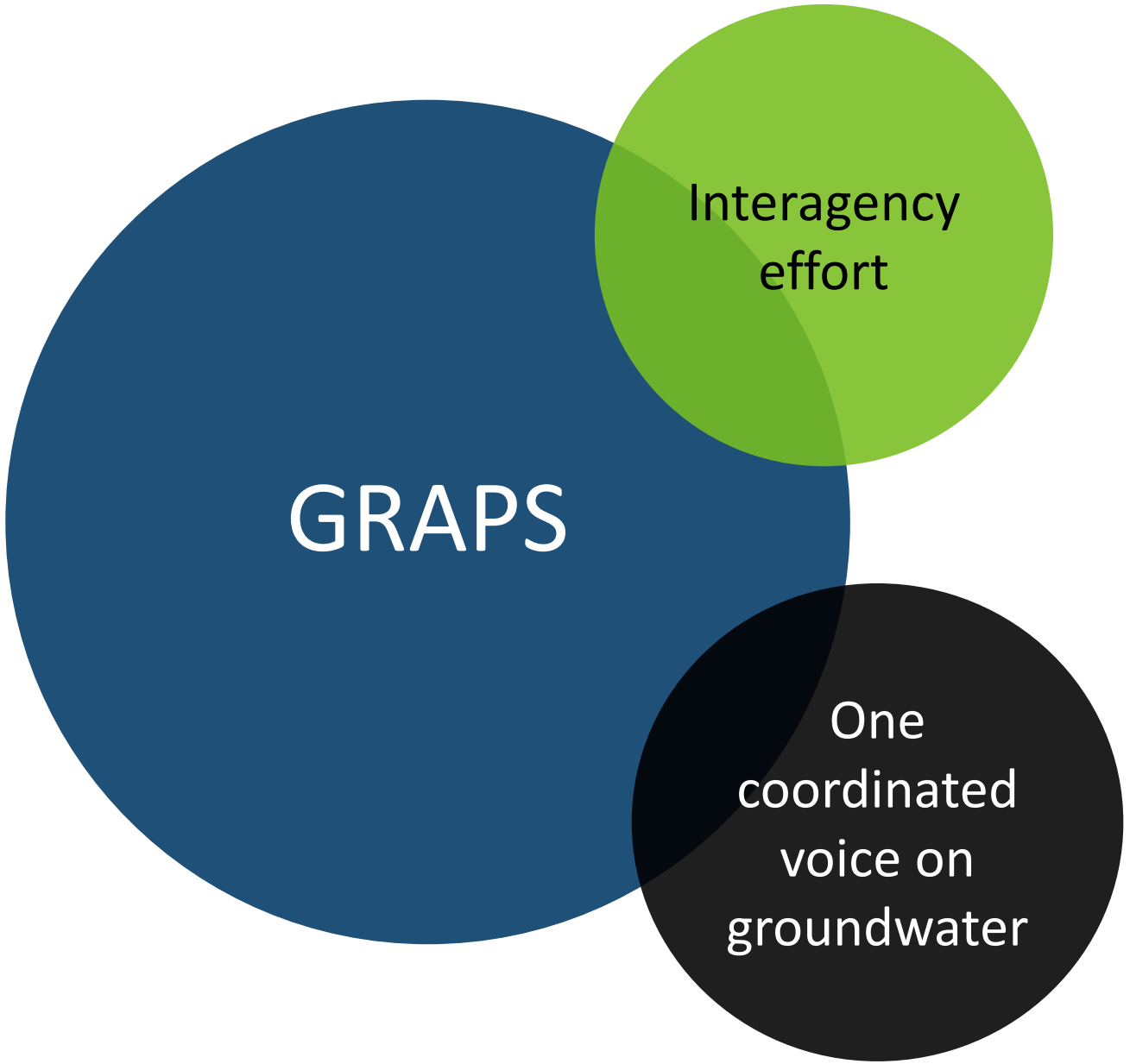
Hawk Creek – Middle Minnesota Watershed (HCMMW)

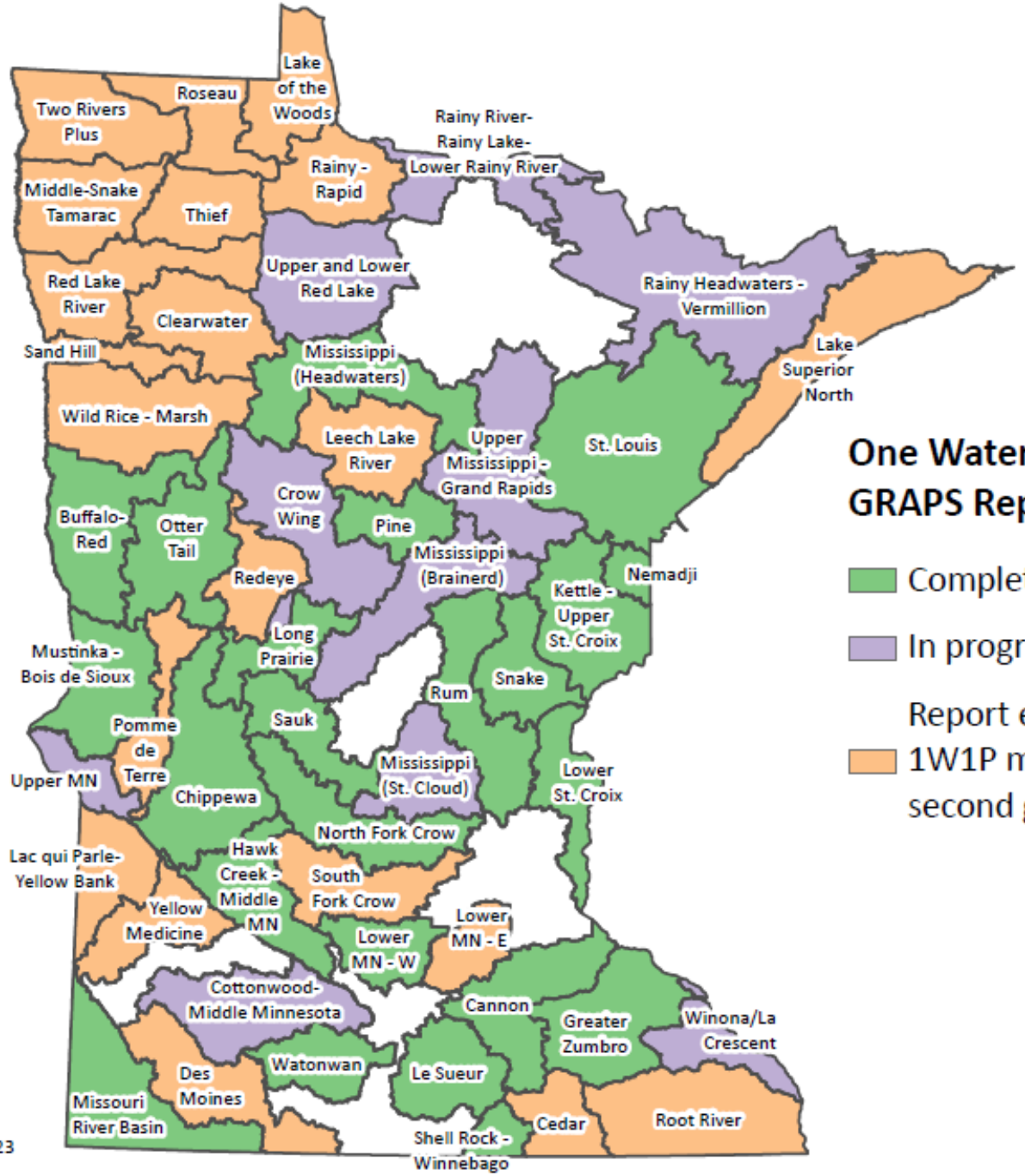
Groundwater Restoration and Protection Strategies Report

January 2020

GRAPS Report #13

MINNESOTA





One Watershed, One Plan: GRAPS Report Status

- Completed
- In progress
- Report expected by 1W1P midpoint or second generation plan

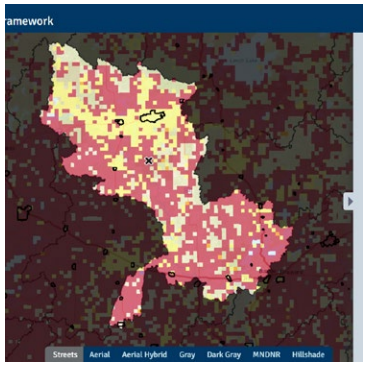
Goal to complete GRAPS reports by the midpoint of the 10-year 1W1P plans

DEPARTMENT OF HEALTH

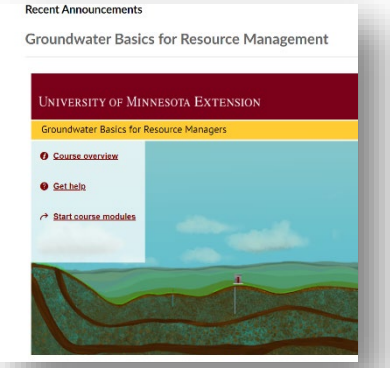
The GRAPS program encompasses multiple tools to build local capacity for groundwater

GRAPS tools for groundwater

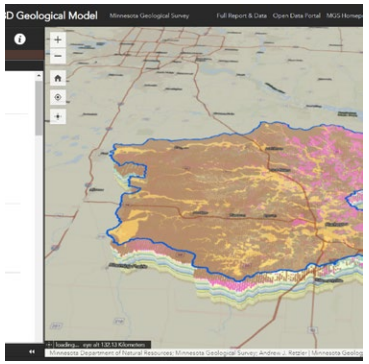
GRAPS reports



Groundwater data in the WHAF tool



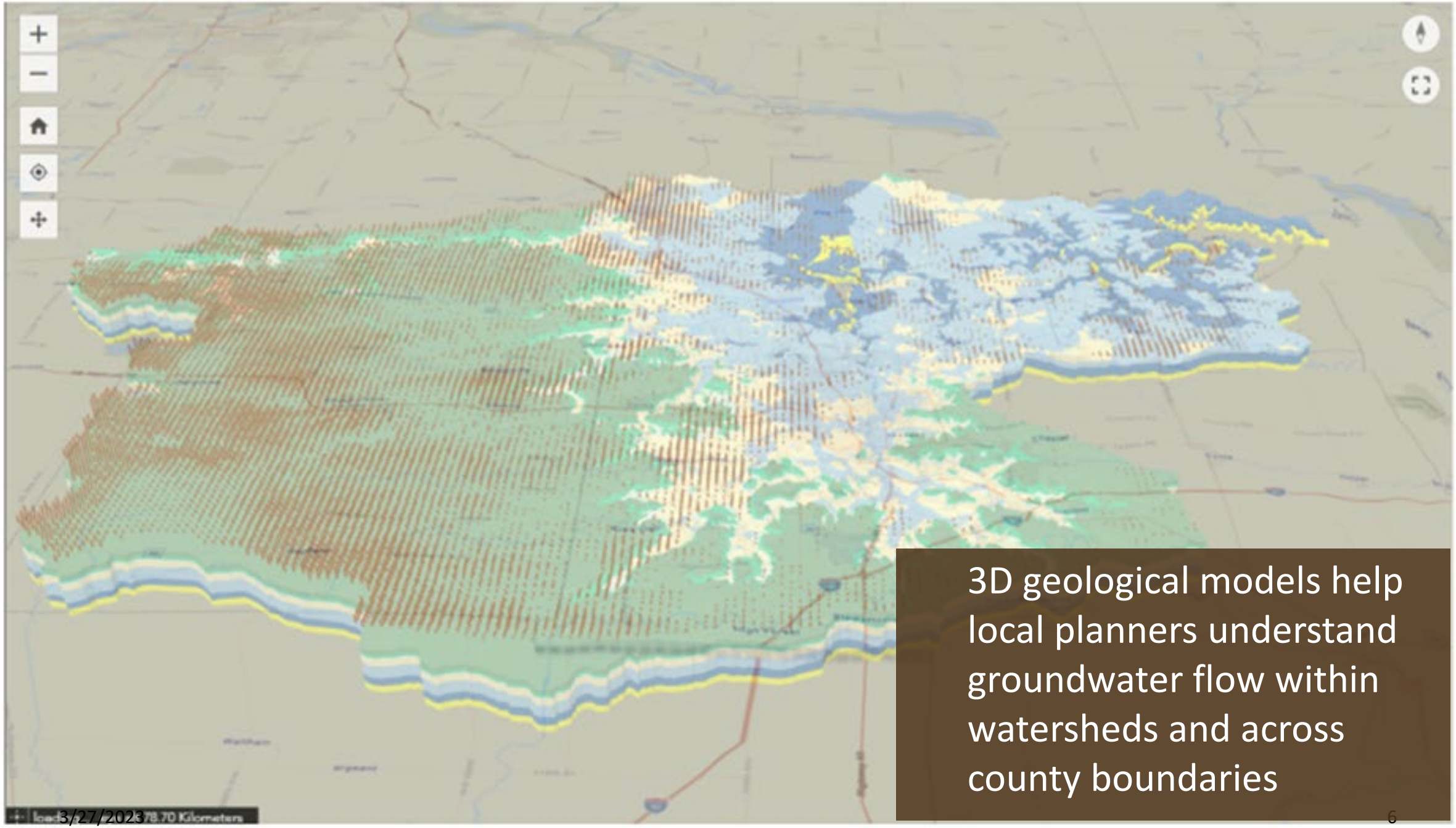
Online groundwater modules



3D geological watershed models

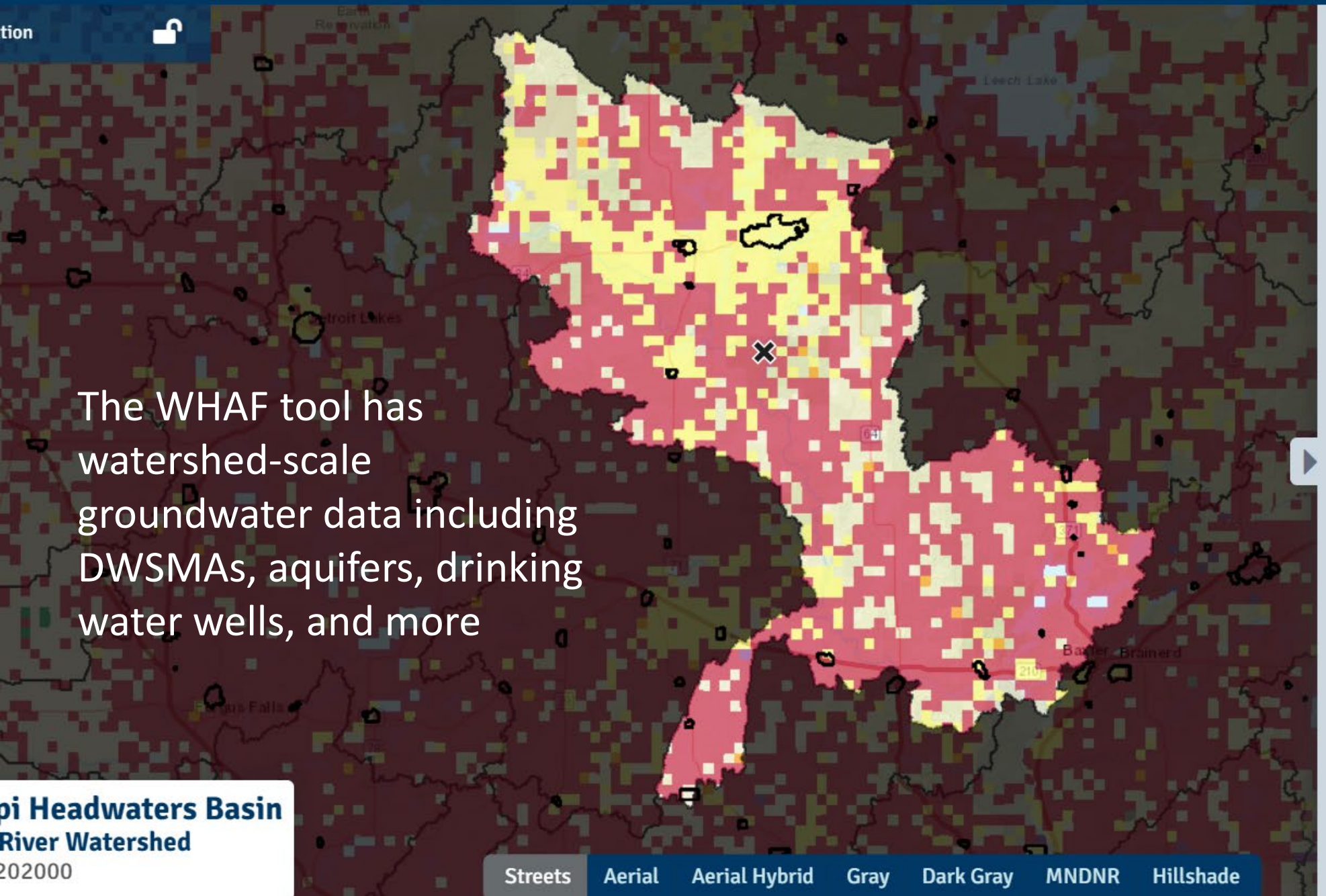
GRAPS Accelerated Implementation Grant

Technical trainings



3D geological models help local planners understand groundwater flow within watersheds and across county boundaries

rshed Health Assessment Framework



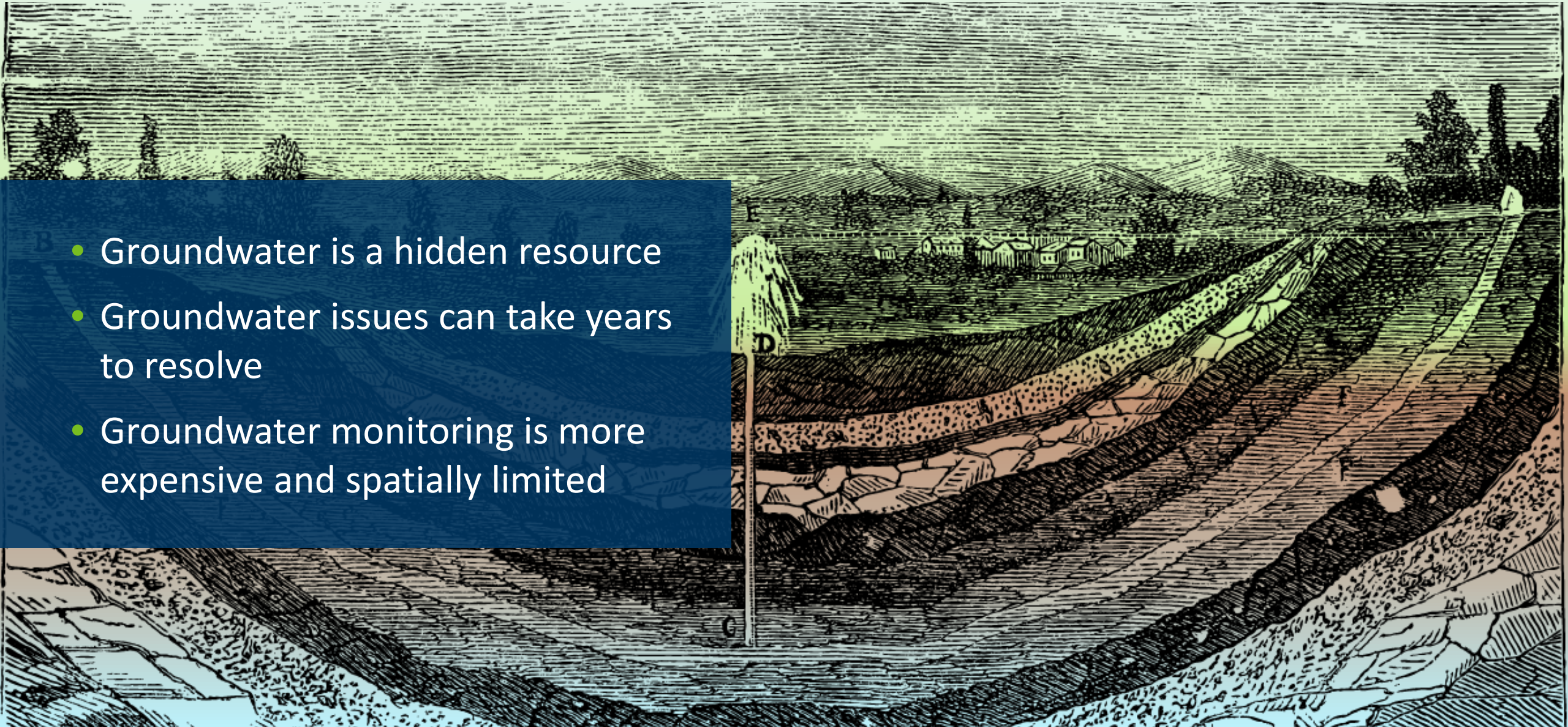
The WHAF tool has watershed-scale groundwater data including DWSMAs, aquifers, drinking water wells, and more

pi Headwaters Basin
River Watershed
202000

GRAPS Accelerated Implementation Grants

- Focus on collaborative projects that build local relationships and capacity
- Priority for regional-scale work that advances health equity

Groundwater has unique challenges compared to surface water



- Groundwater is a hidden resource
- Groundwater issues can take years to resolve
- Groundwater monitoring is more expensive and spatially limited

In conclusion

- GRAPS serves an important role in the 1W1P
- The GRAPS program encompasses multiple tools to build local capacity for groundwater
- Groundwater has unique challenges compared to surface water in the 1W1P
- Thank you for supporting our work!

BOARD OF WATER AND SOIL RESOURCES

2018 Nonpoint Priority Funding Plan

July 1, 2018 – June 30, 2020
6/29/2018

The final version of this draft document is posted on BWSR's Nonpoint Priority Funding Plan web page at www.bwsr.state.mn.us/planning/npfp as of July 1, 2018.

Clean Water Fund Interagency Coordination Team: Ali Elhassan (Met Council), Chris Elvrum (MDH), Shannon Lotthammer (MPCA), Jeff Freeman (PFA), Barb Naramore (DNR), Judy Sventek (Met Council), Doug Thomas (BWSR), Susan Stokes (MDA)

Clean Water Fund Watershed Restoration and Protection Strategies (WRAPS)/Implementation Team: Karen Jensen (Met Council), Katherine Logan (MPCA), Joe Mulcahy (Met Council), Carrie Raber (MDH), Doug Thomas (BWSR), Julie Westerlund (BWSR), Marcey Westrick (BWSR), Margaret Wagner (MDA), Barbara Weisman (DNR), Reed Larson (MPCA), Dave Wright (DNR)

BWSR Staff: Mary Juhl, Celi Haga, Angie Becker Kudelka, Doug Thomas, Marcey Westrick

Minnesota Board of Water and Soil Resources
520 Lafayette Road North
St. Paul, MN 55155-4194
651-296-3767
www.bwsr.state.mn.us

Table of Contents

Introduction

The Nonpoint Priority Funding Plan (NPFP) is a criteria-based process to prioritize Clean Water Fund nonpoint implementation investments. It provides state agencies with a coordinated, transparent, and adaptive method to ensure that Clean Water Fund implementation allocations are targeted to cost-effective actions with measurable water quality results.

Version 1.0 of the NPFP (Appendix A) was foundational and continues to provide guidance on how to prioritize nonpoint implementation actions at the state level. With two biennium of funding distributed thus far, this update does not evaluate, reassess or change the three high-level State priorities or the nine criteria established in the first version. However, BWSR is committed to working with a task force consisting of but not limited to state agencies, local governments, private organizations, and nonprofits to review and evaluate the purpose and scope of the NPFP over the course of the next 18 months.

The primary focus of this update is to:

- Provide specific examples of the progress made to date on how the NPFP is being used to guide and prioritize nonpoint implementation actions at the State level.
- Provide updated financial information from the FY20-21 biennial budget request (BBR).

The intent of this update is not to provide accountability of Clean Water Fund programs, nor track the progress made using Clean Water Funds. Two case studies are provided (on Page 15; in Section 4 of this update) as examples of efforts currently underway, demonstrating how statewide water quality goals translate to local sub-watershed actions.

Section 1: Nonpoint Priority Funding Plan Summary

1.1 Purpose

Preparation of a Nonpoint Priority Funding Plan (NPFP) is required by the *Clean Water Accountability Act* (Act). The Act placed into law the Minnesota Pollution Control Agency (MPCA) Watershed Restoration and Protection Strategy (WRAPS), which required the MPCA to produce a biennial report of progress in achieving pollutant reductions, and required the Minnesota Board of Water and Soil Resources (BWSR) to prepare a priority funding plan to prioritize how Clean Water Funds are used, with updates required on both of these reports every two years.

Specifically, the Act amends Minnesota Statutes 2012, section 114D.50 to read:

Subd. 3a. Nonpoint Priority Funding Plan.

(a) Beginning July 1, 2014, and every other year thereafter, the Board of Water and Soil Resources shall prepare and post on its Web site a priority funding plan to prioritize potential nonpoint restoration and protection actions based on available WRAPS, TMDLs and local water plans. The plan must take into account the following factors: water quality outcomes, cost-effectiveness, landowner financial need, and leverage of nonstate funding sources. The plan shall include an estimated range of costs for the prioritized actions.

(b) Consistent with the priorities listed in section 114D.20, state agencies allocating money from the clean water fund for nonpoint restoration and protection strategies shall target the money according to the priorities identified on the nonpoint priority funding plan. The allocation of money from the clean water fund to projects eligible for financial assistance under section 116.182 is not governed by the nonpoint priority funding plan.
M.S. 2013, Chapter 137, Article 2, Section 14.

1.2 Version 1.0

Version 1.0 of the NPFP (June 25, 2014) was foundational and continues to provide guidance on how to prioritize nonpoint implementation actions at the State level. The NPFP sets forth:

- High-level State priorities for investing Clean Water Fund nonpoint implementation funding
- Criteria for evaluating proposed activities for purposes of prioritizing nonpoint funding
- High-level *Keys to Implementation*
- Estimated costs for implementing nonpoint pollution reduction practices and activities

BWSR and other State agencies that use the Clean Water Fund to implement nonpoint source implementation actions are required to use the NPFP when making nonpoint investment decisions. The NPFP does not include a single scoring system with weighted criteria. Instead, it allows State agencies the flexibility to apply the NPFP priorities and criteria in ways that meet their strategic and legislative goals.

1.3 Scope of Update

Only two biennium of funding has been distributed since the first publication of the NPFP. As a result, the three high-level state priorities and the nine criteria are not being reassessed or changed in this update. Version 1.0 of the NPFP will continue to provide guidance on the prioritization of Clean Water Fund nonpoint implementation allocations for the July 1, 2018 to June 30, 2020 time frame (Appendix A). One focus of this update is to highlight progress made to date, including:

- Status update from state agencies using the NPFP
- MPCA's Watershed Restoration and Protection Strategies and program progress
- BWSR's watershed-based local water plans and program progress
- Minnesota Department of Health's (MDH) Groundwater Restoration and Protection Strategies and program progress
- New and improved tools for targeting management practices and measuring practice effectiveness

Updated financial information from the FY20-21 biennial budget request (BBR) is included in this report. Finally, two case studies were selected to show how Comprehensive Watershed Management Plans use science-based information from Total Maximum Daily Load Studies (TMDLs) and Watershed Restoration and Protection Strategies (WRAPS) to produce local lists of prioritized, targeted actions capable of achieving measurable results.

1.4 High-Level State Priorities and Criteria

Leadership from the state agencies that are tasked with protection and restoration of Minnesota's water resources came together and agreed on a set of high-level state priorities that align their programs and activities, working to reduce nonpoint source pollution as follows:

- Restore those impaired waters that are closest to meeting state water quality standards
- Protect those high-quality unimpaired waters at greatest risk of becoming impaired
- Restore and protect water resources for public use and public health, including drinking water

The first version of the NPFP established the following nine criteria as a guide for evaluating program or project activities that are under consideration for receiving nonpoint implementation funding from the Clean Water Fund. Integrating the criteria into decision-making ensures that the uses of Clean Water Funds are cost-effective and will result in measurable water quality improvements. Currently, drinking water management is integral to both groundwater and surface water restoration and protection efforts. Over the next biennium, criteria will be evaluated in relation to how they align with groundwater and drinking water projects.

- **Aligned with State Priorities:**
  Alignment of proposed activities with state priorities.
- **Locally Prioritized and Targeted:**
  Effective prioritization and targeting of proposed activities at the watershed scale.
- **Measurable Effects:**
  Capability of the proposed activities to produce measurable results at the watershed scale.
- **Multiple Benefits:**
  Secondary water quality or other environmental benefits of the proposed activities.
- **Longevity:**
  Expected lifespan of the proposed activities with proper maintenance or, for annual management practices, assurance that practices will be maintained for a specified period of time.

- **Capacity:**
  Readiness and ability of local water management authorities and partners to execute the proposed activities.
- **Leverage:**
  All non-Clean Water Fund dollars contributed for every dollar of Clean Water Fund money. Non-Clean Water Fund dollars include non-state dollars as well as state dollars from sources other than the Clean Water Fund.
- **Cost-Effectiveness:**
  Cost per unit of pollutant load reduced or prevented as compared against specific water quality goals – Clean Water Fund cost and total project cost.
- **Landowner Financial Need:**
  Increased financial assistance for low-income landowners.

Section 2: Update

While there have been advancements in the development of Watershed Restoration and Protection Strategies (WRAPS), watershed-based local water plans, and other water resource data since the first version of the NPFP was published, there is not yet a place in the state where all these pieces align. Noteworthy progress of key actions necessary for meeting clean water goals, in addition to the strategic allocation of funding, is detailed in this section.

2.1 Agency Status Update: Criteria and High Level State Priorities

The NPFP provides state agencies receiving nonpoint implementation Clean Water Funds with a process for working together to align program decisions and ensure that Clean Water Funds are used efficiently and effectively. The process can help agencies identify gaps and needs in existing programs, and connects project-related funding decisions to cost-effective water quality outcomes. Although not all agencies receive on-the-ground implementation dollars through the Clean Water Fund, their program work aligns well with, and supports, the purpose of the NPFP.

This status update is intended to share how BWSR and other agencies are working to integrate the high-level state priorities and nine criteria into their program decisions. This does not track progress made with Clean Water Funds. The Clean Water Performance Report helps clarify connections between Clean Water Funds invested, actions taken and outcomes achieved. Read the report at: https://www.pca.state.mn.us/sites/default/files/lrp-f-3sy18.pdf

Board of Water and Soil Resources

In 2016, BWSR began using the NPFP in grant and easement programs that invest funding in on-the-ground conservation. In the Clean Water Fund Request for Proposals, BWSR emphasized the three high-level state priorities and added Cost Effectiveness to the Clean Water Fund Competitive Grant and Targeted Watershed ranking criteria. The criteria aligned with state priorities, locally prioritized and targeted, measurable effects, and multiple benefits have previously been and remain in the ranking criteria. Leverage and capacity are addressed through eligibility requirements and longevity through program policy. Landowner financial need is addressed through providing increased financial assistance for low-income landowners.

Minnesota Department of Agriculture

In 2016, the MDA began using the NPFP to document how their Clean Water Fund projects and activities support specific statewide goals and keys to implementation. The Department of Agriculture's current Clean Water Fund implementation activities, including technical assistance, research and groundwater protection, align with the NPFP.

Metropolitan Council

The Metropolitan Council does not receive nonpoint source implementation funding from the Clean Water Fund. However, Clean Water funds are used to fund efforts in water supply planning and water conservation.

Minnesota Department of Natural Resources

The DNR continues to apply NPFP high-level priorities, criteria, and keys to implementation in the following ways, to activities supported by a DNR Nonpoint Restoration and Protection appropriation:

- Focusing technical assistance to local governments on clean water implementation projects that are likely to achieve measurable watershed health effects and helping apply scientific information to the selection, targeting, and design of these projects. DNR staff typically assist around 80 multi-year implementation projects in any given year.
- In the Tullibee Lakes program, applying fisheries science to target forest stewardship efforts to watersheds of high-quality lakes sensitive to degradation from development pressures. The program protects water quality by keeping forests healthy. A similar targeted approach is being applied in several southeastern Minnesota watersheds.
- Maximizing existing laws and regulations by (a) developing tools to help local governments update and strengthen local land use ordinances that protect water quality; and, (b) offering information to culvert permit applicants about the option of designing new or replacement culverts to protect floodplains, which in turn helps protect water quality and watershed health.

Minnesota Department of Health

The Department of Health's Clean Water Fund-supported initiatives focus primarily on drinking water protection and most closely align with the high-level state priority to restore and protect water resources for public use and public health, including drinking water.

Minnesota Pollution Control Agency

The high-level state priorities of the NPFP were used to develop the draft protection strategy for lakes, and are also being reviewed for the development of a protection strategy for streams. The MPCA, in cooperation with DNR, BWSR, MDA, and MDH created a protection strategy for lakes in 2015 to help systematically identify protection opportunities for unimpaired but possibly vulnerable lakes in WRAPS projects. To date, the strategy has been piloted in several watersheds in the Upper Mississippi River, Red River, Lake Superior, and Rainy River Basins to help prioritize lake protection needs.

MPCA Clean Water Funds are used for statewide monitoring and assessment, HSPF modeling of each HUC8 watershed, identification of stressors and sources of nonpoint source pollution, development of TMDL studies, research and tool development projects, and of course, the WRAPS. WRAPS strategies are heavily based on the science collected in the watershed, and NPFP priorities are incorporated.

2.2 Keys to Implementation: Status Updates

The following discussion includes updated, supplemental information for state-level programs and activities working to reduce sources of nonpoint pollution and are identified in the *Keys to Implementation;* from the NPFP, 2014-2016.

Accelerate Watershed Scale Implementation

Implementation will be most effective when Clean Water Fund money for the highest-priority actions follows local government adoption of watershed-based local water plans.

Comprehensive Watershed Management Planning Program

In 2015, the Minnesota Legislature passed Minnesota Statutes §103B.801, the Comprehensive Watershed Management Planning Program. This legislation defined the purposes and further outlined the structure for the One Watershed, One Plan Program.

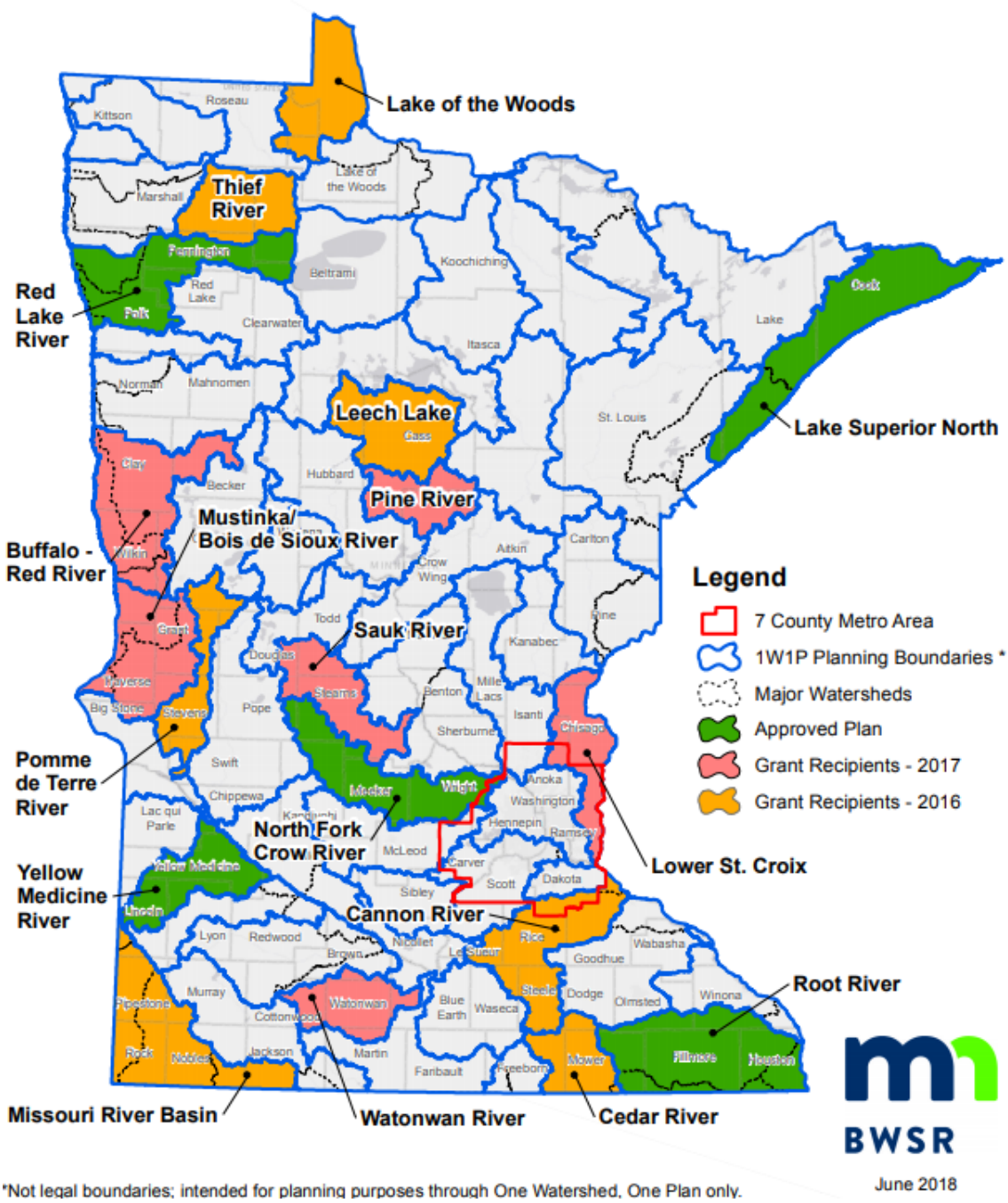
In 2016, BWSR adopted the One Watershed, One Plan *Content Requirements* and *Operating Procedures*. These documents where updated in 2018.

Five One Watershed, One Plan Pilot Projects were initiated in 2014.

- Root River Pilot Watershed (see case study on page 11 for more information about this project)
- Red Lake River Pilot Watershed
- Lake Superior Pilot Watershed
- Yellow Medicine Pilot Watershed
- North Fork Crow Pilot Watershed

All pilot projects have completed their plans and BWSR has approved them. As shown in Figure 1, there are now an additional 13 comprehensive watershed management plans underway.

Figure 1. Participating Watersheds in the One Watershed, One Plan Program



Prioritize and Target at the Watershed Scale

The key to developing watershed-based project implementation schedules and estimated costs is to first prioritize surface and groundwater strategies at the watershed scale and then target practices within subwatersheds or similar-scale units, using the best available science.

Surface Water Quality Models & Tools Interagency Discussion

Models and tools are useful for watershed prioritization and for identifying potential impacts to surface and groundwater. They are often capable of targeting which actions, locations, and management practices are most effective at addressing water quality goals and project objectives. Models and tools are used to project outcomes of specific actions, locations, and management practices to forecast measurable results. Using these models and tools together with the best available science can efficiently inform Minnesota's Water Quality Framework.
In order to develop a broader understanding of how Minnesota's agencies are using models and tools for watershed prioritization and implementation targeted to critical areas that provide the largest water quality benefits, the Clean Water Fund Interagency Research Team hosted the Surface Water Quality Models & Tools Interagency Discussion in February 2016. The event, consisting of 14 coordinated presentations and attended by over 250 participants, promoted dialogue and enhanced collaboration between state employees involved in Minnesota's Water Management Framework activities through the sharing of information about surface water quality models and tools currently being used or funded by agency programs.

Measure Results at the Watershed Scale

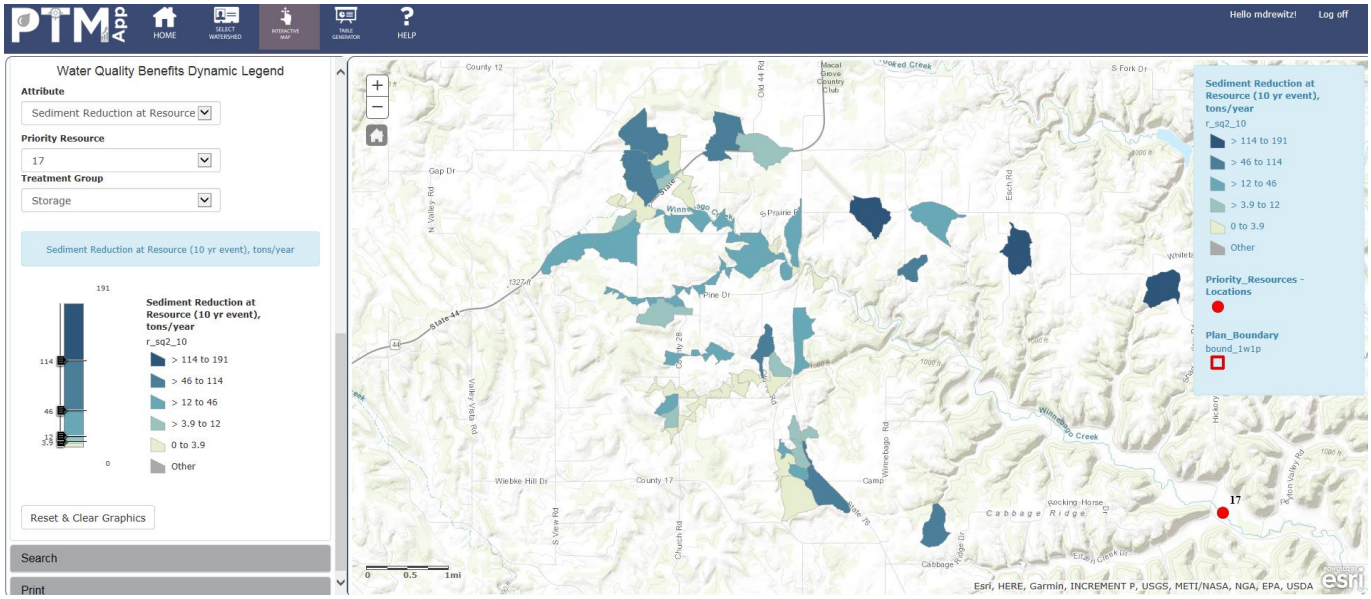
Similar to prioritizing and targeting, measuring results is best achieved at the watershed scale. Watershed-based local water plans capable of producing measurable results are essential to adaptive management and accountability to the public.

Accountability Report

As required by the Act, MPCA will provide the second accountability report in July 2018, and every other year thereafter. The report will describe the progress toward implementation milestones for Minnesota watersheds that align with completed WRAPS. In the future, MPCA will relate the progress made in the watersheds to the reduction strategies identified in the Minnesota Nutrient Reduction Strategy Report, and other statewide efforts.

Prioritization, Targeting, and Measuring Water Quality Improvement Application (PTMA)

A newer tool that is now available, and leverages scientific data is the PTMA. The PTMA is a GIS web and desktop application that can be used by local decision makers to prioritize subwatersheds for implementation, target specific fields for best management practices, and project water quality improvement by cost and expected load reductions within the watershed. An example of the PTMA is included in the Root River One Watershed, One Plan case study.



An example of PTM App.

Use Science-Based Information

A key to developing prioritized implementation schedules for projects with targeted actions, and measuring results of these actions, is to incorporate the wealth of science-based information, summarized in WRAPS, other technical reports, and practice effectiveness research into local water planning and project development processes.

The goal of the One Watershed, One Plan Program is to align local water planning on major watershed boundaries with watershed-based WRAPS, GRAPS, and state strategies towards prioritized, targeted, and measurable implementation plans.

Watershed Restoration and Protection Strategies (WRAPS)

According to the MPCA's 2018 Environmental and Performance Measures' Dashboard (https://www.pca.state.mn.us/sites/default/files/Dashboard-MPCA-2018.pdf), watershed monitoring has been completed in 100 percent of the 80 watersheds. Currently, all 80 watersheds have WRAPS projects underway and 86 percent of the 80 watershed have a completed assessment.

Protection Strategies in WRAPS

Guidance has been developed to help systematically identify protection opportunities in WRAPS projects, local water plans, and/or 1W1P that follow the priorities outlined in the NPFP. Ranked, prioritized lists are now available for lakes and streams in need of protection efforts. For each lake, a phosphorus loading reduction target was computed with the expectation that local governments might find the estimates useful for their lake conservation efforts. The goal was to identify lakes that were not resilient to additional phosphorus loading; the most sensitive lakes identified would most likely see substantial declines in water clarity with increasing nutrient pollution load. For each stream the risk of the biological community becoming impaired was determined. Analysis included a review of near shore and contributing watershed risks and level of protection already underway in the watershed. Data is provided to the WRAPS process and is also available through the DNR's Watershed Health Assessment Framework.

Groundwater Restoration and Protection Strategies (GRAPS)

GRAPS reports are an analogue to the WRAPS reports. The GRAPS Program is an interagency effort led by the Minnesota Department of Health. While the focus of the WRAPS reports are on assessment and diagnostic work that can be used to prioritize actions and strategies for implementation relative to surface water, the emphasis for GRAPS reporting is groundwater and drinking water resources.

These reports will summarize known conditions based on existing data and information from state agencies. One of the primary objectives is to provide a baseline understanding of groundwater conditions and associated resource management concerns for the watershed. The expectation is that the information and strategies identified will aid local prioritization and targeting efforts to protect and restore groundwater resources. Five GRAPS reports have been completed (Pine River, North Fork Crow River, Cannon River, Missouri River, and the Lower St. Croix River) and four are currently underway (Buffalo Red River, Mustinka and Bois de Sioux, Sauk River, and the Watonwan River) .

Tillage and Erosion Survey Program

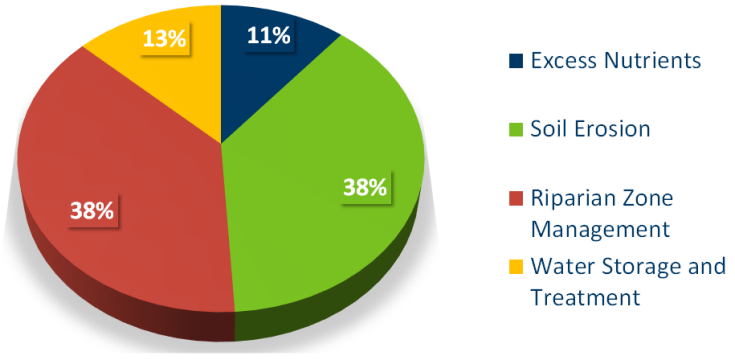
The purpose of this program is to systematically collect spring crop residue and tillage practice data, fall cover crop adoption rates, and daily and annual cropland soil erosion estimates in order to analyze trends in adoption and retention of agricultural soil and water management practices. The University of Minnesota Department of Soil, Water, and Climate Department is leading this project, along with assistance from staff at the Iowa State University Department of Biosystems and Agricultural Engineering Department. Data has been collected and analyzed for 2016 and 2017 crop residue levels and cover crop adoption rates with preliminary data being reviewed by project stakeholders. Later in 2018, the Daily Erosion Project website for Minnesota will be deployed for counties in Minnesota that have a minimum of 30% cropland acres. For more information, go to the BWSRs Soils webpage for future updates.

Build Local Capacity

The work of nonpoint implementation rests on the shoulders of local governments. As WRAPS proliferate and local water planning begins shifting to a watershed-based framework, success is dependent on highly capable local government staff to develop, prioritize, and target projects at the local level.

Build Staffing Capacity for Soil and Water Conservation Districts (SWCDs)

SWCDs have received $44 million in increased funding from FY2016-FY2018 to build local capacity. The increase recognizes the role SWCDs play in providing technical assistance to private landowners and focuses on increasing SWCD capacity to address four resource concern areas—Soil Erosion, Riparian Zone Management, Water Storage and Treatment, and Excess Nutrients.



Soil and Water Conservation District Capacity Funding by Resource Areas

Technical Service Area (TSA) Shared Services

Funding has been made available since 2016 to help SWCDs provide technical and engineering assistance to landowners. These funds are used for building regional capacity across the state to efficiently accelerate on-the-ground projects and practices that improve or protect water resources.

Willie Peters of Scott Soil & Water Conservation District worked with the NRCS and SWCD staff during a grassed waterway training last September in Scott County.

Technical Training and Certification Strategy

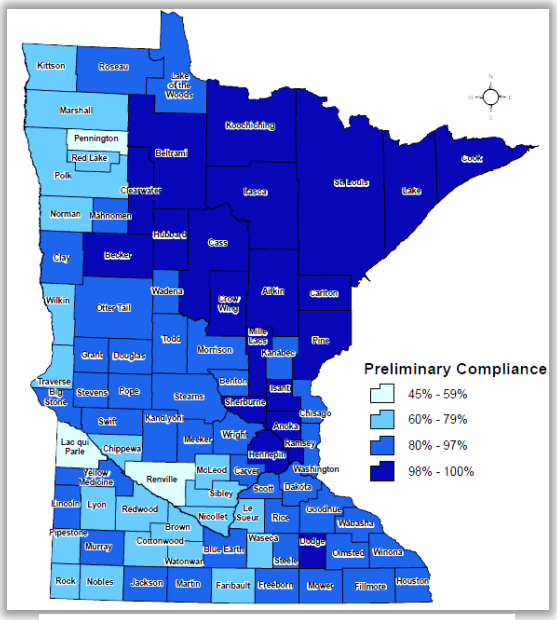
BWSR, the Minnesota Association of Soil and Water Conservation Districts, the Minnesota Association of Conservation District Employees, and the Natural Resources Conservation Service are committed to providing resources for increased technical training and certification of local SWCD staff to maintain and enhance conservation. In 2018, BWSR expanded the cadre of technical trainers in the Minnesota Conservation Partnership by hiring two regional training engineers and two regional training conservationists.

Maximize Existing Laws and Regulations

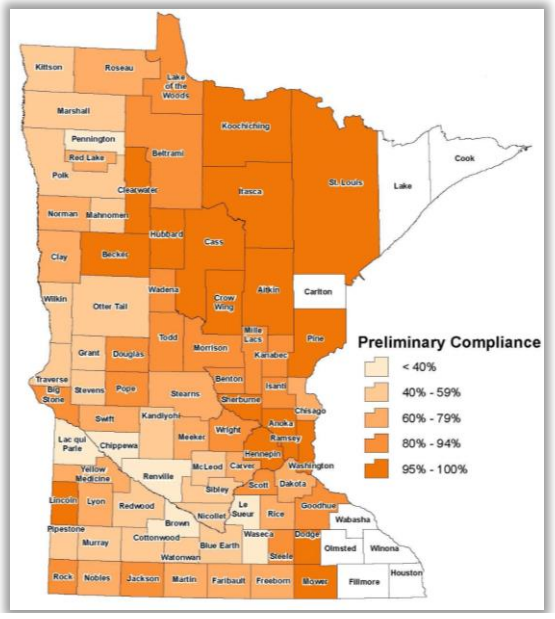
Customary approaches to nonpoint pollution implementation include regulation as well as financial incentives and education. A key to developing effective Watershed Restoration and Protection Strategies is maximizing the effectiveness of existing laws and regulations.

Buffer Law

Governor Mark Dayton's landmark buffer initiative was signed into law in 2015 and amended in 2016. The law establishes perennial vegetation buffers along rivers, streams, and ditches that will help filter out phosphorus, nitrogen, and sediment.



Statewide, compliance numbers for Public Waters have now exceeded 98%.



The Public Ditch compliance is November 1, 2018 and preliminary statewide compliance is 73%.

Support Innovative Non-Regulatory Approaches

One of several keys to leveraging Clean Water Fund implementation money is to support the development of market-driven and reward-driven approaches.

Minnesota Agricultural Water Quality Certification Program (MAWQCP)

This program is the product of a state-federal partnership that includes the MDA, MPCA, BWSR, DNR, the U.S. Department of Agriculture's Natural Resource Conservation Service, and the U.S. Environmental Protection Agency. The MAWQCP has transitioned from its initial four pilot areas to a program available to all farmers statewide. It is a voluntary program that supports the implementation of conservation practices on a field-by-field, whole-farm basis through its process of identifying and mitigating agricultural risks to water quality. The MAWQCP is incorporated in the Minnesota Nutrient Reduction Strategy as a key strategy for increasing the adoption of Minnesota's Agricultural Best Management Practices.

Integrate Hydrologic Management Systems into Watershed Management Plans

Much of Minnesota's natural hydrology has been altered for agricultural, forestry, urban/suburban, and industrial development. Increased runoff volumes and rates – due to drainage, removal of perennial vegetation, surface water alterations, and the addition of impervious surfaces – contribute significantly to water quality problems.

Multipurpose Drainage Management Program

This BWSR Clean Water Fund grant program was established in 2016 and continues to target multipurpose drainage management for priority Chapter 103E drainage systems and the associated watersheds. Specific purposes include reducing erosion and sedimentation, detaining runoff to reduce peak flows and flooding, improving water quality and decreasing vulnerabilities to extreme rainfall, while protecting drainage system efficiency and reducing drainage system maintenance. This program integrates public and private funding for these purposes through project partnerships between county and watershed district drainage authorities and soil and water conservation districts.

Section 3: Estimated Cost Updates

Biennial Budget Request

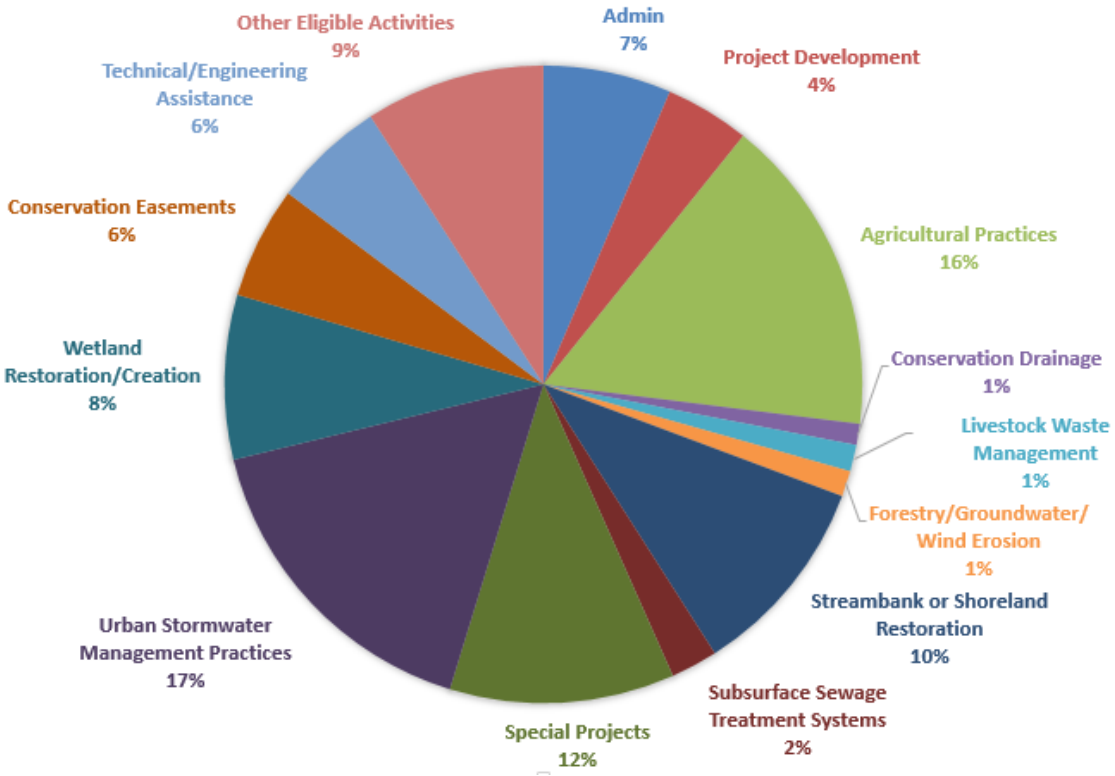
The NPFP law states "the plan shall include an estimated range of costs for the prioritized actions." Meeting this requirement will be a challenge until the state is blanketed by watershed-based local water plans that incorporate the best available WRAPS and pre-WRAPS information and contain project implementation schedules with estimated costs. Presently, the best source of data for estimating nonpoint implementation costs for the state is BWSR's Biennial Budget Request (BBR).

The BBR is a process for collecting data voluntarily submitted by local governments based on local water plans. The Biennial Budget Request reflects the diversity of water resource and conservation concerns across Minnesota. Local governments are asked to provide their best estimate of the projects and activities that could be implemented during the next biennium along with the most likely source of the funds available. The bulk of the requests are for existing programs, including regulatory administration and technical/financial assistance to landowners along with Clean Water Fund opportunities with a primary emphasis on water quality. For all categories and programs, the amount requested across the state exceeds the anticipated amount of funding currently available.

To be included in the estimate for the NPFP, projects have to directly address water quality priorities or strategies identified in local water plans, TMDL studies and implementation plans, WRAPS, surface water intake plans, or wellhead management plans. They should be able to realistically be "shovel ready" and accomplished during the FY 2020-21 biennium. In addition to data about activities eligible for funding from BWSR, the BBR also collects data about activities eligible for funding from other state agencies.

For the FY 2020-21 biennium, the total estimated statewide cost to implement a wide range of high-priority, shovel-ready nonpoint activities that are eligible for funding through appropriations to BWSR and other State agencies is more than $408 million or $204 million per year (Fig. 1). Clean Water Fund implementation requests make up over half of that total amount: $239 million for the biennium or approximately $120 million per year. Local government participation in statewide data collection, community engagement, and future water management planning using Clean Water Funds is included in the overall BBR request.

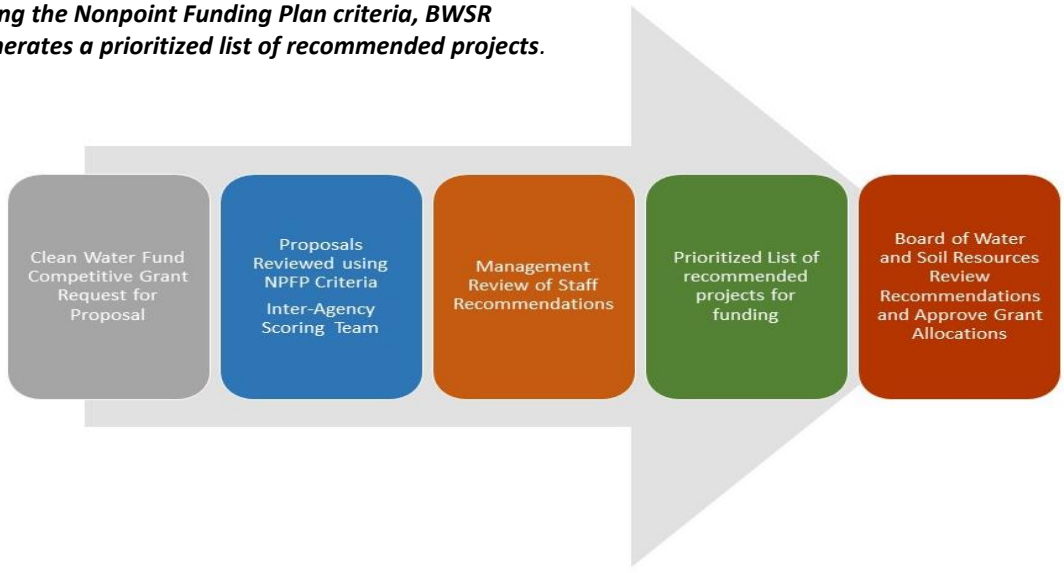
Figure 1. Statewide estimated costs to implement various Clean Water Fund eligible nonpoint activities during the FY 2020-21.



Clean Water Fund Competitive Grants

The BWSR Clean Water Fund Competitive Grants Program publishes an annual request for proposals for projects that protect, enhance, and restore water quality in lakes, rivers, and streams in addition to protecting ground water and drinking water sources from degradation. To be eligible, proposals must demonstrate significant, measureable project outputs and outcomes that will help achieve these water quality objectives.

Using the Nonpoint Funding Plan criteria, BWSR generates a prioritized list of recommended projects.



Section 4: Case Studies

Minnesota is still early in the process of transitioning to statewide coverage of comprehensive watershed management plans. These plans, grounded in science-based information collected and analyzed by the state, are a critical part of Minnesota's Water Management Framework. The result will be watershed-based implementation actions that align with state priorities, are targeted to the most critical areas of the landscape, and are capable of achieving measurable water quality results. When the statewide cycle is complete, each watershed planning boundary will have a detailed 10-year implementation plan.

While there is not statewide coverage yet, several local governments throughout the state do have comprehensive watershed management plans. The three case studies below are provided as examples of efforts currently underway, demonstrating how statewide water quality goals translate to local sub-watershed actions.

Root River One Watershed, One Plan Pilot Project

The Root River in Southeast Minnesota contains some of the most diverse natural and geologic resources in Minnesota. This diversity makes the Root River excellent for trout fishing, hunting, hiking and biking. With its scenic bluffs and deeply carved river valleys, the outdoor recreation associated with the river is a significant driver of the local economy, drawing visitors from the Upper Midwest. However, the very features that make this river system unique also make it vulnerable to nonpoint source pollution.

The watershed is underlain by karst geology characterized by thin soils over soluble limestone and dolomite bedrock. Karst landscape features include sinkholes, springs, caves and disappearing streams that provide complex interconnections between surface water and groundwater. Surface contaminants can bypass soil filtration processes and quickly reach karst aquifers used for drinking water.

The steep landscape is susceptible to heavy water runoff, soil erosion, and nutrient leaching, which if unchecked could degrade the river. Keeping the Root River healthy is a top priority for local governments in Southeast Minnesota. Doing so will help sustain and enhance recreation opportunities and tourism while preventing some of the worst impacts of flooding.

Watershed Planning

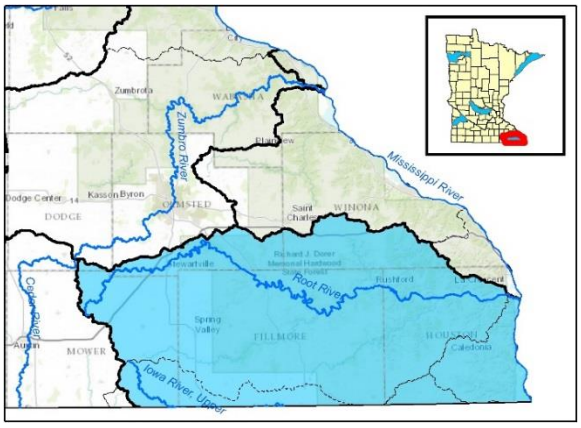
Establishing plans with clear implementation timelines, milestones, and cost estimates that will address the largest resource threats and provide the greatest environmental benefit unique to each watershed is one of the guiding principles of the One Watershed, One Plan Program.

In 2014, the Root River watershed was selected by BWSR as a One Watershed, One Plan pilot project; to demonstrate the transition from county-based water management planning into a comprehensive watershed management approach. The Root River Watershed One Watershed, One Plan, approved in December of 2016, was developed by a coalition of counties, soil and water conservation districts, and the Crooked Creek Watershed: http://www.fillmoreswcd.org/rootRiverWatershed.html.

Science-Based Watershed Assessment

As part of Minnesota's Watershed Approach, intensive watershed monitoring and stressor identification were performed for the Root River watershed by the MPCA beginning in 2008. Results from this monitoring data evaluation were used to inform the WRAPS. These strategies, including associated scales of adoption and

timelines, are based on what is likely needed to meet the water quality goals for restoration and protection within the Root River watershed.



The primary assessment findings indicate that nonpoint source pollution is the main source of water quality problems in the watershed. Recommendations include reducing sediment, bacteria, and nitrate levels as well as restoring habitat. For the purposes of this case study, a subwatershed of the Root River, the South Fork, will be the focus. In the South Fork Root River, poor macroinvertebrate communities and high suspended sediment concentrations are the main issues identified in the draft WRAPS. Nitrate was also identified as one of the stressors for the macroinvertebrate communities.

Reduction Goals

The WRAPS was not final when the One Watershed, One Plan pilot began, so numeric reduction goals are not yet established. However, reduction goals are incorporated into the Plan using surrogate water quality goals from the Minnesota's Nutrient Reduction Strategy. The Minnesota Nitrogen Fertilizer Management Plan includes groundwater goals that are applicable to the watershed. Those goals are reflected in the current draft of the plan. For example, for the South Fork Root River planning region, water quality goals were set at 45% reduction in sediment and 45% reduction in nitrogen to meet identified water quality goals.

Strategies

The WRAPS identified the following primary strategies for improving water quality within the South Fork Root River:

- Pasture and Nutrient Management
- Increased Living Cover
- Soil Erosion Control and Improving Soil Health
- Water Retention and Treatment
- Streambank Protection

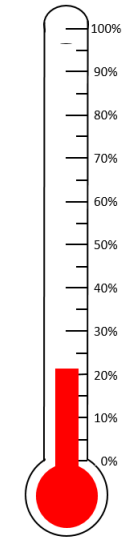
One Watershed, One Plan

For the Root River watershed, to ensure progress toward achieving the goals for the South Fork Root River, action items are consistent with recommendations identified in the Nutrient Reduction Strategy and the WRAPS and include such actions as increasing water storage and minimizing erosion.
Measurable goals were established for the Root River, using the goals from the Nitrogen Fertilizer Management Plan and Nutrient Reduction Strategy. Using the PTMapp, the benefits of the actions listed in the implementation plan can be compared to the measurable goals at one or more locations. The estimated benefits of the targeted implementation plan can then be compared to water quality goals from watershed, State, or regional strategies, such as those found in the State Nutrient Reduction Strategy or the Root River Watershed WRAPS.

The results of this detailed analysis, conducted by local governments, estimate that implementing the 100 most effective practices for both sediment and nutrients would provide a 21% of the reductions needed to reach the sediment reduction goal for the South Fork Root River set by the Root River Watershed One Watershed, One Plan (**Table 1**).

Table 1:

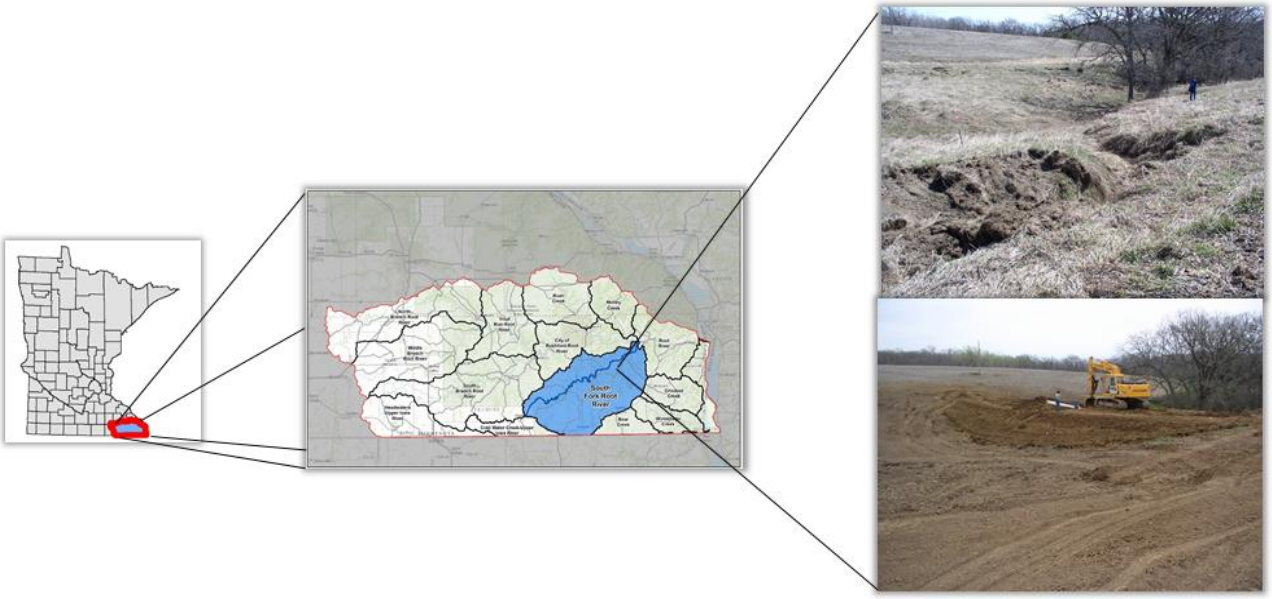
South Fork Root River	Sediment (tons/yr.)
Current Estimated Load	69,602
Desired Future Condition Goal (% reduction)	45
Goal Load Reduction (mass)	31,321
10 – year Plan Estimated Load Reduction	6,440
10- year Plan Progress toward desired future condition	21



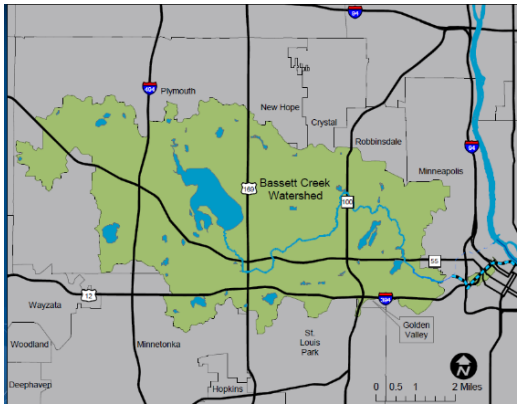
21% of goal

Watershed Based Funding

Reducing soil erosion through gully stabilization projects, like the one pictured below in the Root River, are one example of projects that are identified as a strategy in the WRAPS, an action item in the One Watershed, One Plan implementation plan, and then submitted as part of their work plan for the Clean Water Fund Watershed-Based Funding Pilot Program. This funding will help achieve 6% of the 10-year sediment reduction goal for the South Fork of the Root River.



Bassett Creek Watershed Management Commission



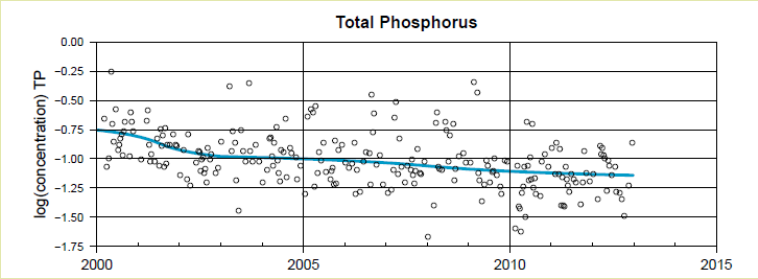
Bassett Creek is located in the north central metropolitan area of Hennepin County and is a tributary to the Mississippi River. The creek's headwaters are at Medicine Lake, the second largest lake in Hennepin County and a major recreational resource for the area that includes French Regional Park, public beaches, and a public boat landing.

The Bassett Creek Watershed Management Commission (BCWMC) has been working collaboratively with State and local stakeholders to improve the water quality of Medicine Lake and Bassett Creek for many years as part of its comprehensive watershed planning efforts.

Watershed Planning

The BCWMC has spent the past 10 years actively using their Capital Improvement Plan to improve water resources within the watershed. Many implementation actions have occurred, including the construction of water quality basins and innovative stormwater practices upstream of lakes and perform streambank restoration projects along Bassett Creek and its tributaries.

The Metropolitan Council analyzed monitoring data collected at the outlet of Bassett Creek over a 15-year period. This trend analysis indicates a downward trend in both sediment and phosphorus concentration since 2000 and thus improving water quality in the creek.



**Metropolitan Council. 2014. Bassett Creek. In Comprehensive water quality assessment of select metropolitan area streams. St. Paul: Metropolitan Council.*

Science-Based Watershed Assessment

The BCWMC has been collecting monitoring information within the watershed since the 1970s and its partner, the Metropolitan Council, has collected water quality and continuous flow data at the watershed outlet since 2000; as part of the WOMPII monitoring program. Extensive monitoring data and computer models have been used to understand the relationship between pollutant sources and water quality within watershed. Based on this information, it was determined that Bassett Creek is impaired from Medicine Lake to the Mississippi River for aquatic life due to stressors affecting the fish community, excess chloride, and aquatic recreation due to high fecal coliform counts. In addition, Medicine Lake is impaired for excess nutrients. The vast majority of pollution reaching the BCWMC waters comes from nonpoint sources.

The BCWMC completed a Resource Management Plan in 2009 for water quality improvement projects within the watershed. In 2010, a Total Maximum Daily Load (TMDL) study was completed on Medicine Lake to determine the amount of reduction in phosphorus necessary to improve or maintain water transparency and reduce algal blooms.

Reduction Goals

The Medicine Lake TMDL identified the need for a 28% reduction in phosphorus (1,287 pounds per year) in order to restore the lake and meet water quality standards.

Strategies

The implementation strategy for the Medicine Lake TMDL describes actions necessary to achieve these reductions goals and include:

- Water quality retrofits to existing stormwater ponds;
- Construction of the West Medicine Lake water quality ponds;
- Reduction in impervious area;
- New wet pond at downstream end of each sub-watershed;
- Bioretention, rain gardens, soil restoration;
- Continued streambank stabilization efforts; and
- Continued shoreline restoration efforts.

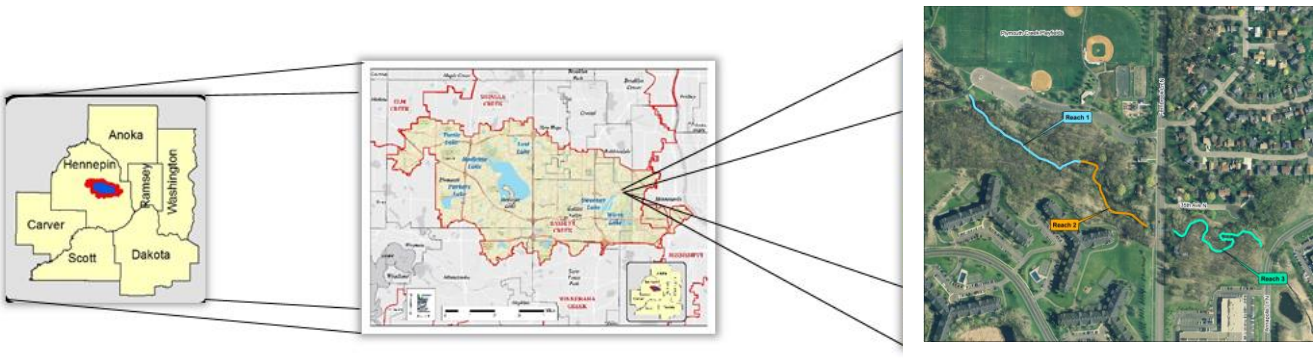
Comprehensive Watershed Management Plan

In 2015, the BCWMC updated their Watershed Management Plan (Plan). This Plan outlines applicable regulations, assesses watershed-wide and resource-specific issues, sets goals and policies for the BCWMC, and lists implementation tasks to achieve the goals. The Plan includes a comprehensive list of the projects and programs that comprise the implementation program. Specifically, the BCWMC identified strategic waterbodies, such as Medicine Lake, and associated implementation actions consistent with the TMDL.

Medicine Lake		
ML-12	Projects address phosphorus load reduction requirements in Medicine Lake TMDL	Medley Park Stormwater Treatment Facility, Golden Valley
ML-14 [3]		Medicine Lake shoreland restoration
ML-15		Wet pond (0.5 acre) at downstream end of each major subwatershed
ML-16		Water quality retrofits to existing ponds upstream of Medicine Lake
ML-17		In-lake alum treatment (Option 18 in Medicine Lake Plan)
ML-19 [4]		Chemical treatment of inflow to Medicine Lake from watershed
ML-20		Mt. Olivet Stream Restoration Project
ML-21		Jevne Park Stormwater Pond, City of Medicine Lake to alleviate flooding/improve water quality
Plymouth Creek		
2017CR-P [5]		Plymouth Creek Restoration, from Annapolis Lane to 2,500 feet upstream (east) of Annapolis Lane to reduce phosphorus and sediment loading, and improve habitat

FY2018 Clean Water Fund Grant

In 2017, the Bassett Creek Water Management Commission received Clean Water Funds to restore a portion of Plymouth Creek. The project will improve water quality in Plymouth Creek and Medicine Lake, the creek's primary receiving water and is estimated to remove 52 pounds per year of total phosphorus. The estimated cost of this project is $860,000. The BCWMC was awarded a $400,000 Clean Water Fund grant and a $50,000 Opportunity Grant from Hennepin County.



Appendix A

BOARD OF WATER AND SOIL RESOURCES

Memorandum

Date: March 10th, 2022

To: Paul Gardner, Executive Director, Clean Water Council

John Barten, Chair, Clean Water Council

Jen Kader, Vice Chair, Clean Water Council

From: Justin Hanson, Assistant Director of Regional Operations

Non-Point Priority Funding Plan and Clean Water Council Strategic Plan

The purpose of this memorandum is to provide background to the Clean Water Council on the Nonpoint Priority Funding Plan and ask the council to consider an alignment with its upcoming update to the Clean Water Council's strategic plan.

Background

In 2013, the Nonpoint Priority Funding Plan (NPFP) was established with the passage of the Clean Water Accountability Act. The authors initially intended that the NPFP's would provide a criteria-based process to prioritize Clean Water Fund nonpoint implementation investments. In June 2014, BWSR's Board approved the first NPFP. The first version and subsequent versions established the following four tenets: 1) High-level state priorities for investing CWF nonpoint implementation funding. 2) High-level keys to implementation. 3) Criteria for evaluating proposed activities for purposes of prioritizing nonpoint funding. 4) Estimated costs for implementing nonpoint activities.

In 2019, the Minnesota Legislature passed a package of statutory policy changes in Minnesota Statues Chapters 103B and 114D. These changes took effect on August 1, 2019 and are referred to as "coordinated watershed management." One change was the addition of Minnesota Statue 114D.47 Nonpoint Funding Alternative. This new language states, "Notwithstanding section 114D.50, subdivision 3a, the Board of Water and Soil Resources may, by board order, establish alternative timelines or content for the priority funding plan for nonpoint sources under section 114D.50, subdivision 3a, and may use information from comprehensive watershed management plans or comprehensive local water management plans to estimate or summarize costs."

In 2021, BWSR's board passed Board Order 21-260 which extended the date for updating the Nonpoint Priority Funding Plan (NPFP) to December 31, 2023. This order also authorized staff to revise the NPFP with alternative content based on a) the "coordinated watershed management" approach and other changes to MN Statutes Chapters 103B and 114D, b) linking to local watershed management plans which are locally driven and state supported, c) the ongoing transition from the traditional Clean Water Fund competitive grants to

noncompetitive watershed-based implementation funding approach, and d) the connection to the Clean Water Council's 2020 Strategic Plan and input from agencies and stakeholders.

Consideration

With the Clean Water Council beginning the process of updating their Strategic Plan, BWSR believes there is an opportunity to combine the tenets of the original purpose of the NPFP with the Council's strategic plan. We believe this would add value in the following ways:

- By eliminating redundant state plans regarding the prioritization of nonpoint implementation investments with Clean Water Funds.
- Both the CWC Strategic Plan and the NPFP have similar audiences and stakeholders. By combining the two plans, we can more effectively use staff and stakeholder time that is invested into the revision process.
- Incorporating the Non Point priorities into the strategic planning process will elevate the discussion of non point priorities into future Clean Water Counsel priorities.

Overview: Nonpoint Priority Funding Plan 2022-2023 Revision

What is the NPFP?

In 2013, the Nonpoint Priority Funding Plan (NPFP) was established with the passage of the Clean Water Accountability Act. The NPFP identifies priorities for targeting Clean Water Fund (CWF) money for nonpoint restoration and protection activities. State agencies must use the NPFP when allocating money from the CWF.

What do we need?

The law requires the Minnesota Board of Water and Soil Resources (BWSR) to "*prepare and post on its website a priority funding plan to prioritize potential nonpoint restoration and protection actions based on available WRAPS, TMDLs, and local water plans. The plan must take into account the following factors: water quality outcomes, cost-effectiveness, landowner financial need, and leverage of nonstate funding sources. The plan shall include an estimated range of costs for the prioritized actions.*"

Consistent with priorities listed in section 114D.20, "*state agencies allocating money from the clean water fund for nonpoint restoration and protection strategies shall target the money according to the priorities identified in the nonpoint priority funding plan. The allocation of money from the clean water fund to projects eligible for financial assistance under section 116.182 is not governed by the nonpoint priority funding plan.*" (Laws of Minnesota 2013, Chapter 137, Article 2, Section 14).

How will we use it?

(2018 Plan) "In 2016, BWSR began using the NPFP in grant and easement programs that invest funding in on-the-ground conservation. In the Clean Water Fund Request for Proposals, BWSR emphasized the three high-level state priorities and added Cost Effectiveness to the Clean Water Fund Competitive Grant and Targeted Watershed ranking criteria. The criteria aligned with state priorities, locally prioritized and targeted, measurable effects, and multiple benefits have previously been and remain in the ranking criteria. Leverage and capacity are addressed through eligibility requirements and longevity through program policy. Landowner financial need is addressed through providing increased financial assistance for low-income landowners."

Background

The original law required BWSR to update the NPFP every two years. In June 2014, BWSR's Board approved the first NPFP. This version established the following four components: 1) High-level state priorities for investing CWF nonpoint implementation funding. 2) High-level keys to implementation. 3) Criteria for evaluating proposed activities for purposes of prioritizing nonpoint funding. 4) Estimated costs for implementing nonpoint activities.

The second version of the NPFP was approved in 2016. This revision provided specific examples of progress made to date on the NPFP's role in prioritizing nonpoint implementation actions at the state level. It also provided updated financial information for prioritized nonpoint actions from the FY18-19 Biennial Budget Request. The third version (2018) of the NPFP involved minor updates to the 2016 version.

In 2019, the Minnesota Legislature passed a package of statutory policy changes in Minnesota Statues Chapters 103B and 114D. These changes took effect on August 1, 2019 and are referred to as "coordinated watershed management." One change was the addition of Minnesota Statue 114D.47 Nonpoint Funding Alternative. This

new language states, *"Notwithstanding section 114D.50, subdivision 3a, the Board of Water and Soil Resources may, by board order, establish alternative timelines or content for the priority funding plan for nonpoint sources under section 114D.50, subdivision 3a, and may use information from comprehensive watershed management plans or comprehensive local water management plans to estimate or summarize costs."*

The Board passed Board Order 20-27 in June 2020, which extended the date for updating the Nonpoint Priority Funding Plan (NPFP) to December 31, 2021. This order also authorized staff to develop a framework to evaluate the need to establish alternative content for estimating a range of costs for prioritized nonpoint implementation actions.

What has changed since the 2018 NPFP?

- New statutory policy changes in Minnesota Statues Chapters 103B and 114D referred to as the "coordinated watershed management approach" (2017)
- Increased local government participation in the One Watershed, One Plan program and adoption of Comprehensive Watershed Management Plans (CWMPs).
- BWSR adopts approach changing the trajectory of non-point source implementation funding from primarily competitive CWF grants to noncompetitive watershed-based CWF grants (2019)
- Elimination of the Biennial Budget Request (2019)
- BWSR was granted statutory authority to develop scope, alternative content, and timeline of NPFP revisions (2019)
- Clean Water Council (CWC) develops their Strategic Plan (2020)

Why is BWSR doing this now?

Since November 2020, BWSR staff have evaluated the current NPFP to determine its value and relevance. From this evaluation, staff believe there is value in the NPFP and in taking the necessary time to revise the NPFP to better reflect the above-mentioned changes in state planning and programming and align the timing of the NPFP with the Clean Water Fund budget development process. With the advent of the 2020 CWC Strategic Plan and the ongoing development of WRAPS, GRAPS and CWMPs, the state now has a better idea of how CWFs should be utilized.

BWSR's key considerations for taking this approach are:

- Shows non-point source implementation actions as locally driven and state supported
- Provides the ability to compile implementation costs/needs on a watershed basis statewide
- Enhances support of using CWFs toward priorities in local CWMPs
- Supports the ongoing transition from the CWF competitive to noncompetitive funding approach
- Allows for updating the NPFP as necessary to reflect crucial new data and information

Project Goal, Process, and Timeline

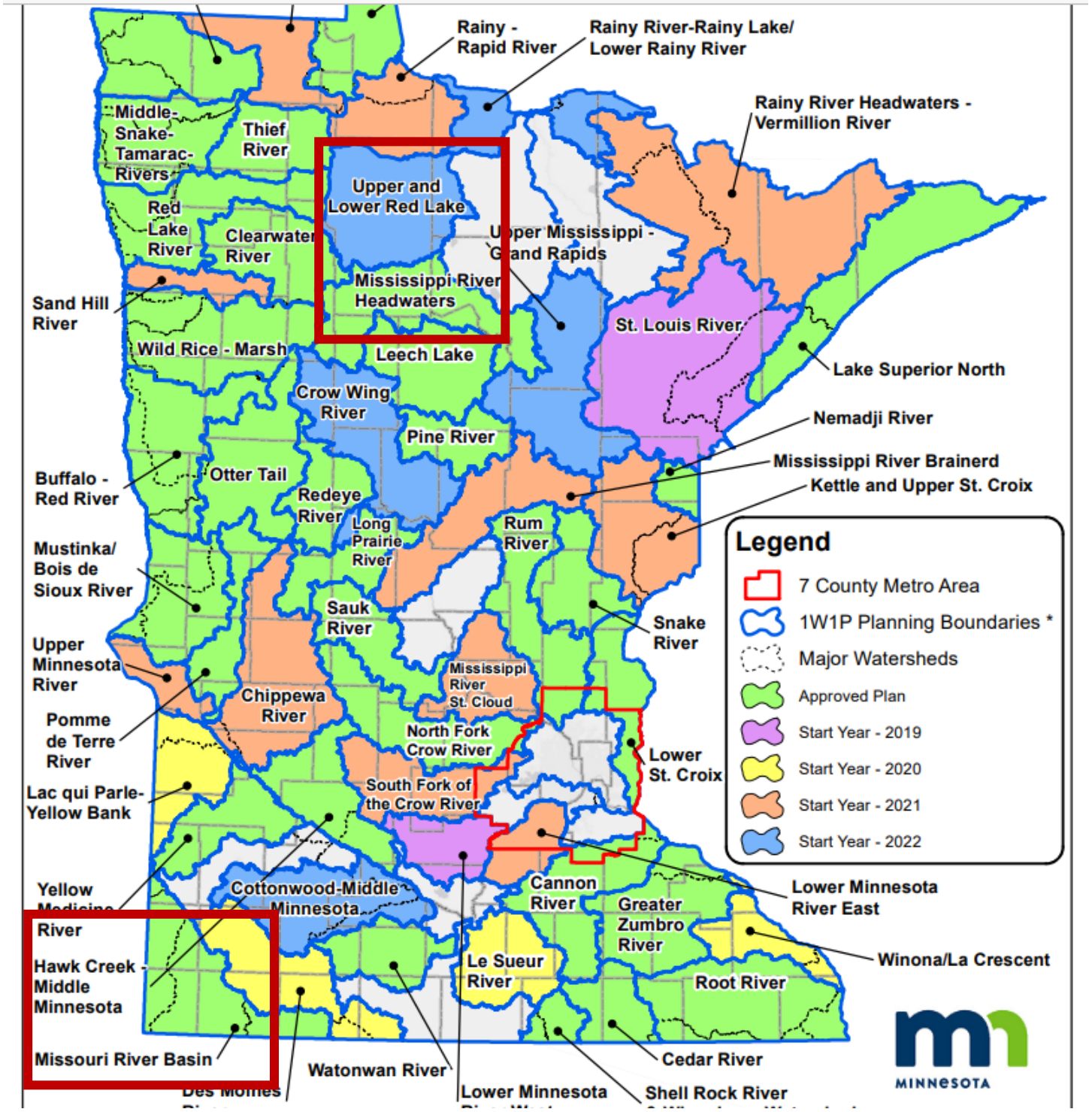
NPFP version 4.0 will be completed by December 2023 resulting in a more practical, useful report with revisions applied as appropriate or needed. This project will include the following three phases:

1) Commission the NPFP revision **(December 2021)**
2) Gather information/feedback and review drafts **(Revision process begins in 2022; Initial draft due August 2023)**

i) Staff review CWMP/WMPs implementation tables and CWF grant awards to determine statewide nonpoint implementation funding need

ii) Engage stakeholders, including state agencies, NGOs, local government partners and BWSR staff to allow feedback regarding proposed NPFP revisions.

3) Tentative Board decision (**Final draft and comments due October 2023; BWSR Board approval December 2023)**


Rainy - Rapid River
Rainy River-Rainy Lake/ Lower Rainy River
Rainy River Headwaters - Vermillion River
Middle-Snake-Tamarac-Rivers
Thief River
Upper and Lower Red Lake
Red Lake River
Clearwater River
Upper Mississippi - Grand Rapids
Mississippi River Headwaters
Sand Hill River
St. Louis River
Wild Rice - Marsh
Leech Lake
Lake Superior North
Crow Wing River
Nemadji River
Pine River
Mississippi River Brainerd
Buffalo - Red River
Otter Tail
Kettle and Upper St. Croix
Redeye River
Long Prairie River
Rum River
Mustinka/ Bois de Sioux River
Sauk River
Snake River
Upper Minnesota River
Mississippi River St. Cloud
Chippewa River
Pomme de Terre River
North Fork Crow River
Lower St. Croix
Lac qui Parle-Yellow Bank
South Fork of the Crow River
Yellow Medicine River
Cottonwood-Middle Minnesota
Cannon River
Lower Minnesota River East
Greater Zumbro River
Winona/La Crescent
Hawk Creek Middle Minnesota
Le Sueur River
Root River
Missouri River Basin
Watonwan River
Cedar River
Lower Minnesota
Shell Rock River
Legend
7 County Metro Area
1W1P Planning Boundaries *
Major Watersheds
Approved Plan
Start Year - 2019
Start Year - 2020
Start Year - 2021
Start Year - 2022
MINNESOTA

2023 Council Meeting Topic Suggestions

Lake Topics

1. **Long-term trends in our lakes** (Leif Olmanson, who is using frequent satellite images of lakes to detect water quality changes; Gretchen Hansen, who is focusing on ecosystem changes: DNR; and/or MPCA
2. **Zoning Issues with Lakeshore/Riparian Properties** (DNR)

Groundwater

1. Review of **water reuse and groundwater recharge** efforts to address drought
2. Research on **groundwater governance** in the Midwest (new report from Freshwater), including work with tribal governments (Carrie Jennings, Freshwater) [Jennings presented at Policy Committee 1/23]
3. **Minnesota Drought of 2021**, (Water Resources Conference presentation by Luigi Romolo, Dan Miller, Ellen Considine, Amanda Yourd, Carmelita Nelson from DNR) [DNR gave drought presentation at 1/23 full Council and at January and 2/23 Policy Committee]
4. **Legacy and Future Direction of the 1989 Minnesota Groundwater Protection Act** (David Crisman, Minnesota Groundwater Association)
5. Groundwater Restoration and Protection Strategies **(GRAPS) using 3D modeling** (MN Geological Survey, MN Department of Health)
6. **Technological advances in groundwater hydrology** (USGS) (examples: impact of climate change on groundwater recharge, lakes and rivers and lag time for groundwater quality BMPs, and the impact of groundwater on lakes.
7. **Wellhead Protection for Every Vulnerable Municipal Water System Complete** (MDH)
8. **Groundwater Management Areas e.g., N & E Metro** (DNR)

Drinking Water

1. **Metro Area Water Supply Advisory committee (MAWSAC) recommendations** to support water supply sustainability in the metro (Met Council)
2. **Minnesota Source Water Protection Collaborative** (MDH)
3. **State Resource Needs Report** (critical assessment of drinking water programs nationally; insight to current challenges and how states are coping with emerging issues; lack of national guidance; and COVID demands (Sandeep Burman, MDH public water supply unit)

Emerging Contaminants

1. **Neonicitinoids**: clothiandin, and imidaclopid (idea from Minnesota House of Representatives)
2. **Tire chemical and salmon/smelt in Lake Superior** (idea from Minnesota House of Representatives)
3. **Plastics in water and state of affairs of all plastics (Sterner)** [MPCA presented at BOC 2/23]

Agriculture

1. **Conservation Drainage Management** (Find speakers from 2022 Water Resources Conference) [Policy Committee 3/23 and 4/23]
2. **Linking drainage to One Watershed One Plan** [Policy Committee 3/23 and 4/23]

3. The Potential for Improving Water Quality and Habitat in Minnesota by **Repurposing Unprofitable Cropland with Perennial Vegetation,** Jason Ulrich, Shawn Schottler, Science Museum of MN, St. Croix Watershed Research Station (Water Resources Conference presentation, shows how one could prioritize protection strategies)
4. **Assessing Agricultural Producers' Motivations to Participate in the Minnesota Agricultural Water Quality Certification Program** (Water Resources Conference presentation by Amit Pradhananga, University of MN)
5. **Precision manure application/Manure storage grants** for water quality
6. **Regenerative farming (Besser)**
7. **Development of oil producing and zero carbon plants (Sterner)**
8. **Groundwater Protection Rule update** (MN Department of Agriculture)
9. **Water storage (Weinandt, Sterner)**

Stormwater

1. **Stormwater retrofits at several metro Target stores**, (Paige Ahlborg, Ramsey-Washington Metro Watershed District
2. **Metro stormwater ponds including clean-up (Weinandt)**

Monitoring, Assessment, Characterization & Strategy Development

1. **WRAPS Roundup**: Watershed Restoration & Protection Strategies (WRAPS) approved in the last 12 months (Glenn Skuta, MPCA
2. **Metropolitan Council's Priority Waters List**: A Tool for More Effective Water Resources Management (Water Resources Conference presentation by Emily Ressenger, Met Council)
3. **Interagency surface water monitoring** (Bill VanRyswyk, Surface Water Subteam; shows who does what for monitoring and why)
4. **State Climate Change Framework**
5. **Update on the 2020 State Water Plan (EQB)**

Implementation (including non-CWF)

1. **Report from One HUC-8 watershed on several years of implementation projects** and comparing it to the WRAPS and One Watershed One Plan (BWSR and an SWCD) [full Council 2/23 and 3/23]
2. **Clean Water Partnership** loans (MPCA)
3. **Water Quality Trading** (MPCA)
4. **How wildlife/aquatic management areas intersect with watershed-based approach to address impaired waters** (Steve Besser request; concerned about prioritizing economic uses over fish and wildlife management; possible presentation on DNR management)

New or Timely Topics

1. **Wakeboard impacts** on Shorelines
2. **Removal of lock and dam on Mississippi River** by Ford Plant in St. Paul;
3. **Five Takeaways to Advance Diversity, Equity, and Inclusion in Watershed Management,** Melanie Bomier, Carlton SWCD
5. **MPCA's environmental justice mapping tool**, including how recent updates increased areas of concern for environmental justice in Minnesota. The MPCA uses this tool to focus our work in areas where low-income Minnesotans, people of color and tribal members may experience more impacts, and to increase public engagement. (Quinn Carr, MPCA)

6. **Climate benefits of wetland and peat restoration and protection** (Peter Ciborowski, MPCA)
7. **Multiple benefits of grasslands** (Jewell)
8. **Culverts as a new idea**: Evaluation of Hydrological Change (Jason Moeckel, DNR)
9. **Data privacy on private wells (Kader)**
10. **Human resources/meeting labor force need in water**

Mississippi River Headwaters and Upper/Lower Red Lake Watershed Comprehensive Planning

Clean Water Council

Zach Gutknecht, Clean Water Specialist
Beltrami Soil and Water Conservation District

Outline

Partnerships successes
Mississippi River Headwaters and Upper/Lower Red Lake
Planning challenges
Watershed Protection strategies
Incorporating state documents
Agency assistance
Tracking progress

Implementation Success Through Partnerships

Clearwater/Beltrami SWCD shared services
Red Lake DNR
Blackduck Co-op
Birds Bees Butterfly's Bemidji/Headwaters Audubon Society
Upper Red Lake Area Association - Keep it Clean
City of Bemidji
Bemidji State University
Turtle River Watershed Association

Mississippi Headwaters

- Headwaters of the Mississippi River
- 885 river miles
- 180,375 acres of lakes
- 2 of Minnesota's largest 10 lakes
- Forest and water make up 80% of the Watershed
- Disturbed land use is increasing

Upper/Lower Red Lake

- Upper/Lower Red Lake is the largest lake within Minnesota
- Upper/Lower Red Lake account for 25% of the Watershed
- Wetlands cover 48% of the watershed
- Bacteria concentrations are a concern in 10 streams
- 1/3 is within Red Lake Nation

Every Watershed Has A Story

Mississippi River Headwaters One Watershed One Plan
Planning Challenges

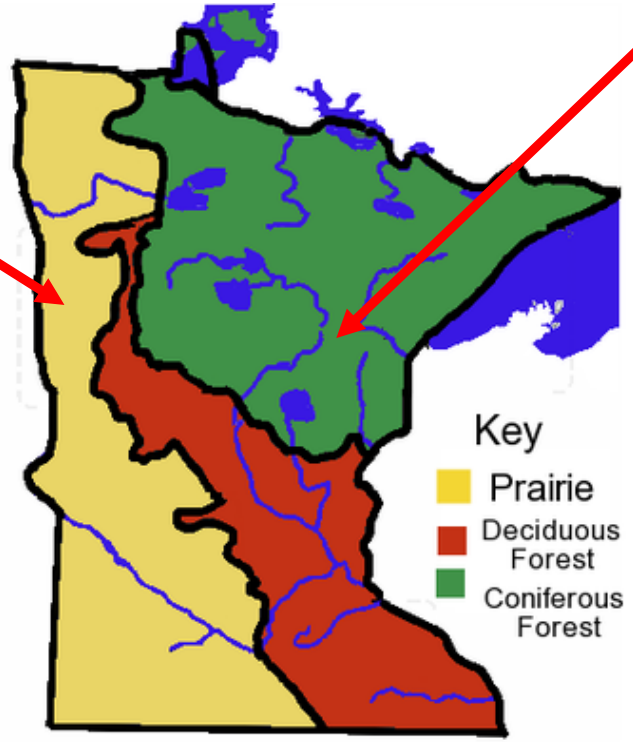
- Multiple counties not familiar with the planning process
- Large planning group
- Counties wanted the plan written locally
- Concerns about loosing local control
- Hubbard County had recently left a 1W1P

Context for Watershed Planning in Minnesota

Restoration

- Water Quantity Drivers
- Streams/ Ditch Based
- Ag Based
- Lake-bed Clay Soils
- High Land Disturbance
- Little Public Land
- Watershed Districts

- **High Land Values**



Protection

- Water Quality Based
- Lake Based
- Forest Based
- Outwash/Till Soils
- Low Land Disturbance
- Lots of Public Land
- Lake Associations

- **Low Land Values**

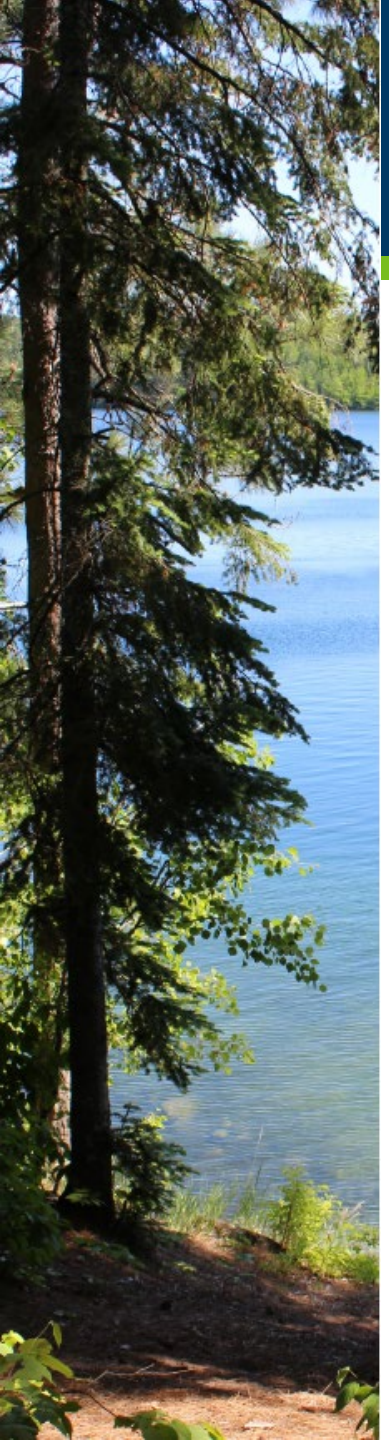
Differing Approaches

Restoration

- Clean Water Act = focuses on Dirty Water
- Impaired Waters = TMDLs
- Risks = Modeled based on land cover, topography, precipitation
- Implementation = targets nutrient loading coming off of the landscape (BMPs = Build it!)
- Fixes = Expensive $$!

Protection

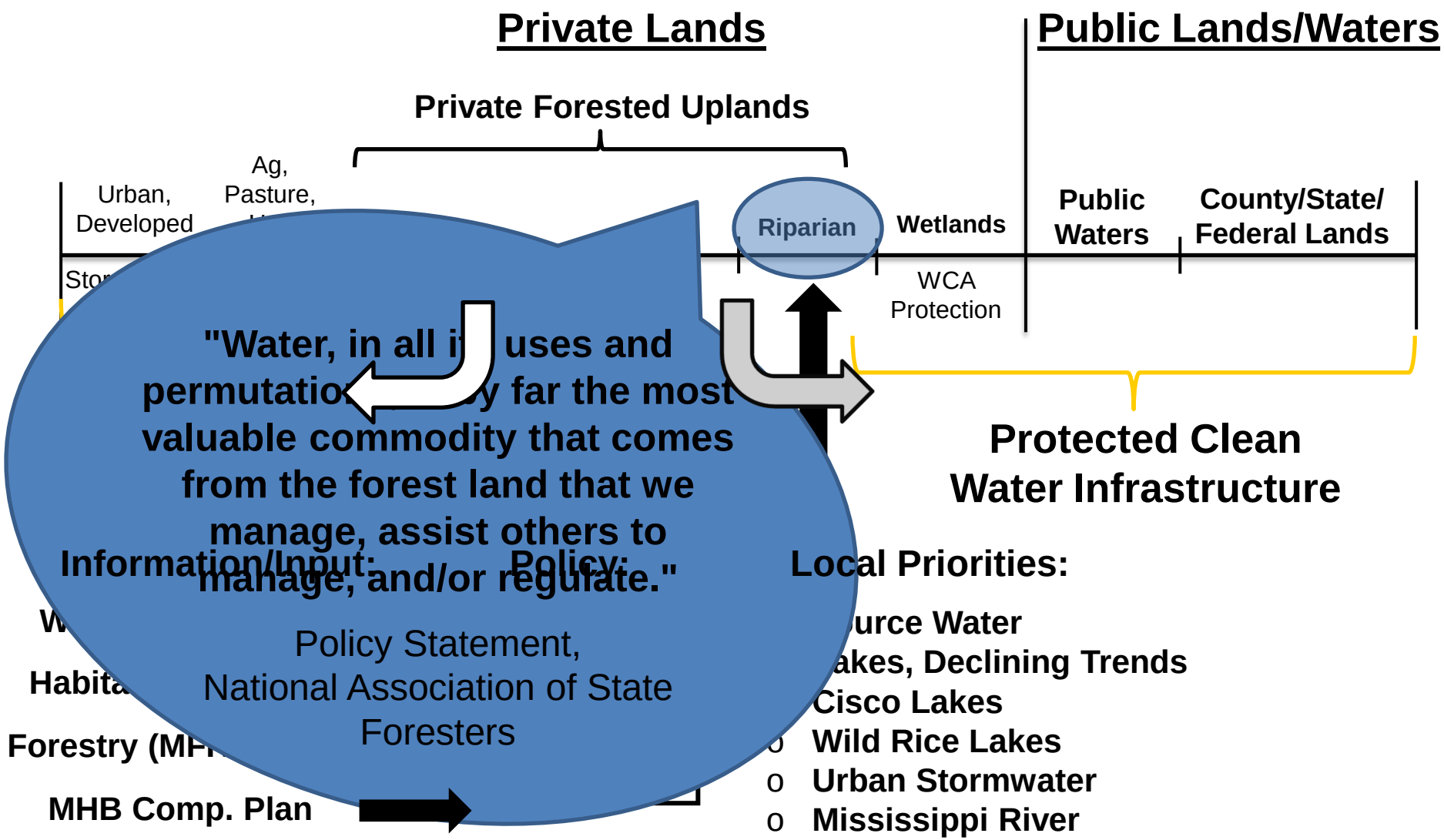
- Lake Screening found that most waters are stable or improving
- Phosphorus sensitivity (from DNR) identified declining waters most at risk of impairment
- Risks = based on the amount of protected lands (More private = more risk)
- Implementation = in prioritized minor watersheds, targeted to private forest landowners with high scores in:
  - Riparian, Adjacency, Quality
  - Landowner chooses from available tools (which are many)
- Fixes = Can be less expensive, can we quantify?



Measuring the Link Between Private Forest Management and Water Quality

- Priority is at the intersection of value and risk
- The forest protection concept aims to reduce the potential for nutrient loading
- Higher value is placed on lakes most sensitive to phosphorus
- Risks are measured by current forest conversion and the potential for additional conversion

Generalized Landscape Protection Model



Protecting habitat as well as water quality!

Prioritize – Target – Measure

Prioritize – What resources and issues are important?

- Priority is at the intersection of value and risk

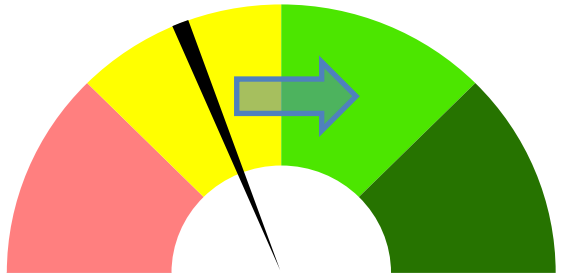
Target – What should we do and where does it need to be done?

- Private Forest Lands
- Acreage Threshold (>20 acres)
- Tool = RAQ

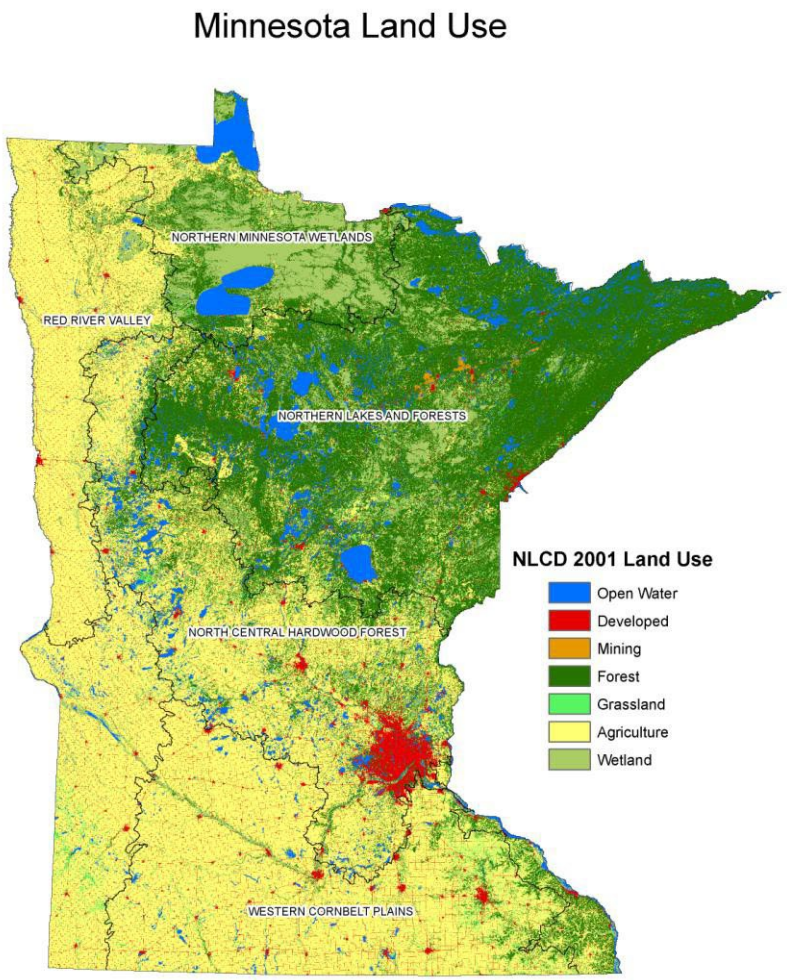
Measure – How will we know when we are done?

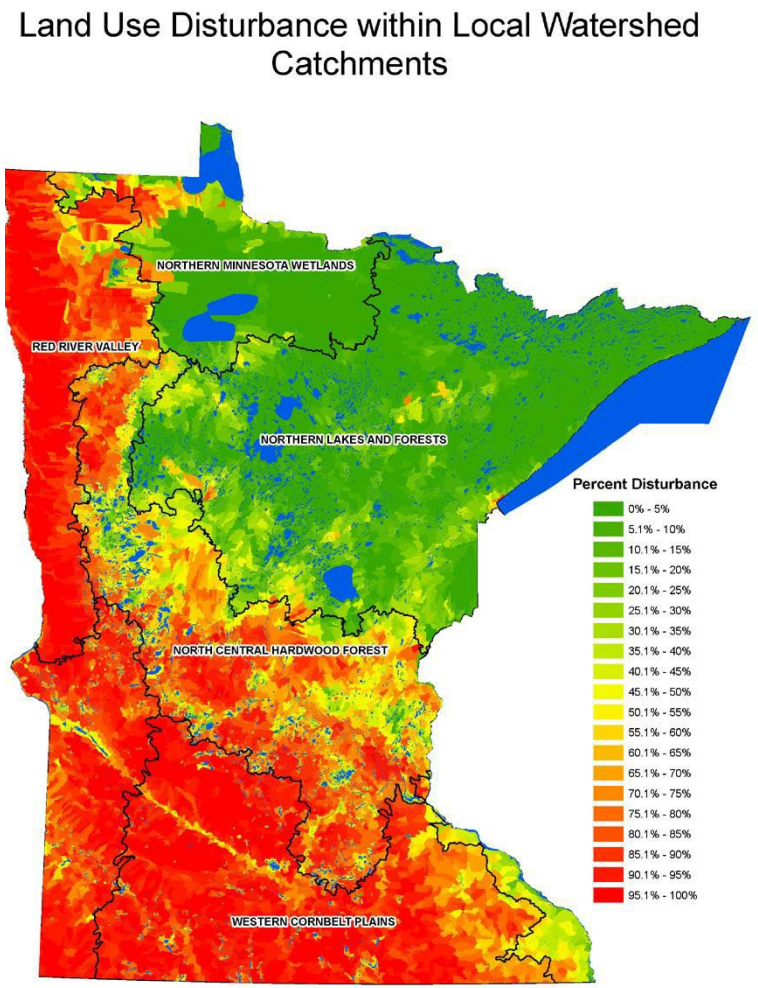
- Move the Needle toward Protection!

*Headwaters of the Miss. R.



Prioritize - Target - **Measure**

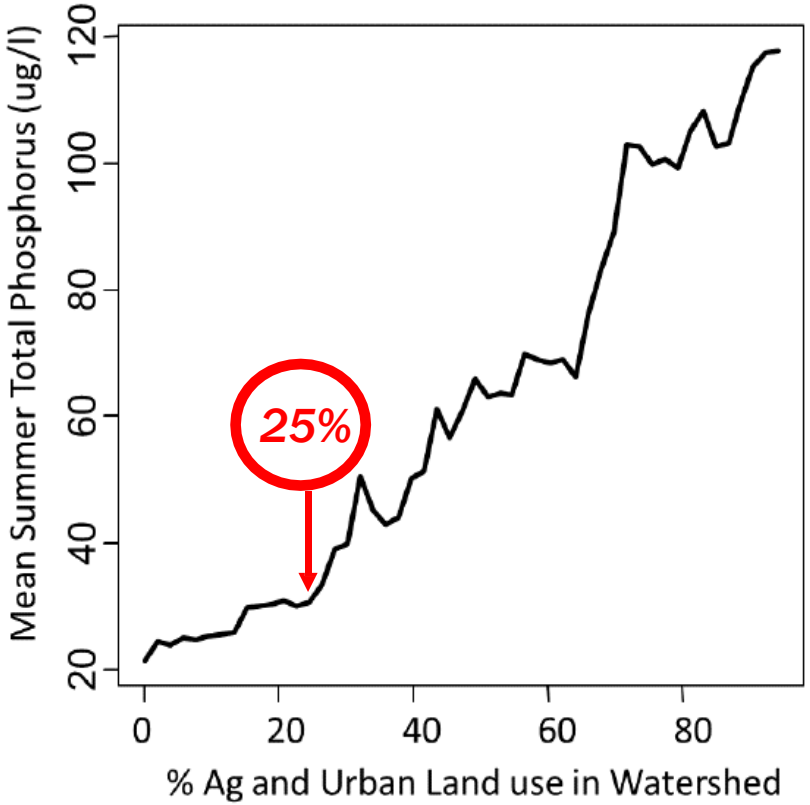




Highest Quality Lakes are in the Forested Ecoregions

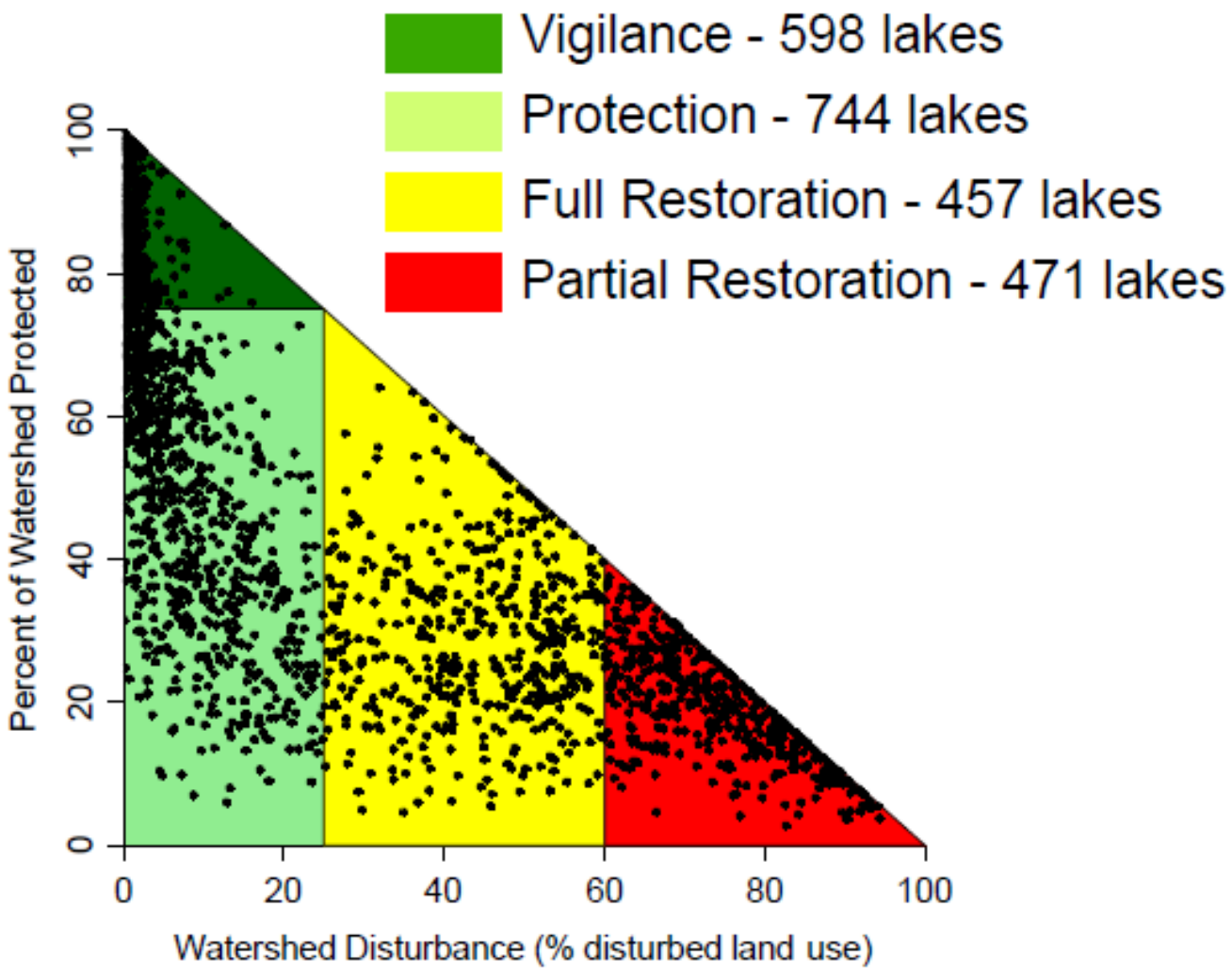
*Jacobson, P., Cross, T., Dustin, D., & Duval, D. (2016). A fish habitat conservation framework for Minnesota lakes. Fisheries 6(6), 302-317

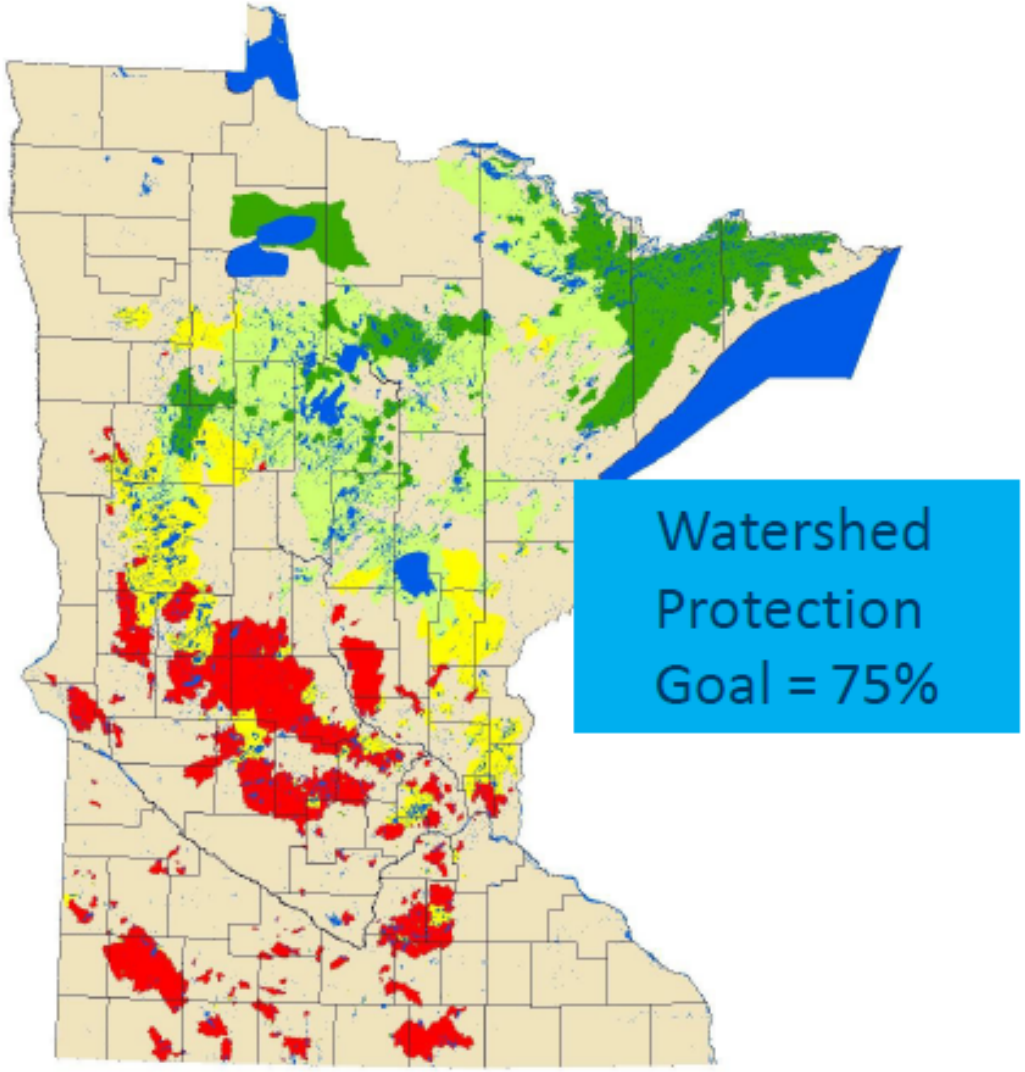
Prioritize - Target - **Measure**



75% Protection Goal

Prioritize - Target - **Measure**





Key Concepts (Values)

- **Keeping Forested Lands Forested** (Forest cover provides ecological, economic, and social benefits.)
- **Keeping Forest Lands Working** (Forest protection allows for productive forests too.)
- **Follow the Risk** (Focus on Private Forest Lands – PFM Program is critical to success.)
- **Stack Public Benefits** (Water Quality and Habitat + Source Water and Jobs).
- **Build in Resilience to Public Lands** (Large tracts of permanently protected forest land are important for future tourism and timber industries. Use SFIA and conservation easements to extend existing conservation impact of public lands.)
- **Find Priority Conservation Investments** (Priority is at the intersection of quality and risk.)
- **Landowners Deserve Service** (Making the conservation options clear and accessible to the conservation minded private landowner.)

Prioritize - Target - **Measure**

Desired Future Condition

Through collaborative management, protect and maintain 75% of the Mississippi River Headwaters forest cover in priority lake watersheds.

10 Year Measurable Goals

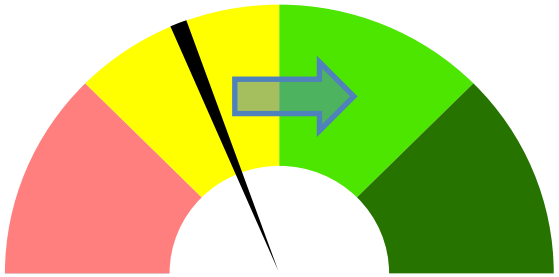
Improve forest management on 41,026 acres through forest stewardship plans.

- Integrate a watershed forest model and database.
- Increase protected forestlands by 30,500 acres across priority lake watersheds.
  - Retain contiguous blocks of private forestlands by maintaining patches greater than 101 acres on 419 private parcels.
  - Minimize forest fragmentation by targeting private forests adjacent to public lands that are smaller than 101 acres.

Figure 3.4 Forested watershed model.

Table 3.4 Priority lake protection goals.

Lake	Lake Watershed Acres	Current Percent Protected	Acres needed to Reach 75% Protected	10 Year Measurable Acres Goal	10 Year Measurable Goal Percent Protected
Lake Plantagenet	109,631	69%	6,125	6,125	75%
Lake Bemidji	387,311	58%	66,885	8,789	60%
Turtle Lake	26,286	43%	6,606	4,407	60%
Gull Lake	6,976	58%	990	112	60%
Cass Lake	693,065	63%	85,275	22,899	66%
Deer Lake	16,754	60%	2,489	2,489	75%
Pokegama Lake	1,228,889	71%	48,205	30,500	74%



Incorporating other documents

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Minnesota Department of Agriculture. (2017). Agricultural BMP handbook for Minnesota. https://wrl.mnpals.net/islandora/object/WRLrepository%3A2955/datastream/PDF/view.

Minnesota Pollution Control Agency. (2017). Mississippi River - Headwaters Watershed stressor identification report. https://www.pca.state.mn.us/sites/default/files/wq-ws5-07010101a.pdf.

Ribikawskis, M., Tollefson, D., & VanRyswyk, B. (2019). Pesticides in Minnesota lakes. Minnesota Department of Agriculture. https://wrl.mnpals.net/islandora/object/WRLrepository%3A3462/datastream/PDF/view.

United States Department of Agriculture Natural Resources Conservation Service. (n.d.). Rapid watershed assessment Mississippi Headwaters (MN) HUC: 7010101. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_022926.pdf.

Map 3.24 Number of stream crossings per township.

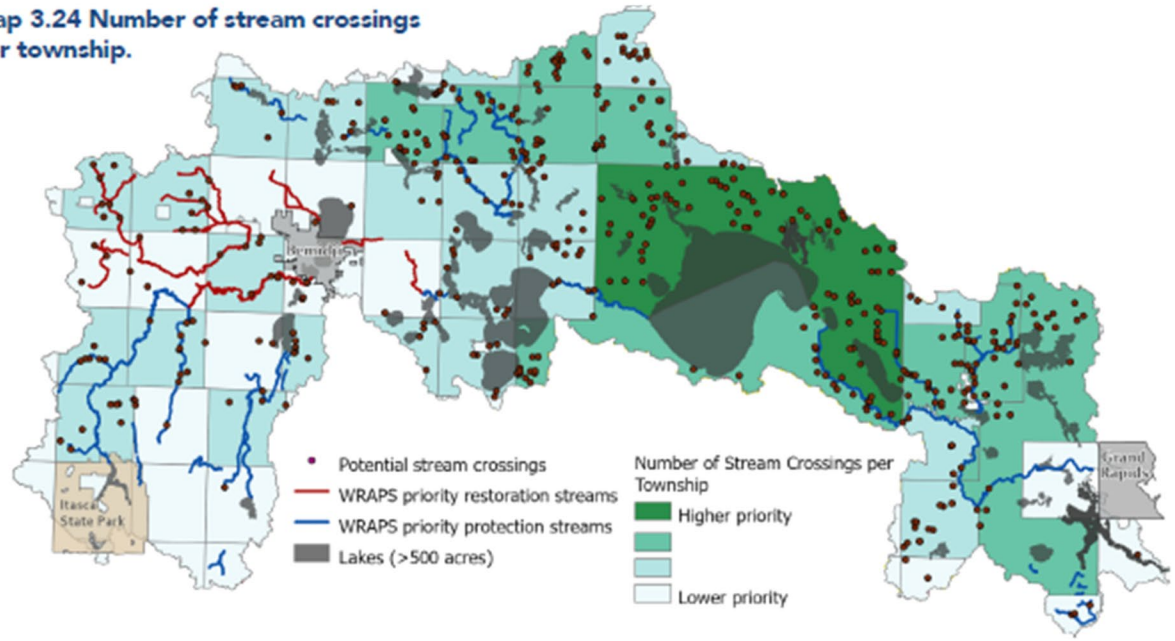


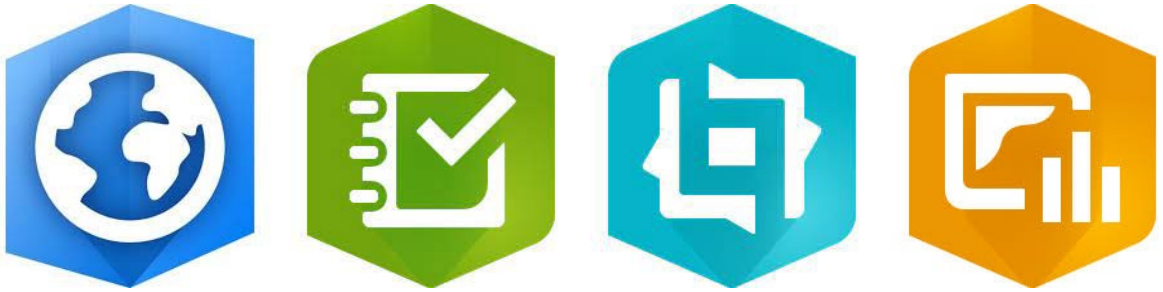
Table 3.3 Lake stewardship action table.

Implementation Action		Contributing Entities			
Action	**Program***	**LGU Lead**	**Supporting Entities**	**Timeframe**	**Plan Source**
Install near-shore stormwater BMPs on developed lots. The performace goal is to retain the first 1.1 inch runoff volume. Rainfall data for Minnsota shows the 1.1 inch represents 90% of rain events.	Incentive	SWCD	County, TSA 8, MPCA, and MN DNR	2021-2031	County Water Plans, WRAPS, and TMDL Reports
Provide technical and financial assistance and on-site guidance to enable landowners to increase natural areas in uplands adjacent to lakes. Replacement of native, terrestrial vegetation such as trees, shrubs, and forbs with manicured lawns, rooftops, and driveways results in increased runoff of water, nutrients, and sediment, lost future woody habitat, and less nearshore shaded habitat.	Incentive	SWCD	County, TSA 8, MPCA, and MN DNR	2021-2031	County Water Plans, WRAPS, and TMDL Reports
Quantify near-shore impervious surfaces on Tier 1 and Tier 2 lakes.	Data Collection and Monitoring	SWCD	County, MPCA, and MN DNR	2021-2023	Advisory Committee
Provide technical and financial assistance and on-site guidance to enable land-owners to re-establish eroding shorelines.	Incentive	SWCD	County, TSA 8, MPCA, MN DNR, and NRCS	2021-2031	County Water Plans, WRAPS, and TMDL Reports

*The Program column relates each action to an implementation program, as described in Section 4.
**The Funding Source column connects the cost and funding source, as described in Section 5.
***WBIF - Watershed-Based Implementation Funding

Website/Tracking - Demo

Program vs Project Tracking
WBIF Program Management
Program Progress
Collecting Data
Tracking Tools

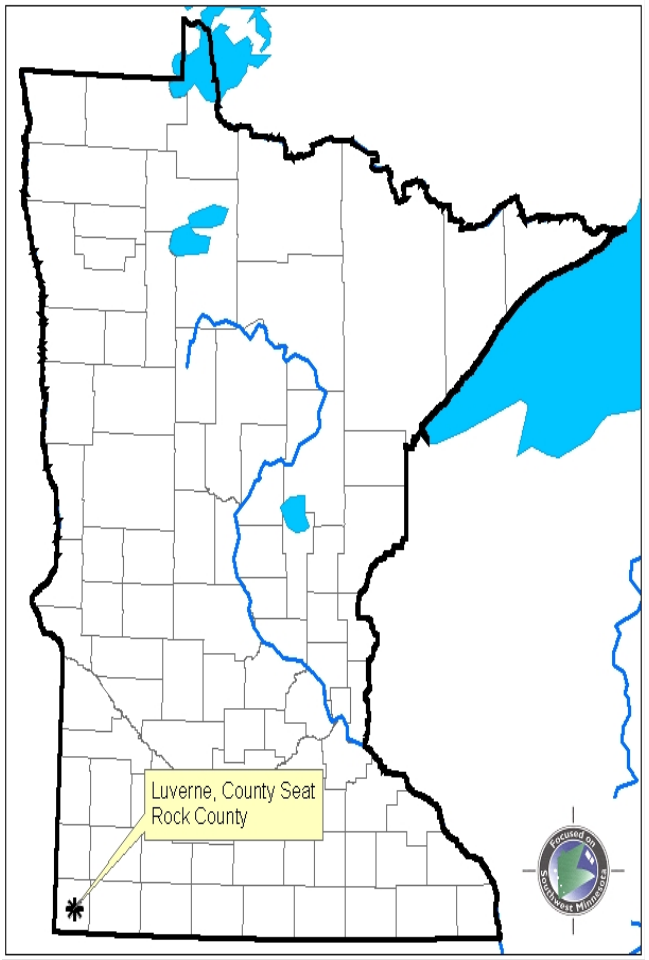


Tools:

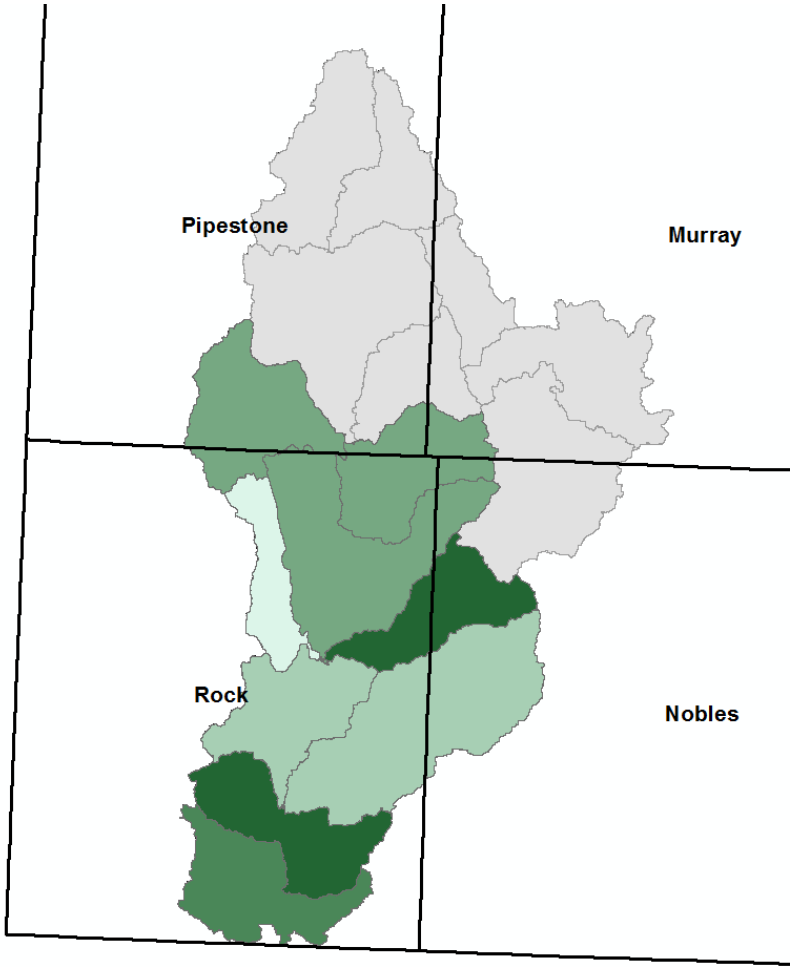
- ArcGIS Pro
  - Base map
- ESRI Online
  - Survey 123 (app vs connect)
  - Experience Builder
  - Dashboards

Collaboration on a Watershed Basis and 1W1P

- Rock County SWCD/Land Mgt
  - Joint Powers between SWCD and County since 1996
- Doug Bos
  - Asst. Director
  - Water Planner



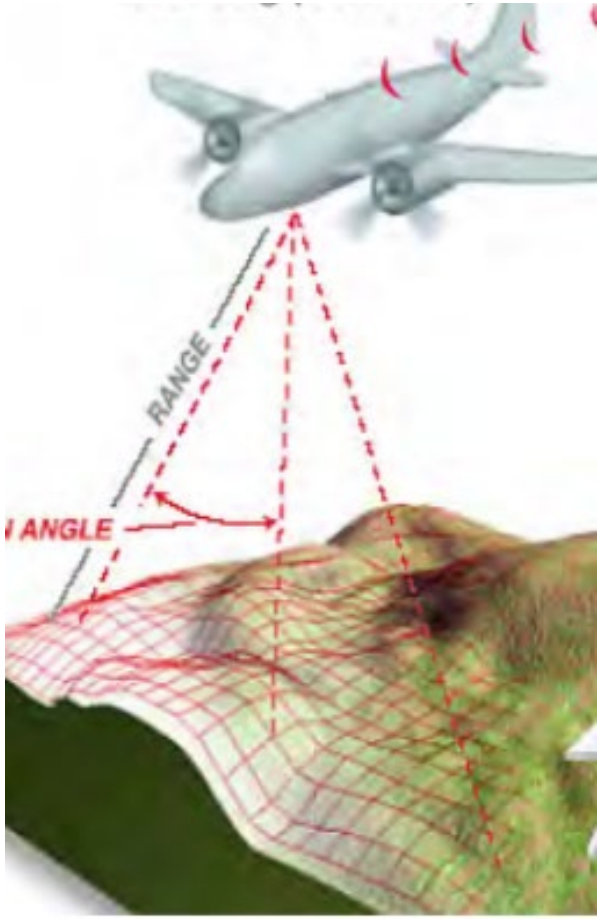
Collaboration on a Watershed Basis Earlier Years



- Rock River Watershed Project - 2014
  - Grant from MDA
- Picked priority catchments
  - Utilized LiDAR
  - PTMa type analysis to choose catchments
- Mail and phone call follow up
  - 210 landowners responded

Collaboration on a Watershed Basis Using Technology for Success

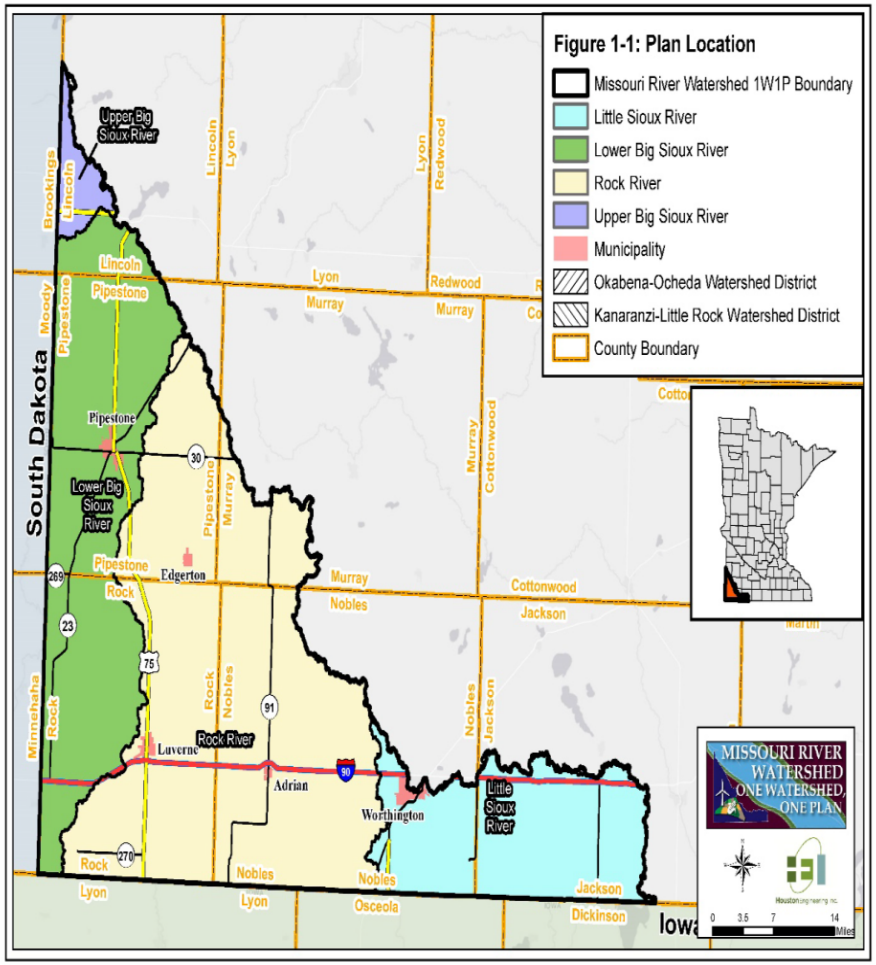
- LiDAR
  - Light detection and ranging
  - Like a fishing depth finder
- PTMapp
  - Prioritize, Targeted and Measure
  - Utilizing computer technology
    - Highest erosion catchment areas
    - Conservation practice placement
    - In office cost estimate development
  - Provides reduction estimates



Challenges and Limitations

- Capacity concerns
  - Limited, some NRCS
- Contracted w former NRCS conservation staff to assist
  - Conducted field walkovers
  - Provided I & E
    - Proposals and estimates
- Funding Limitations
  - No predictable source
- Federal Funds
  - EQIP - limited
- Other State Funds
  - BWSR Challenge Grants
  - Clean Water Grants
    - Competition/Scoring
    - MDA

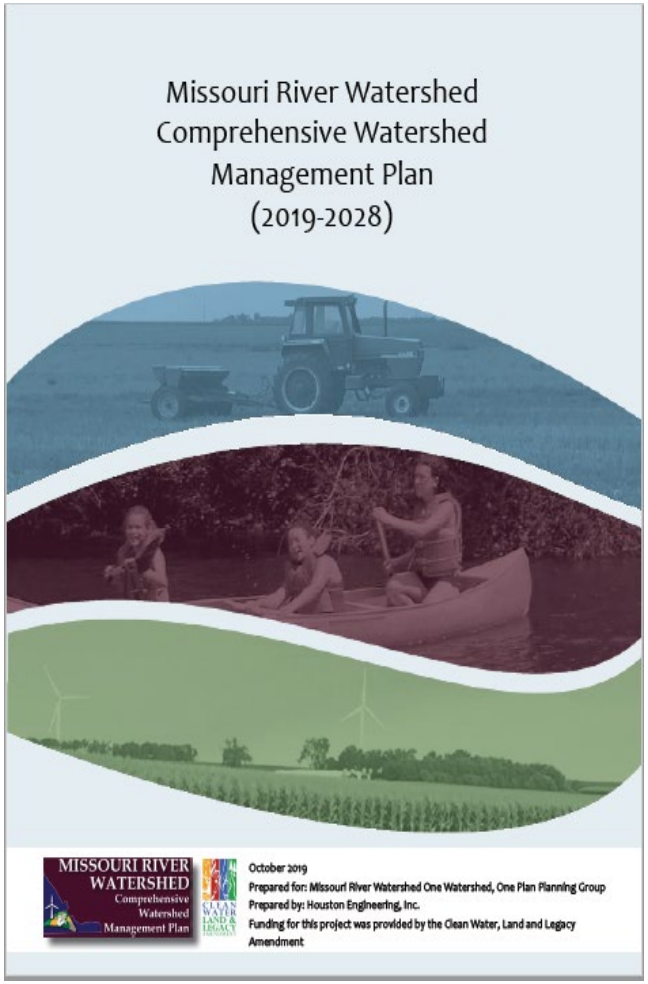
Collaboration on a Watershed Basis with 1W1P



- Missouri River Watershed
  - 6 SWCDs, 6 Counties and 2 Watersheds
- BWSR approved first Watershed Plan 2020
  - Providing 1.3 million for 2 years
- Organizational Structure
  - Joint Powers Board

Enhanced Collaboration with 1W1P

- Opportunity to
  - Continue focused efforts
  - Gain public input
  - Plug in WRAPs, GRAPs plus TMDL data & goals
- Stable Funding
  - Provides time to build trust w/landowners
  - Allows continuation
    - Good programs do not die
  - Greater results



Collaboration on a Watershed Basis with 1W1P

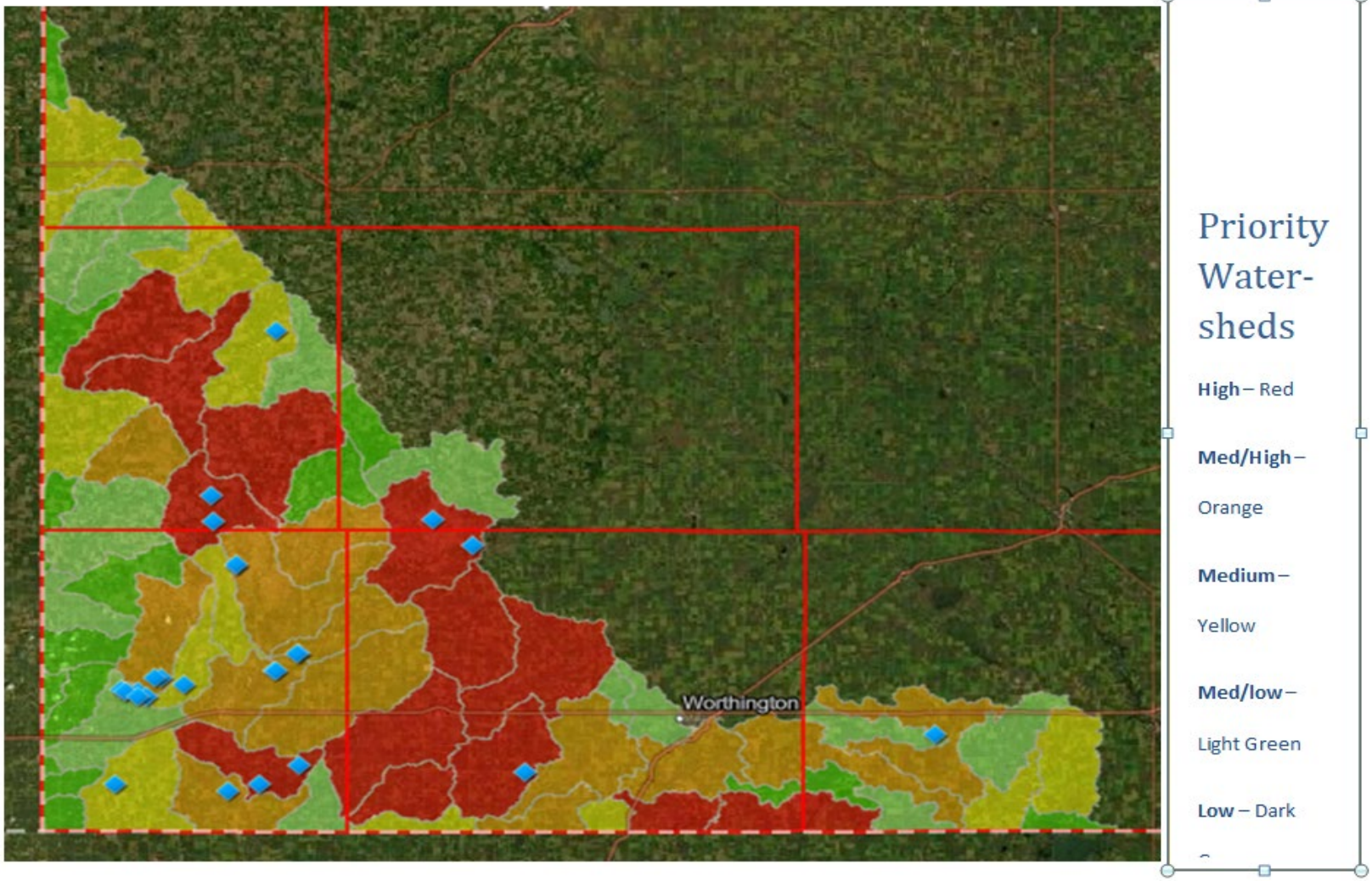
- Great Technical Committee
  - Worked together on previous efforts
  - Common goals
  - Respectful of each other
- Successful Implementation
  - Strong demand from earlier projects
  - Continued outreach efforts
  - Good projects promote good projects

Collaboration on a Watershed Basis 1W1P Prioritization

- Very Comprehensive Process
  - Planning Group comprised of local staff
  - 2.5 years to develop
  - 12 Resource Concerns
    - 27 Priority Issues
- Stakeholder Input High Priority
  - Advisory Committee including State Agencies
  - Public opportunities – Web & Mtgs

Resource Concern	Issue	Priority Tier
Groundwater		
Drinking Water	Elevated nitrate-nitrogen in groundwater wells	A
	Elevated bacteria (i.e. *Escherichia coli (E. coli)* and fecal coliform) in groundwater wells	B
	Land use changes where water enters aquifers, including Wellhead Protection Areas (WPAs) or Drinking Water Supply Management Areas (DWSMAs)	A
	Sustainable quantities of groundwater supplies for drinking water use with suitable water quality	A
Surface Waters		
Streams and Rivers	Elevated suspended solids (sediment) and phosphorus levels	A
	Elevated bacteria (i.e. *E. coli* and fecal coliform) levels	B
	Elevated nitrate-nitrogen levels	B
	Increased spread of aquatic invasive species	B
	Land use changes contributing to wind and overland runoff	A
	Streambank/riverbank erosion causing loss of bank sediment	A
Lakes	Elevated phosphorus concentrations in the water and increased risk of algal blooms	B
Surface Runoff	Land use changes leading to loss of vegetative cover and field residue	A
	Land use changes leading to loss of natural storage	A
Wetlands	Loss of functioning wetlands	A
Agricultural Drainage Systems	Presence, width, and quality of vegetated areas alongside ditches	B
Fish and Wildlife Habitat		
Aquatic Habitat for Fish, Macroinvertebrates and Aquatic Life	Habitat loss from bank erosion in creeks, streams, and rivers	A
	Aquatic and riparian habitat loss from development and intense drainage	B
Terrestrial Habitat for Wildlife	Terrestrial habitat fragmentation and loss	B
Local Knowledge Base and Technical Capacity		
Landowner, Producer and Lake Shore Owner Engagement in Water Management	Lack of watershed-wide education and outreach on management and structural best management practices (BMPs) and their impact on farm profitability and the environment	B
Technology, Tools, Funding, and Existing Capabilities	Lack of understanding, agreement, and consensus about the hydrologic impacts of tile drainage and the benefits to producers	B
	Piecemeal approach and lack of long term and consistent funding for water management programs at the local level	A
Local Development and Land Stewardship		
Rural Land Stewardship	Decreased agricultural soil health	A
	Increased sheet, rill, and wind erosion	B
	Manure application and disposal	B
Riparian Stewardship	Undercut and unstable streambanks	B
	Livestock accessibility to streams and rivers	B
	Vegetated buffer along streams and rivers	B

Collaboration on a Watershed Basis
Prioritized Sub-watersheds

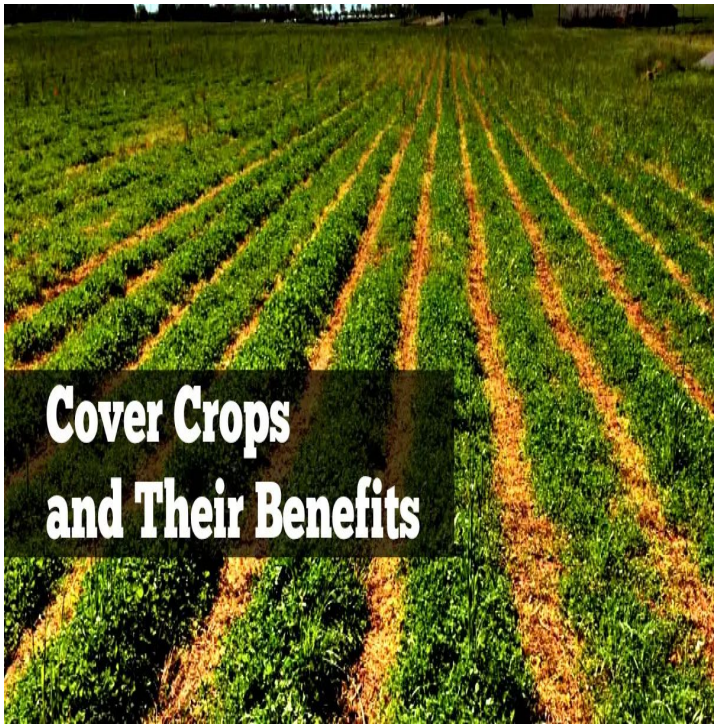


Collaboration on a Watershed Basis
$1.3M Awarded - $1.1M in Practices

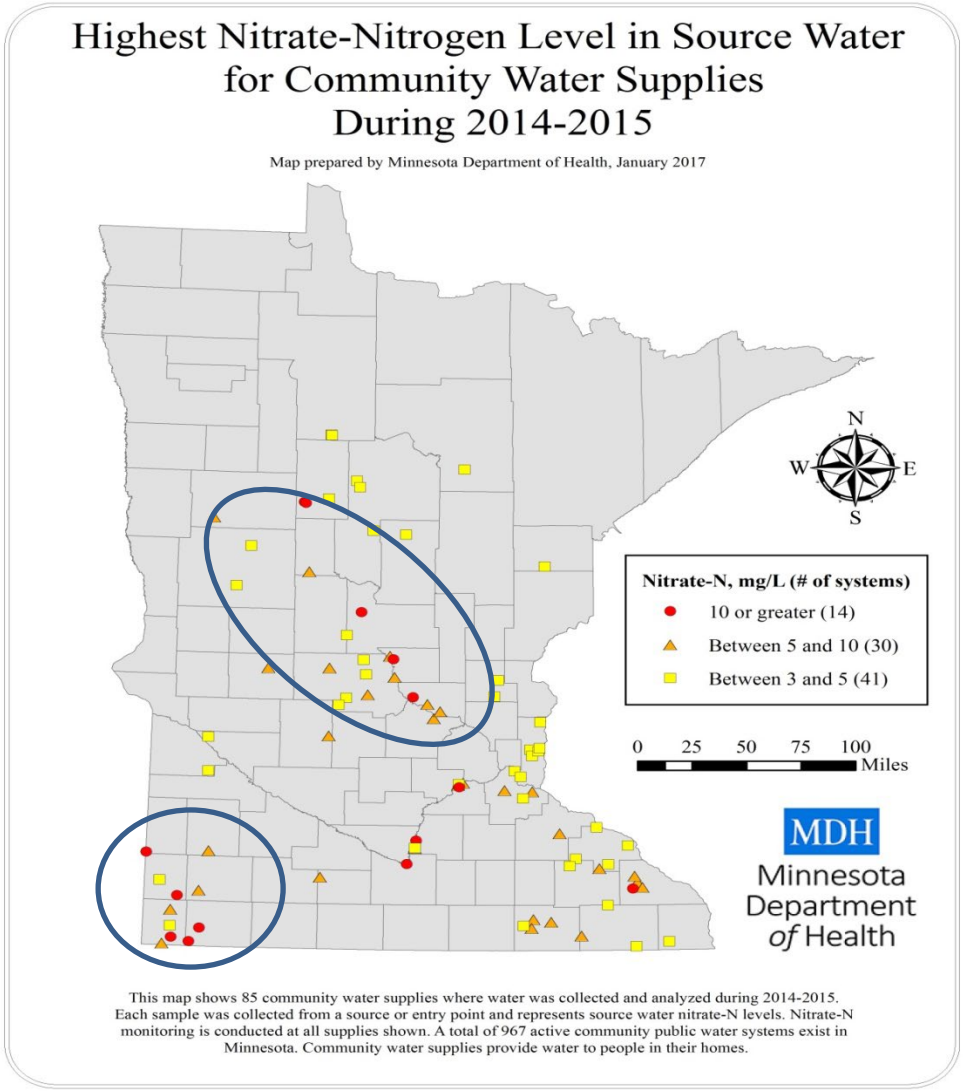
- Grass Waterways

- Water and Sediment Control Basins

- Cover Crops

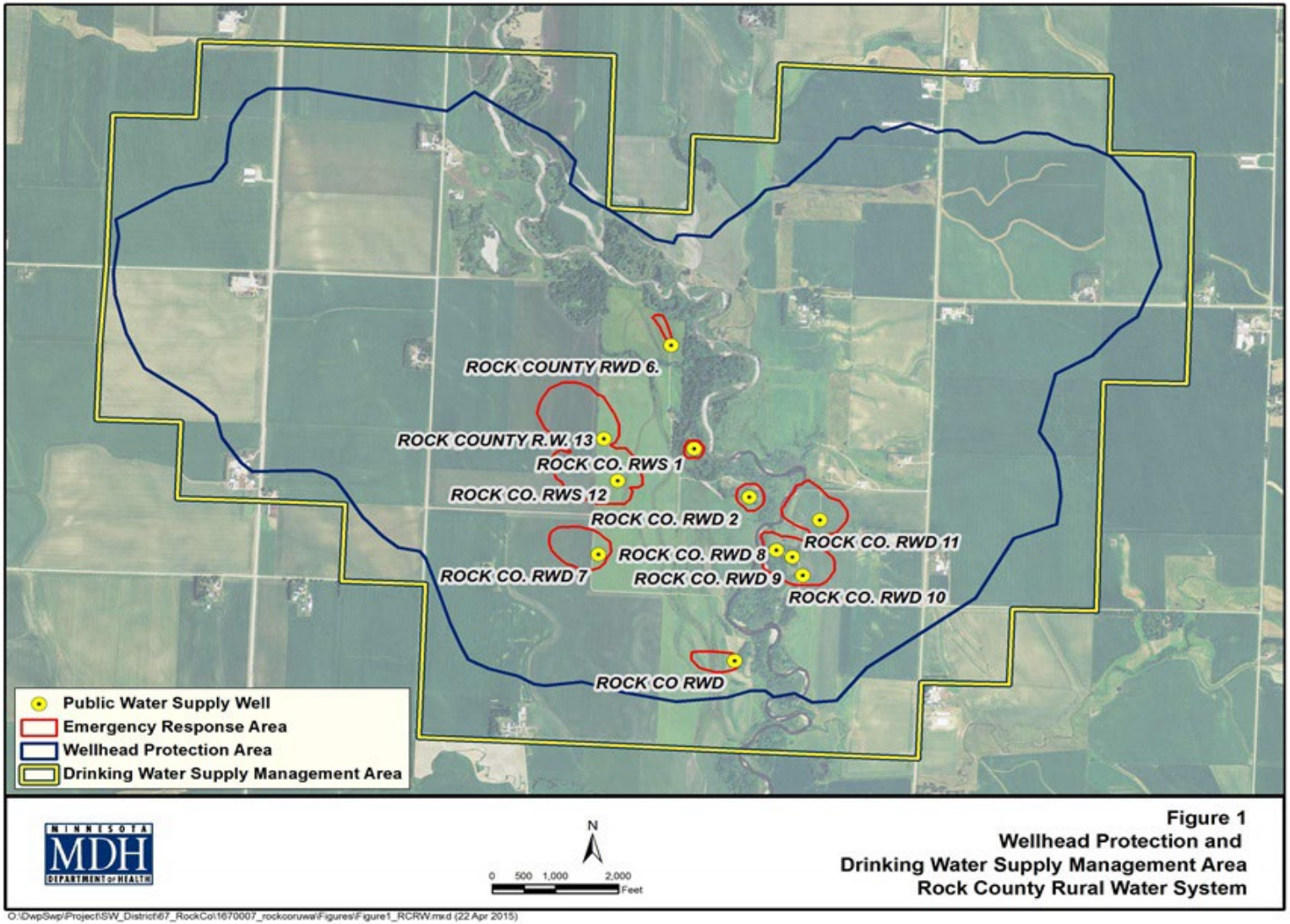


Collaboration on a Watershed Basis Groundwater Component



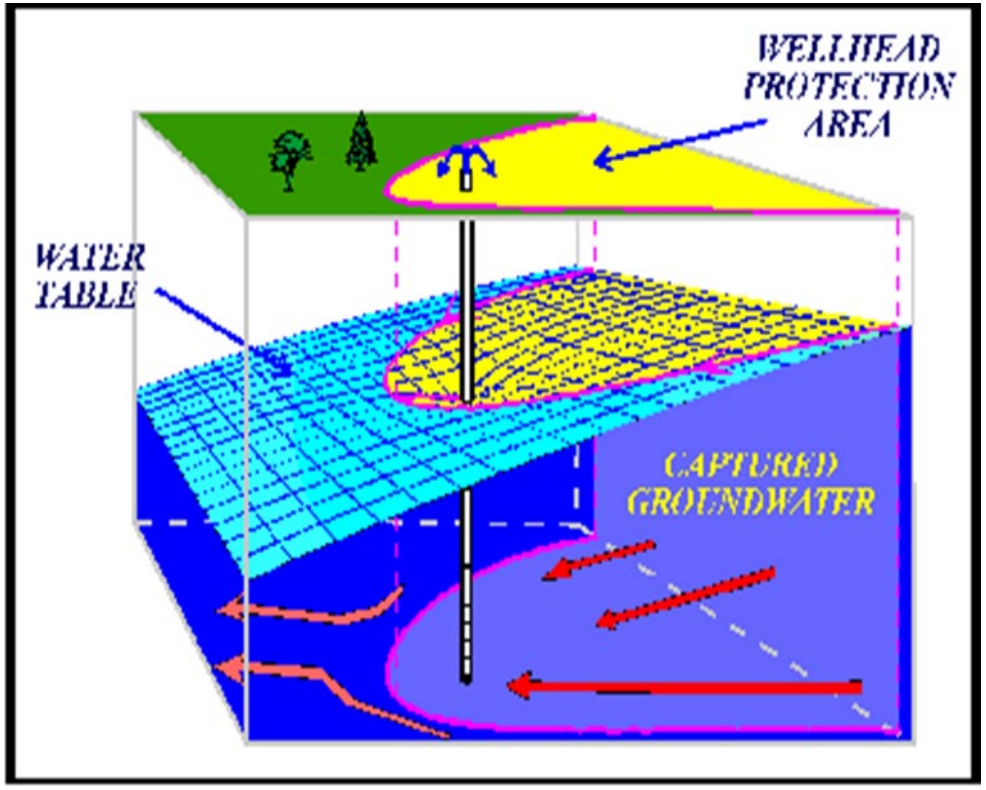
- Nitrate Hot Spots Community Water Supplies

Example: Rock County Rural Water



Rock County Rural Water Issues

- DWSMA – 1408 acres
- Very shallow wells
  - 20-30’
- 3 highest producing wells with very high nitrates
  - (20 – 30ppm) (10ppm drinking water limit)



Rock County Rural Water
Wells Surrounded by Crop Ground

Rock County Rural Water Funds for Implementation

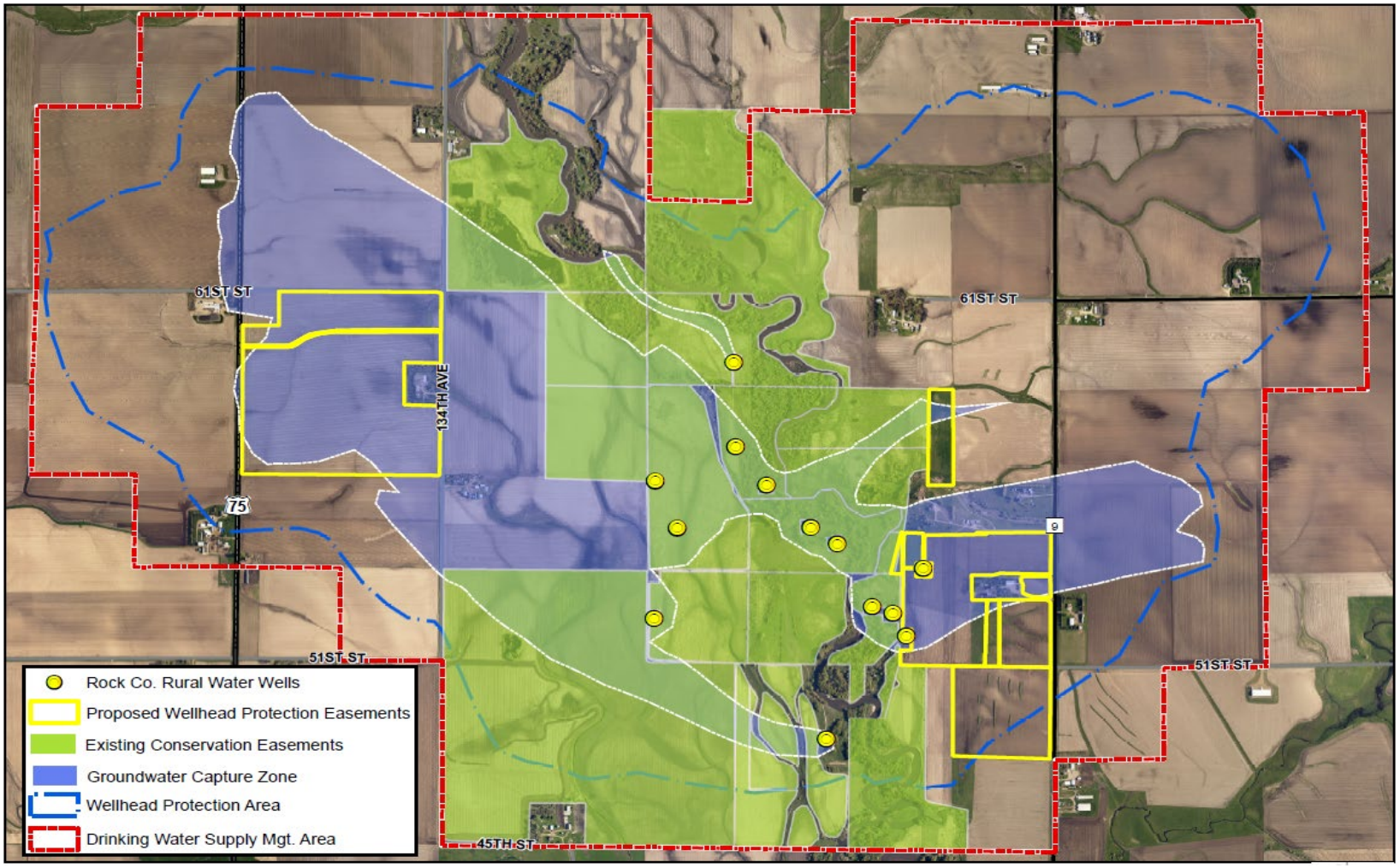
- Received Clean Water Funds for N management incentives
  - MN Board of Soil and Water Resources
  - MN Dept of Ag
  - MN Dept of Health

Rock County Rural Water Implementation Activities

- **Helping farmers better manage N applications in highly vulnerable well head areas**
  - **Incentives**
    - **Correct N rate**
    - **Split application**
    - **Use of nitrification or urease inhibitors**
    - **Lower N rates**
    - **Precision Ag**
    - **No fall N application**
    - **Cover Crops**

Rock County Rural Water Clean Water Funds

- Easement Programs



Rock County Rural Water Clean Water Funds

- BWSR has provided flexibility
- Wellhead Protection Partner Program
  - Permanent Pasture
  - Protects East Wells
  - 30 year contract

Collaboration on a Watershed Basis (ways to improve on existing efforts)

- Field Walkovers and Outreach
  - Focused in Priority areas
- Private Partnerships
  - Coops and Suppliers
  - Conservation Agronomists
    - Soon to be starting!

Watershed Collaboration
Final points

- Good programs take time to develop

- Collaboration definition
  - Working towards a common goal
  - Improves the way a team works together to solve problems