Policy Committee Meeting Agenda

Clean Water Council

January 28, 2022

9:30 a.m. – 12:30 p.m.

WebEx Only

2021 Policy Committee: John Barten (Chair), Rich Biske, Kelly Gribauval-Hite, Raj Rajan, Victoria Reinhardt (Vice Chair), Peter Schwagerl, Phil Sterner, Jordan Vandal, and Marcie Weinandt

9:30 Regular Business

- Introductions
- Approve today's agenda
- Approve minutes of previous meeting
- Chair and staff update
- Subcommittee on Minnesota Water Policy (SWMP) Update
    - Jim Stark

9:45 Results of Strategic Plan Survey

- Paul Gardner

10:00 Follow-up to Soil Health Conversation from November meeting

- Review draft policy statement language

10:45 BREAK

11:00 Reviewing Topics for Future Policy Statements

11:45 Review Latest Draft of Pharmaceutical Policy Statement

12:00 Adjourn

Possible Future Meeting Topics:

- Shoreland protection and restoration efforts (DNR)
- Council member interest in frac sand mining
- New Plan to Spend 3M Settlement for East Metro
- Neonicitinoids: clothiandin, and imidaclopid (idea from Minnesota House of Representatives)
- Tire chemical and salmon/smelt in Lake Superior (idea from Minnesota House of Representatives)
- Precision manure application/Manure storage grants for water quality
- Drainage policy and opportunities for water quality
- Changes to policy/statutes on Mt Simon Hinckley acquifer

Policy Committee Meeting Summary
Clean Water Council (Council)
November 19, 2021, 9:30 a.m. to 12:00 p.m.

Committee Members present: John Barten (Chair), Rich Biske, Kelly Gribauval-Hite, Raj Rajan, Victoria Reinhardt (Vice Chair), Peter Schwagerl, Marcie Weinandt, and Phil Sterner.
Members absent: Jordan Vandal.

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

Regular Business

- Introductions
  - Tannie Eshenaur, Minnesota Department of Health (MDH): There were two significant events that will help drinking water. First, the Federal Infrastructure Bill (Infrastructure Investment and Jobs Act) will fund replacement of lead service lines, address per- and polyfluoroalkyl substances (PFAS), and address Contaminants of Emerging Concern (CECs). Second, the Environmental Protection Agency (EPA) released this week documentation on health risk assessment for PFAS chemicals. The reference dose is more than a thousand times lower than their current values. It will probably be lower than Minnesota's values. Additionally, the Association of State Drinking Water Administrators has asked Sandy Burman to sit on their scientific advisory board that will review and comment on EPA documents. In Minnesota, we have been treating PFAS as if they were regulated chemicals, with voluntary compliance.
  - Kevin Bigalke, Board of Water and Soil Resources (BWSR): Projects and Practices grants will be reviewed and approved at their full board meeting on December 16. The Management Analysis and Development (MAD) group at Minnesota Management and Budget (MMB) is doing a programmatic review of the One Watershed One Plan program. This includes surveys, interviews, and focus groups of staff and stakeholders. It evaluates the original intent and value of the program, and can recommend changes.
  - Glenn Skuta, Minnesota Pollution Control Agency (MPCA): The Infrastructure Bill will have funding for the Great Lakes, nutrient reduction strategies, as well as wastewater and stormwater infrastructure.
- Motion to approve the November 15 meeting agenda, as well as both the September 24 and October 22 meeting summaries, moved by Raj Rajan and seconded Victoria Reinhardt. Motion approved by vote unanimously.
- Subcommittee on Minnesota Water Policy update, by Jim Stark *(WebEx 00:13:30)*
  - The SWMP has been working on more than fifty recommendations, using surveys of members and stakeholders and three stakeholder meetings. They are drafting bills for 13 priorities.
  - Highest priority bills: safe drinking water, water safety plans for cities, reactivation of the Legislative Water Commission and the Water Advisory Council, environmental justice, safety for domestic wells, define sustainable groundwater limits using technological advances, soil-health action plan, and complete land preservation objectives to preserve high-valued lakes in the Upper Mississippi.
  - Highly supported bills: improve agriculture production and water quality, tax credit for private riparian buffer lands, policy and an appropriation to encourage groundwater recharge where needed, water retention, and watershed districts appropriation funds.

Soil Health Conversation *(WebEx 00:31:00)*

This conversation will share perspectives on soil health objectives, and may inform action by the Council. Instead of presentations, this will be more about a conversation with folks who work on soil health on a daily basis. There is also a Soil Health Conversation Background document in the meeting packet.

- Rep. Todd Lippert, Minnesota House of Representatives *(WebEx 00:33:30)*
  - Rep. Todd Lippert serves on the Agricultural Finance and Policy Committee, Environmental and Natural Resources Finance and Policy Committee, as well as the Climate and Energy Finance and Policy Committee. He has been doing a lot of work in the nature-based climate solutions area, which includes soil health.

- Legislation introduced includes HF701: Soil-Healthy Farming Goals Established, Financial Incentives Created., HF936: Soil Health Cost Share Programs, and HF1010: Statewide Soil Health Action Plan.
- Rep. Todd Lippert is supportive of a soil health strategy for Minnesota, including a soil health goal and a soil health plan. A broad coalition supports scaling up these practices. Farmers are excited to see the benefits on their lands: increased organic matter, and improved water infiltration (improves resilience in extreme rain events and extreme droughts). Farmers are excited about worms coming back to the soil. Soil health practices reduce nitrate contamination and soil erosion, prevent contamination of groundwater, keep lakes, rivers, and streams healthy, and can sequester large amounts of carbon. Large agricultural companies also support these practices to improve sustainability and lower their carbon footprint.
- There needs to be an intentional strategy to keep Minnesota's soil covered. Soil health goals, financial incentives to reach goals, and a Soil Health Action Plan are an important start.

- Laura Schreiber, Land Stewardship Project (LSP) *(WebEx 00:41:00)*
  - She is a policy organizer with LSP, which is a membership based non-profit working to promote regenerative agriculture and developing healthy communities. They do this work in a variety of ways, including policy. LSP is leading a five-year strategic initiative on the climate crisis by innovating and promoting resilient soil-building farming systems.
  - In 2020, they developed a steering committee (mostly farmers) to review their five-year strategic initiative. There were many listening sessions, surveys, and conversations that revealed a theme of landscape transformation. Farmers are facing barriers like extreme drought/water events and financial stress, which limit their ability to adopt these climate initiatives. A statewide goal is necessary to incentivize farmers to utilize these types of soil health practices and to diversify income streams.
- Mark Gutierrez, Executive Director, Minnesota Soil Health Coalition *(WebEx 00:46:30)*
  - They are a statewide organization with seven board members (all farmers). They have a 30 member farmer-to-farmer network that mentors farmers to transition to soil health practices.
  - They partner with many other organizations that are interested in soil health or clean water to move in the same direction and to be as efficient as possible with the funding.
- Rich Biske, The Nature Conservancy (Policy Committee member) (WebEx 00:48:30)
  - The Nature Conservancy is a global non-profit. They have a North America agricultural program, which focuses on sustainability (both nutrient efficiency and soil health) that apply to Minnesota. Nationally, they have a goal of fifty percent of soil health on cropland acres. They have a goal of five million acres in cover crops by 2030.
  - There are demonstration projects in new locations to build local partner capacity for both cost-share and cost-effective evaluation practices. They have a pilot ecosystem markets project to provide innovation and new revenue streams to producers willing to adopt new cover crop and soil health practices. They also have an equipment cost-share program when there may be a lack of cover crop equipment. They also train crop advisors.
  - They want to overcome barriers to reach these soil health and cover crop goals with a broader approach to understand issues, and to be flexible to meet farmer needs. There should be a common understanding about where we are today, to measure it, to be able to move forward looking at benchmarks. It will be good to use over time to evaluate the success of any policy or funding done. It should be inclusive to help have broad scale participation.
- Ann Marcelle Lewandowski, Minnesota Office of Soil Health *(WebEx 00:53:30)*
  - She is on staff at the University of Minnesota (UMN) Water Resources Center and is the coordinator for the Minnesota Office of Soil Health (MOSH). It is a collaboration between the Board of Water and Soil Resources (BWSR) and the Water Resources Center, but they cooperate with many partners. Their work is led by Dr. Anna Cates, a state soil health specialist.
  - They have been listening to many people talk about goals and strategies. They are hearing many objectives, goals, strategies, and there are all a little different. Many people are interested in climate

mitigation issues and climate adaption or resilience goals. Synchronizing the work of all these different partners is necessary since they have different processes and priorities. Relationship building is important. At the UMN they are interested in metrics that are measurable and trackable, but it needs to be connected to the whole system working together for soil health benefits.

- Brad Redlin, Minnesota Department of Agriculture *(WebEx 00:58:30)*
  - He works with the Minnesota Ag Water Quality Certification Program (MAWQCP). There is a soil health endorsement form in the meeting packet.
  - MAWQCP works one-on-one to help farmers and agricultural landowners to become certified. It is all over the state, in each county. They look at every aspect of the land, every crop, every rotation, looking at the risks and potential changes.
  - They talk about five core principles of soil health: minimal disturbance, keep the soil covered, maintain living root, maintain diversity, and integrate livestock. They have basic endorsement requirements for soil health: achieve MAWQCP certification, advanced pest management score (9-10) on MAWQCP assessment, standard or advanced score for nitrogen and phosphorus management on MAWQCP assessment, as well as participation or membership in a group or organization that shares information and/or advocates for soil health and sustainability.
  - Looking at what is considered a "soil health acre" would be good, because there are soil health acres in the MAWQCP. These are big steps by growers. Aligning and maximizing efforts would be good.
- John Jaschke, Board of Water and Soil Resources *(WebEx 01:06:30)*
  - The more specific we can be, the better. Having goals of acres may be useful, but what would be more useful is flexibility that acknowledges that farmers face different situations based on landscapes, cropping systems, soil types, topography, etc. Farmers make business decisions. There is value in a plan, but it can be more specific. There may be options other than the Legislative process, to work towards this area.
- Peter Schwagerl, Minnesota Farmer (Policy Committee member) *(WebEx 01:13:30)*
  - After hearing these conversations, I think it is an exciting time to be in agriculture. There are many major challenges facing us, and agriculture has a huge potential to impact these areas. As farmers, we have to be deliberate in how we attack the issues to make sure their business stays successful. This conversation has touched on a lot of the hurdles farmers see in this transition.
  - A few things farmers are talking about that we should be aware of:
    - Maintain the good work of education and outreach component to farmers. Farmers are getting the message and can reach out to different groups for more information as practices, management, and information changes.
    - The big barrier is the upfront cost, and overcoming that has to be part of the plan.
    - There has been work for cover crops and alternative cash crops that could help in this area. For example, Kernza—the intermediate wheat grass. Let's make sure that there is enough market development. Kernza can do a lot for the landscape, but if farmers cannot sell the crop it is a dead end. The market needs to be able to sustain these alternate cash crops. The economic outcomes need to be known before farmers can make those decisions.
    - There is some concern on data privacy for the information about practices and outcomes on one's land. Strong actions would make farmers feel more comfortable and in control, so that their information isn't sold for other uses like grain seed marketing.

Discussion/Comments:

- John Barten: The conversations around goals was interesting. I like the idea of goals, because it is hard to determine if we are making progress without them.
- Dan Stoddard, Minnesota Department of Agriculture (MDA): Soil health has a lot of positive outcomes and has great potential. However, a large percentage of the land in Minnesota is rented. I don't know how people tackle it. Does anyone have any good ideas to get these concepts on rented lands?

- Paul Gardner: Yes, but not specific to soil health. The Council has heard from non-operating landowners how to engage with them, in particular women landowners. These are more labor intensive. Two people need to decide to take action on the land, which makes it harder.
- Brad Redlin, MDA: If people want the MAWQCP certification and they rent land, they are required to get all of the rented land certified too. There is no way to get out of that provision. Renters would need to follow the certifications and plans put in place as part of their rental agreement to keep the certification.
- Peter Schwagerl: Rented land for farmers is an additional layer of risk, especially when looking at costs for equipment. Tools that can help include long-term rental agreements and conservation leases, but these require a landlord that is on board and willing to work on it with farmers. Often, landlords just want top dollar. It does increase the risk on the soil health investment if that land does not belong to the farmer to use in the oncoming years. There are also tax credits for beginning farmers, and there could be more discussion on potential soil health items in this area.

- Paul will follow up with a document regarding the complexities of the conversations today, but leave any specific goals blank. It will capture what has been said today. This may help if the committee would like to come up with a policy statement in the future.

Aligning Policy Topics with the Council's Strategic Plan *(WebEx 01:48:30)*

The potential policy topics spreadsheet has been revised. After speaking with committee members, there may be more traction if it is connected to the Council's Strategic Plan. There is a column added to reference the strategy in the Strategic Plan. Additionally, bold items are action taken already. These are organized by goals from the Strategic Plan.

- Does the committee think this layout is better?

Discussion:

- John Barten: I like that the Council's Strategic Plan is referenced. It will be helpful when presented to the full Council. It helps to prioritize items.
- Rich Biske: This is update is incredibly helpful. It is helpful to know when items are aligned with similar interests and to know that the Council is aligning with other efforts.
- Committee members will review this spreadsheet, to have a more in-depth conversation at the next meeting.

Review of Draft Pharmaceuticals Policy Statement *(WebEx 02:00:00)*

This is review after presentations after presentations by the MPCA's Mark Ferrey and Randy Thorson. Item number three on the policy statement was recently added, and some of the funding in this area could be used for additional research on how the pharmaceuticals are getting into the surface and groundwater.

Discussion:

- Victoria Reinhardt: I think the updates are good. One change I would suggest, is for item two. The Washington State legislation has not been recently adopted, and there are other examples now, so that can be removed from the statement.
- John Barten: I'm not sure if there is anything to add from those presentations, since there was a lot of uncertainty in how the pharmaceuticals are getting into the water. However, item number three is important to help fund these areas.
- Victoria Reinhardt: Perhaps we can change item three to be moved to item one. Then, item two would be "Adopt an industry funded safe medication return program" leaving the same bullets. Then, the first item can shift to item three. The research will inform the other areas we are trying to reach. It flows well.
- This document will be updated for the next meeting.

New Business:

- December 17 meeting will be canceled.

Adjournment *(WebEx 02:11:41)*

SUBCOMMITTEE ON MINNESOTA WATER POLICY

Remote Information Meeting

JANUARY 29, 2022

Co-Chairs:
Sen. Chris Eaton (Presiding)
Rep. John Poston

Jim Stark, Director
Subcommittee Support: Kathryn Ho

Legislative Process

- Fifty + recommendations were evaluated
- Surveys to Subcommittee Members and Stakeholders
- 3 Stakeholder meetings held--comments and suggestions
- Prioritized to 13 topics
- Subcommittee consensus reached on 13 topics in November
- Bills are drafted

BILL DISCUSSIONS

- **B1: Sustainable Water: Dr. Tony Runkle and Dr. Harvey Thorleifson (UM/ MGS)**
- **B15: Watershed District Funding: Emily Javens (MAWD)**
- **B3:Improving Water and Agriculture: Precision Ag: Dr David Mulla (UM)**
- **B5: Voluntary private well testing: Jeff Stoner (retired USGS; MNWOO)**
- **B7: Water safety plans for cities– a pilot: Jeff Broberg (MNWOO)**
- **B8: Soil-health action plan including research, implementation, and outreach**
- **B6: Identifying vulnerable aquifers– coordinated monitoring**
- **B9: Water Commission and the Wastewater Advisory Council**
- **B10: Complete land preservation goals for the Upper Mississippi**
- **B11: Ensure drinking water free from lead**
- **B4: Riparian buffer tax credit**
- **B12: Encourage groundwater recharge where needed**
- **B 13: Keeping water on the land, water retention: Jim**

BILL DISCUSSION

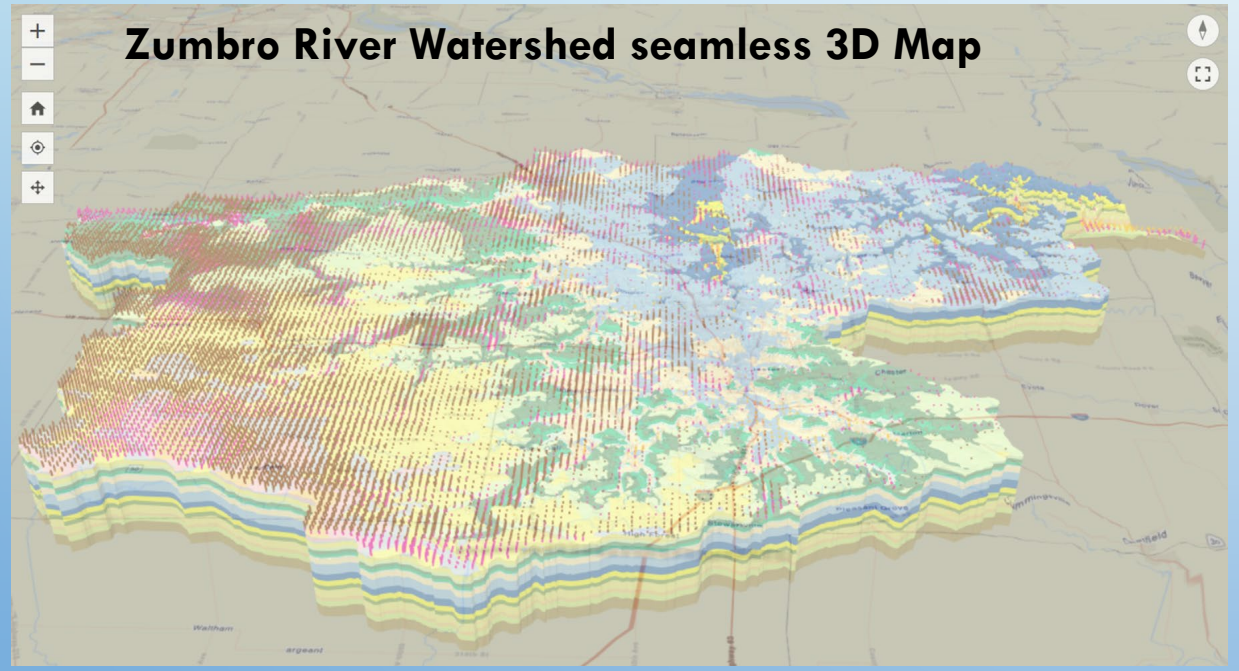
B1: Sustainable Water: Dr. Tony Runkle and Dr. Harvey Thorleifson (Minnesota Geological Survey)

How can we most effectively manage groundwater-surface water systems?

With groundwater models across entire watersheds– a Pilot effort

Three requirements:

1) **New technology**
2) **Seamless 3D map of aquifers across watershed, counties**
2) **Aquifer and surface water measurements**
3) **Integrate the above into a computer groundwater model**



What information can groundwater models provide?

- **Predict changes in water budget**
  Changes in precipitation and water acquisition will change aquifer water levels and discharge to steams and lakes

- **Predict changes in water quality**
  Transport of contaminants to wells, streams, and deeper aquifers

BILL PRESENTATIONS

B15: Watershed District Funding

Emily Javens, Executive Director (Minnesota Association of Watershed Districts)

Watershed District Levy Options

MN Statute 103D.905 Subdivision 3. General Fund.

MINNESOTA ASSOCIATION OF WATERSHED DISTRICTS, INC

Land and Water Shall be Preserved

Option 1. Increase the $250k levy limit to an amount that recognizes 20+ years of inflation since the last levy limit increase.

A general fund, consisting of an ad valorem tax levy, may not exceed 0.048 percent of estimated market value, or ~~$250,000~~ $500,000, whichever is less. The money in the fund shall be used for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district.

Option 2. Allow the method used by metro watershed districts (for 30+ years) to be used by ALL watershed districts within the state.

A general fund, consisting of an ad valorem tax levy, may not exceed 0.048 percent of estimated market value, or ~~$250,000~~ an amount to pay the reasonable costs of administering and implementing priority programs identified in a state-approved, locally adopted watershed management plan as defined in section 103B.801, 103D.401, or 103D.405, whichever is less. The money in the fund shall be used for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district.

PRECISION AGRICULTURE

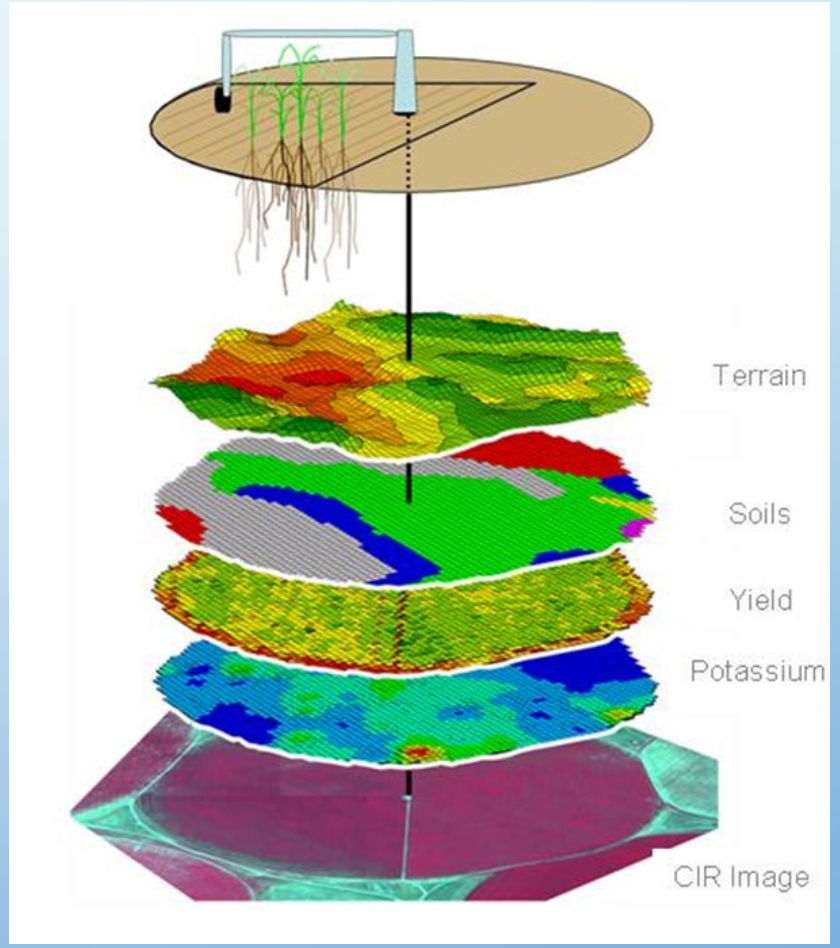
DAVID MULLA,

DIRECTOR PRECISION AG CENTER

UNIVERSITY OF MINNESOTA

WHAT ARE PRECISION AGRICULTURE NEEDS?

- **RESEARCH TO DEVELOP MANAGEMENT PRACTICES APPLIED AT THE RIGHT RATE, RIGHT TIME, AND RIGHT PLACE**
  - MANAGEMENT ZONES
  - VARIABLE RATE NUTRIENTS OR IRRIGATION, DEPENDING ON SOIL (MINERALIZATION, DENITRIFICATION, LEACHING) OR CLIMATE (EVAPOTRANSPIRATION) FACTORS
  - EARLY DETECTION OF INSECTS, WEEDS, DISEASE WITH REMOTE SENSING
  - VARIABLE TILLAGE AND SEEDING OPERATIONS
  - STRATEGIC CONSERVATION VEGETATIVE PLANTING PRACTICES
- **EXTENSION AND OUTREACH IS CRITICAL**
  - INSTITUTE FOR AG PROFESSIONALS
  - NITROGEN AND NUTRIENT MANAGEMENT CONFERENCES
  - NITROGEN SMART TRAINING PROGRAM



SAFE DRINKING WATER:

VOLUNTARY TESTING OF PRIVATE-WELL WATER IN MINNESOTA

JEFF STONER & BRUCE OLSEN RETIRED, MGWA

JEFF PETERSON & JOEL LARSON, UMN-WRC

JEFF BROBERG & PAUL WOTZKA, MNWOO

MDH

PROBLEM:
UNSAFE DRINKING WATER IN SOME PRIVATE WELLS

- **About 1.2 million Minnesotans drink water from private wells**
- **Few private-well owners test their water quality**
- **Focus on Arsenic, Bacteria, and Nitrate (geological and human sources of contamination)**

SCIENCE AND COMMUNITY ENGAGEMENT DURING THE COVID-19 PANDEMIC

Free water testing clinics

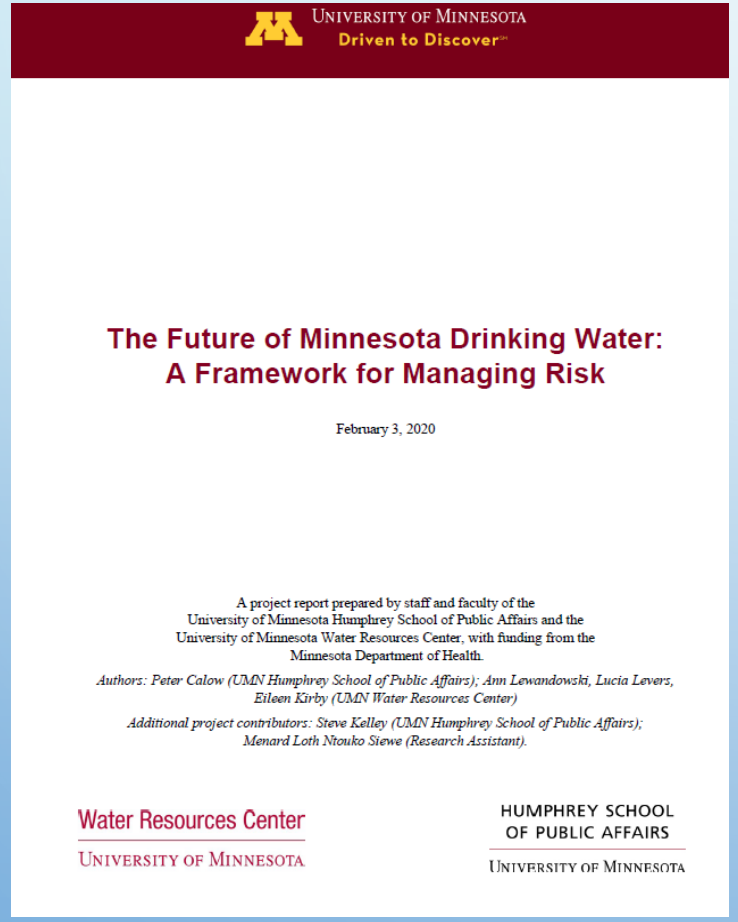
- Local Collaborators: (Coordinate space, announcements, testing equipment, paper forms to name a few)
- Recruit volunteers: (groundwater professionals, lab technicians, traffic control, runners, follow-up contacts, info on water-treatment options)
- Assess performance of clinics > adjust guides for future testing clinics

WE SUPPORT PILOT WATER SAFETY PLANS

JANUARY 12, 2021

JEFFREY S. BROBERG, LPG
minnesota
well owners organization

WATER SAFETY PLAN PILOT



UNIVERSITY OF MINNESOTA
Driven to Discover℠

The Future of Minnesota Drinking Water:
A Framework for Managing Risk

February 3, 2020

A project report prepared by staff and faculty of the
University of Minnesota Humphrey School of Public Affairs and the
University of Minnesota Water Resources Center, with funding from the
Minnesota Department of Health.

Authors: Peter Calow (UMN Humphrey School of Public Affairs); Ann Lewandowski, Lucia Levers, Eileen Kirby (UMN Water Resources Center)

Additional project contributors: Steve Kelley (UMN Humphrey School of Public Affairs); Menard Loth Ntouko Siewe (Research Assistant).

Water Resources Center
UNIVERSITY OF MINNESOTA

HUMPHREY SCHOOL
OF PUBLIC AFFAIRS
UNIVERSITY OF MINNESOTA

- **WATER SAFETY PLANS = TAP TO SOURCE ASSESSMENT OF WATER QUALITY FOR RISK MANAGEMENT BASED ON HOUSEHOLD AND COMMUNITY CIRCUMSTANCES**
- **MORE FLEXIBLE**
- **MORE ENGAGEMENT IN RISK ASSESSMENT AND MANAGEMENT**

BILL PRESENTATIONS

- **B8: Soil-health action plan including research, implementation, and outreach**
- **B6: Identifying vulnerable aquifers: coordinate monitoring:**
- **B9: Reactivation of the Water Commission and the Wastewater Advisory Council**
- **B10: Complete land preservation goals for the Upper Mississippi**
- **B11: Ensure drinking water free from lead**
- **B12: Encourage groundwater recharge where needed, with restrictions**
- **B 13: Keeping water on the land, water retention**

Legislative Coordinating Commission

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Subcommittee on Minnesota Water Policy

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House Members

Representative John Poston, Co-Chair
Representative Patty Acomb
Representative Peter Fischer
Representative Josh Heintzeman
Representative Todd Lippert
Representative Paul Torkelson

Senate Members
Senator Chris Eaton, Co-Chair
Senator Rich Draheim
Senator Kent Eken
Senator Michael Goggin
Senator Bill Weber
Senator Charles Wiger

January 28, 2021

Title First Name Last Name
Address 1 Address 2
City, State Zip

RE: LCC Subcommittee on Minnesota Water Policy--Legislative Recommendations

Dear Title Last Name,

The Legislature Water Commission was re-established as the Legislative Coordinating Commission's Subcommittee on Minnesota Water Policy (subcommittee) by the Legislative Leadership in 2020. Because water is important, complex, controversial, and costly, the development of water policy needs to be undertaken thoughtfully. The 12 member, bi-cameral and bi-partisan subcommittee reviews water-policy issues that affect Minnesota.

During the interim, the subcommittee held hearing to explore water priorities. Meeting agenda and material are available at the subcommittee website. The committee's draft recommendations for 2022 have been developed, based on discussions among committee members, stakeholders, and state-agency personnel and are summarized in attached recommendations or is available to view at https://www.lcc.mn.gov/smwp/Meetings/2021/20211217/DRAFT_Letterhead_Accessible_Leg-Issues_2022_Short.pdf. Discussion papers on each of the issues are available at the subcommittee website. We request the opportunity to brief you on these legislative priorities during the session. You also are cordially invited to attend any of our committee meetings.

The priority issue areas for 2022 are as follows:
- **Ensure clean and sustainable drinking water**
- **Protect and enhance the quality of our streams, lakes, and groundwater**
- **Ensure that water infrastructure is adequate**

Thank you for your consideration.

Respectfully,

Representative John Poston (Co-Chair)

Chris Eaton

Senator Chris Eaton (Co-Chair)

Encl: 2022 Legislative Policy Recommendations

Subcommittee on Minnesota Water Policy

Draft Legislative Recommendations: January 2022

The subcommittee endorsed the following issues, by consensus, at the November meeting:

1. Define Sustainable groundwater withdrawal limits using technological advances--define limits in a pilot one-watershed/one plan (UM Sustainability report)

2. Bill 2 is removed
3. Improving water quality: Allocation to the UM for research/outreach for precision agriculture.
4. Tax credit for private riparian buffer lands
5. Safe drinking water—allocation to MDH/UM to support private well safety water testing clinics by a non-profit (UM report)
6. Ensure safety of private wells--identify vulnerable aquifers: coordinate and supplement agency monitoring
7. Water safety plans for cities—appropriation fora plan and pilot (UM/ MDH recommendations)
8. UM allocation-- prepare a soil-health action plan including research, implementation, and outreach
9. Reactivation of the LWC and the Water and Wastewater Advisory council
10. Complete land preservation objective to preserve high-valued lakes in the Upper Mississippi—reaching the goal
11. Environmental justice: Ensure that all have drinking water free from lead—focus on children, private wells, and rental properties
12. Policy and an appropriation to encourage groundwater recharge where needed, with restrictions
13. Keeping water on the land, water retention
14. Bill 14 is removed
15. Watershed Districts- changing the general fund appropriation limit to support fixed costs

Brief Explanations of Bill Contents: More detail is available.

Bill 1: Define Sustainable groundwater limits using technological advances--define limits in a pilot one-water/one plan watershed (UM Sustainability report): The Minnesota Geological Survey (MGS) s advanced the science of analyzing geologic data to the extent that it can now be used to efficiently define water bank accounts for aquifers and for watersheds. This kind of effort is a priority in the University's water sustainability report. These technological advances can now be used to enhance water management for the one watershed/ one plan process being implemented across the state. The bill would support a pilot that would combine geologic data analyses, by the MGS, with modeling by the DNR. The product would increase water budget information to manage on a sustainable basis. It would serve as a pilot of watersheds and aquifers across the state.

Bill 2 is removed

Bill 3 Precision agriculture research and outreach: This bill involves funding the to the UM to improve agricultural production and water quality, by advancing research and outreach related to precision agriculture. Outcomes would include pilot studies and recommendations regarding data privacy, public-private partnerships, and needed technical assistance focused on the most challenging agricultural and water issues.

Bill 4: Tax credit for private riparian buffer lands: The second bill involves a tax credit to landowners for riparian buffer lands taken out of agricultural production. The buffer law provided a major step in improving the waters of the state. It required buffer strips along lakes, rivers, streams, and some ditches to filter phosphorus, nitrogen, and sediment. This bill would provide a tax credit for land lost to farming as well as policy to propose a compensation mechanism and a process.

Bill 5: This bill involves support for voluntary water testing of private wells. Private wells supply over a million Minnesotans with drinking water. There are no state requirements for water safety testing. Water safety for private wells is called out as a priority in a recent report to the legislature by MDH and the UM. The bill would provide minimal funding to assist non-profit organizations, who are volunteers, to conduct

local testing. The allocation would be to the MDH, or the University of Minnesota, to support the cost of water testing, educational materials, and information storage.

Bill 6: Ensuring the Safety of Private Wells by Identifying and Monitoring Vulnerable Aquifers: This bill involves water safety for those using private wells. It would identify and monitor aquifers that are vulnerable to being contaminated. The agencies have various programs of groundwater monitoring. However, support is needed to coordinate water testing in those networks, and in some areas, expand the networks over the most sensitive aquifers. The resulting effort, coordinated across the agencies and the MGS, would provide a means to increase source-water protection safety of those using private wells. The bill simply directs the preparation of a plan.

Bill 7: This involves water safety planning for cities. It would support a pilot as described in detail in the recent drinking water report to the legislature. Source-to-tap water safety assessments provide a flexible approach to local drinking-water-safety planning. They result in water safety plans that would be approved by the MDH. The bill would direct the preparation of a prototype plan for one city.

Bill 8: This would provide an allocation the UM to prepare and implement a soil health action plan. It would include a soil health plan, research, implementation, and outreach. This is a priority for the Clean Water Council.

Bill 9: This bill calls for the reactivation of the Legislative Water Commission as well as reactivation of the Water Supply Systems and Wastewater Treatment Advisory Council. The reactivation of both groups had strong support from recent surveys and during stakeholder meetings.

Bill 10: This involves a roadmap to reach land preservation objectives to preserve high-valued lakes in the Mississippi headwaters. This also is a priority of the Clean Water Council. Research, by the DNR, suggests that protecting 70% of land in a watershed is sufficient to preserver high-value lakes. That goal is within reach in the Mississippi headwaters. The effort would identify lands needed to be preserved, as working forest land, and would prepare a plan to fund the preservation of those lands through existing programs like Minnesota Forests of the Future. In so doing, the effort also helps protect source areas that supply drinking water for St Cloud, Minneapolis, and St Paul.

Bill 11: This bill involves environmental justice issue. It would help to ensure that everyone has drinking water free from lead. As a start, the bill would provide for testing of drinking water for childcare facilities, private wells, and rental properties that is not now provided.

Bill 12: The bill would involve policy and an appropriation to encourage groundwater recharge where needed. *In areas of groundwater depletion, artificial recharge can increase natural recharge.* However, the practice has generally been discouraged in Minnesota. The legislature funded, through the Freshwater Society and the University of Minnesota, an effort to examine the feasibility of expanded groundwater recharge. In order to capitalize on this study, this bill would address policy and fund a pilot study of enhanced recharge.

Bill 13: Keeping Water on the Land: This would provide a funding to increase ongoing efforts that would create policy and fund additional programs to store water, improve water quality, reduce flood peaks, and to increase groundwater recharge in rural and in urban areas.

Bill 14 is removed

Bill 15: This last bill involves an appropriation to support fixed costs for watershed districts. It would change in statute to increase the general fund allocation limit to keep up with inflation.

Committee Chairs, Co-Chairs and Division Chairs:

- ***Environment and Natural Resources Committees***
- ***Capital Investment***
- ***Agriculture Finance***
- ***Agriculture Policy***
- ***Governor Walz***
- ***Lessard-Sams Outdoor Heritage Council, Chair***
- ***Legislative and Citizens Commission on Minnesota Resources, Chairs***
- ***Clean Water Council, Chairs***

Clean Water Council

Soil Health Policy Statement Draft

for 28 Jan 2022 Policy Committee Meeting Discussion

[As discussed at the Clean Water Council Policy Committee meeting in November, staff pledged to summarize views and information on soil health in a draft policy statement format. However, the actual position of the Council would be left blank so that the committee can deliberate the contents of this draft.]

Policy Statement

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Problem/Context

Farmers can reduce nutrient runoff, increase soil productivity, reduce financial risk from weather events, and reduce input costs by adopting strategies that improve soil health. Many current programs help landowners learn about and try these strategies, but these strategies need higher rates of adoption to meet nutrient reduction goals in Minnesota.

This document will summarize current efforts as well as proposals to scale these efforts up.

For reference, here are several examples of what constitutes soil health in Minnesota.

Statutory Definition of Soil Health (Minn. Stat. 103C.101, Subd. 10a)

> "Soil health" means the continued capacity of soil to function as a vital living system that sustains plants, animals, and humans. Indicators of soil health include water infiltration capacity; organic matter content; water holding capacity; biological capacity to break down plant residue and other substances and to maintain soil aggregation; nutrient sequestration and cycling capacity; carbon sequestration; and soil resistance.

Core Principles of Soil Health (Minnesota Department of Agriculture-MDA)

The MDA's Minnesota Agricultural Water Quality Certification Program (MAWQCP) includes a soil health endorsement. According to the MAWQCP's soil health endorsement evaluation form:

> Producers must meet basic requirements and achieve the advanced threshold in at least three of the five principles and standard in the others in order to qualify for a Soil Health Endorsement.
>
> **Basic Endorsement Requirements:**
> - Achieve MAWQCP certification

- Advanced pest management score (9-10) on MAWQCP assessment
- Standard or advanced score for nitrogen and phosphorus management on MAWQCP assessment
- Participation or membership in a group or organization that shares information and/or advocates for soil health and sustainability

Core Principles of Soil Health

- **Minimize Disturbance**: Disturb the soil as little as possible to improve water holding capacity, increase organic matter, reduce soil erosion, reduce energy use and decrease compaction
- **Keep the Soil Covered**: Keeping the soil covered improves crop production, nutrient use efficiency, water quality, water holding capacity and can decrease pesticide use
- **Maintain Living Root**: Keep plants growing throughout the year to feed the soil, increase organic matter, water holding capacity and nutrient use efficiency as well as decrease pesticide use
- **Maximize Diversity**: Diversify as much as possible using crop rotation and cover crops to increase organic matter and biodiversity in the soil
- **Integrate Livestock**: Livestock integration helps balance carbon/nitrogen ratios, manage residue, decrease herbicide use and helps manage nutrients from animal waste

Clean Water Fund Appropriations That Support Soil Health Activities

Currently, there are several initiatives (including those supported by the Clean Water Fund) that support greater soil health.

Clean Water Fund Appropriations That Support Soil Health Activities		
Agency	**Program**	**Description**
BWSR	Grants to Watersheds with Approved Comprehensive Watershed Plans (Watershed-based Implementation Funding)	Makes non-competitive grants to fulfill projects in approved comprehensive watershed management plans (One Watershed One Plan).
BWSR	Surface and Drinking Water Protection/Restoration Grants: (Projects and Practices)	Makes competitive grants for high priority conservation BMPs in local water plans. Up to twenty percent must support drinking water
BWSR	Enhancing Soil Health and Landowner Adoption of Cover Crops for Drinking Water & Groundwater Protection	Supports Minnesota Office for Soil Health. Makes grants to SWCDs for cover crop and conservation tillage demonstration projects. Supports Governor's climate initiative.
BWSR	Tillage, Cover Crop and Erosion Evaluation	Estimates soil erosion and tracks use of tillage BMPs and cover crops.
BWSR	Soil and Water Conservation District (SWCD) Capacity Funding	(Legislative recommendation and not recommended by the Clean Water

		Council.) SWCDs work with landowners to promote soil health.
MDA	AgBMP Loan Program	Supports administration of 2,000+ clean water loans for conservation tillage, SSTS, erosion control, and agricultural waste.
MDA	MN Agricultural Water Quality Certification Program	Provides technical assistance for 1150+ farmers to adopt water quality BMPs with verified results. Matched with federal RCPP grant.
MDA	Technical Assistance	Supports 25 edge-of-field water quality monitoring sites, 100 farm demonstration plots, and 30 field days and other events annually.
MDA	Nitrate in Groundwater	Supports implementation of the new Groundwater Protection Rule and Nitrogen Fertilizer Management Plan to reduce nitrate from fertilizer to groundwater. Working with 38 local government units on nitrate monitoring and reduction activities.
MDA	Forever Green Agricultural Initiative (U of MN)	Supports competitive R&D grants for crops providing continuous living cover, and implementation of those crops.

Other Soil Health Initiatives

Minnesota Soil Health Coalition

The Minnesota Soil Health Coalition is a 501(c)(3) nonprofit organization with a board of agricultural producers. (Web site at www.mnsoilhealth.org.) It is a statewide organization that promotes large scale adoption of soil health practices, making a measurable positive impact on soil erosion, surface water quality, and soil infiltration for Minnesota.

The organization has several key activities:

- Maintain a 30 member farmer-to-farmer network that mentors farmers to transition to soil health practices
- Organize and collaborate on events, trainings, field days, and meetings with producers and other entities
- Establish research base-Ag Center at MN College for a minimum of 5 year agreement for testing, data, and information exchange of soil health practice implementation in Minnesota
- Provide leadership development, education, and training opportunities
- Create and maintain a statewide soil health forum

The Nature Conservancy

The organization has a North America agricultural program, which focuses on sustainability (both nutrient efficiency and soil health) that apply to Minnesota. Nationally, they have a goal of having soil health practices on fifty percent of cropland acres. They have a goal of five million acres in cover crops by 2030.

The organization has demonstration projects to build local partner capacity for both cost-share and cost-effective evaluation practices. They have a pilot ecosystem markets project to provide innovation and new revenue streams to producers willing to adopt new cover crop and soil health practices (Ecosystem Services Market Consortium, or ESMC). In addition, the organization has an equipment cost-share program when there may be a lack of cover crop equipment, and they also train crop advisors.

Minnesota Office for Soil Health

According to its website:

> The Minnesota Office for Soil Health works towards healthy farms and ecosystems by delivering soil education, promoting grower networks, and researching best practices.
>
> The Minnesota Office for Soil Health was formed in 2017, as a collaboration between the Board of Water and Soil Resources and the University of Minnesota Water Resources Center. Our mission is to protect and improve soil resources and water quality by developing the knowledge, skills and abilities of local experts to more effectively promote sustainable soil and land management.

Its activities include co-hosting the 2020 Soil Management Summit, developing the Minnesota Cover Crop Guide, leading the update of the Midwest Cover Crop Council crop selection tool, developing a better understanding of how Minnesota's cold climate soils respond to soil health management systems. The office is also a convener of stakeholder forums.

Land Stewardship Project (LSP)

This nonprofit organization has a Bridge to Soil Health Initiative.

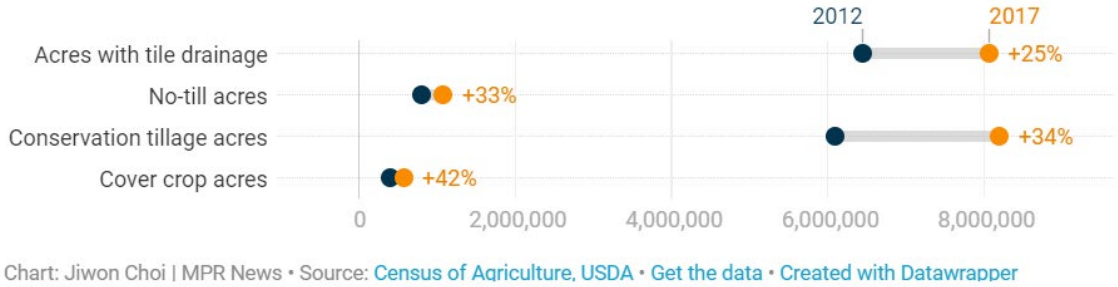
> [The] Bridge to Soil Health initiative works with crop and livestock farmers and other professionals that view soil as a long-term investment. LSP acts as a bridge between emerging soil health information and local farming practices, thereby uniting a community of farmers as the Soil Builders' Network.

The organization also hosts field days, workshops, on-farm demonstrations, and emerging soil health research. LSP also publishes a Soil Health Pocket Guide and maintains soil health resources on its web site.

Results to Date

Despite these quality programs and other individual efforts, it is believed that soil health strategy adoption is low in Minnesota. Many farms may use strategies for soil health but not at the threshold described by the MAWQCP, and this would be hard to track.

Better soil practices have definitely increased. This chart from Minnesota Public Radio[1] used Census of Agriculture data to track progress on several major practices. It notes a substantial increase in conservation tillage acres but modest progress on cover crops.



However, the total number of acres needed for these practices is low. (See graphic from Nutrient Reduction Strategy Five-Year Progress Report below.)

Barriers/Concerns Raised by Stakeholders

Stakeholders convened by the Clean Water Council have expressed several concerns or barriers to increased adoption of soil health practices, or to statutory goals.

- **Increasing outreach for non-operating landowners/rented acres**: A sizeable amount of Minnesota row crop acres is rented out by non-operating landowners (NOLO). Working with both NOLOs and renters is more labor intensive for getting agreement. Some models have worked. The nonprofit Renewing the Countryside has convened learning circles, especially for female farmers and NOLOs. Landowners who want the MAWQCP certification and who rent land are required to get all of the rented land certified too. A farm organization Clean Water Council member noted that long-term rental agreements and conservation leases can work, but these require a landlord who is on board and is willing to accept the risk.
- **Increasing outreach for crop advisors:** Advisors often have the greatest influence on a farmer's decision and can make or break the decision to adopt soil health. Educating them and gaining their trust is essential.
- **Accommodating variation by farm**: A statutory goal would need flexibility that acknowledges that farmers face different situations based on landscapes, cropping systems, soil types, and topography. This would be somewhat similar to how the buffer law was carried out.

[1] Dan Gunderson, Elizabeth Dunbar, and Jiwon Choi, "A Look at Minnesota Farming in 7 Charts," Minnesota Public Radio, https://www.mprnews.org/story/2019/04/11/ag-census-2017-minnsota-snapshot, viewed 25 January 2022

- **Maintaining quality outreach and education for farmers:** Practices, management, and information change constantly, so keeping farmers up to date is important.
- **Acknowledging the barrier of upfront cost:** Implementing the soil health principles unavoidably requires new or retrofitted equipment from what is used in conventional systems, as well as potential for additional materials costs for things like fencing, software, and other soil health supportive actions. Additionally, the experience with Kernza shows that there must be market development so that the market can sustain alternative cash crops, and so farmers can take the risk. There are also few custom planters/reduced tillage service providers.
- **Securing data privacy:** Farmers will be concerned about the privacy of their data, such as practices and outcomes on their land. Strong protections would make farmers feel more comfortable knowing that their data won't be sold for other uses like grain seed marketing.
- **Improving synchronization:** Many stakeholders at the federal, state, and local level are engaged in soil health work in different ways and with different audiences, but they aren't always working in unison.

Proposed Solutions to Date

Soil Health Related Items in Clean Water Council's Strategic Plan

The Clean Water Council has several strategies in its Strategic Plan that influence soil health.

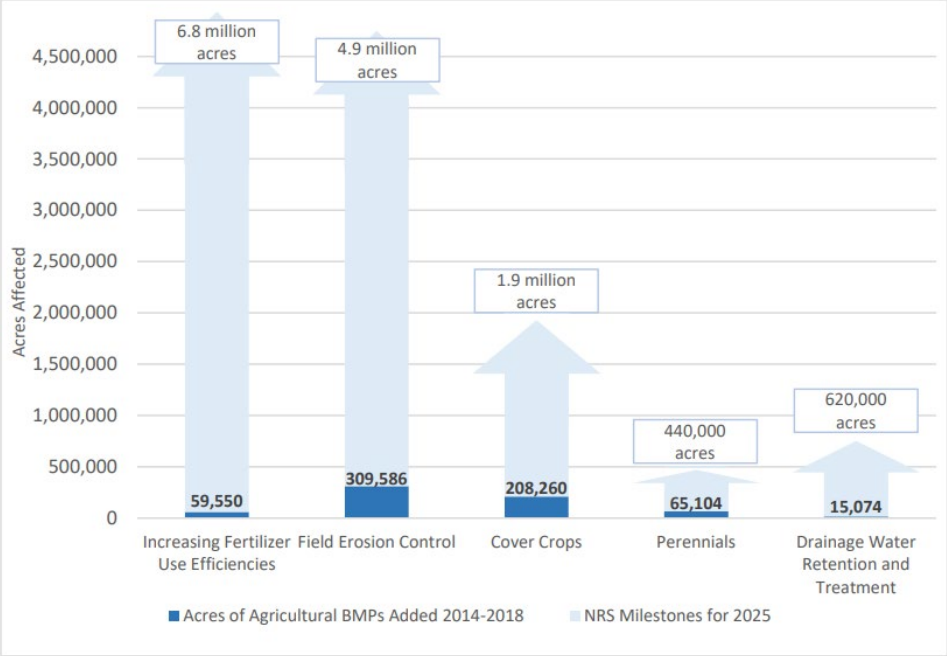
- Achieve a goal of five million acres of row crop agriculture that use cover crops or continuous living cover by 2034.
- Enroll 6,500,000 acres and 5,100 Minnesota farms in the Minnesota Agricultural Water Quality Certification Program (MAWQCP) by 2030.
- Recommend spending a minimum of 5% for innovation and activities that focus on "landscape drivers" and pollution prevention.

Soil Health Related Items in the State's Nutrient Reduction Strategy

According to the Minnesota Pollution Control Agency:

> The Minnesota Nutrient Reduction Strategy (NRS) outlines how Minnesota will reduce nutrient pollution in its lakes and streams, and reduce the impact downstream.
>
> The strategy specifies goals and provides a framework for reducing phosphorus and nitrogen levels. The NRS, adopted by 11 organizations in 2014, calls for reducing nutrient levels in major rivers by 10-20% by 2025, with much higher long-term reductions by 2040.

See the excerpt below from page 67 of the NRS's five-year progress report. This excerpt shows Figure 44: Newly affected acreages of agricultural best management practices (2014-2018) *implemented through government programs* [emphasis ours] in the Mississippi River and Lake Winnipeg Basins toward the NRS milestone scenario outlined in the 2014 NRS for completion by 2025.



Legislative Proposals

Several bills have been introduced in 2021 in the State Legislature. Rep. Todd Lippert has taken the lead on promoting soil health with the following proposed legislation.

- **HF1010: Statewide Soil Health Action Plan**. This bill would make a general fund appropriation to the University of Minnesota for a statewide soil health action plan, with the input of BWSR, MDA, DNR, and MPCA, and an appropriation to the University for precision agriculture research and outreach.
- **HF936: Soil Health Cost Share Program**. This bill would appropriate $5.5 million from the general fund to BWSR for cost-share grants or the purpose of establishing soil health practices to mitigate climate change impacts and improve water quality and related public benefits.
- **HF701: Soil-Healthy Farming Goals Established, Financial Incentives Created**. This bill would set soil-healthy farming goals including
    - (1) at least 50 percent of Minnesota farmers implement cover crops, perennial crops, no-till, or managed rotational grazing by 2030;
    - (2) 100 percent of Minnesota farmers implement cover crops, perennial crops, no-till, or managed rotational grazing by 2035; and
    - (3) 100 percent of the state's tillable and grazeable acres employ cover crops, perennial crops, no-till, or managed rotational grazing by 2040.

List of Potential Policy Ideas for the Clean Water Council to Discuss in 2017-2018

REV 6/20/17

Topic	Strategic Plan Reference	Concept	Possible CWF Funding Recommendation Idea?	Keep?
	Goal 1: Drinking water is safe for everyone, everywhere in Minnesota			
Promote more perennial cover	Strategy 1.4: Implement the Nitrogen Fertilizer Management Plan (NFMP) to promote vegetative cover and advanced nitrogen fertilizer management tools to protect private wells in vulnerable areas.	Create property tax incentives for perennial cover in drinking water supply management areas and critical water supply source areas.	No	
Require private well testing	Strategy 1.2: 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.	Require all sellers of real property to test drinking water from wells for bacteria, nitrate, arsenic, manganese, and lead; inform buyers and renters of the test results; and direct buyers to mitigation guidance from the MDH **[Adopted FY22-23]**		
Support manganese response	Currently no strategy on manganese	Support MDH's Manganese Response Plan? **[Likely presentation to Council in January]**	Don't know yet	
	Goal 2: Groundwater is clean and available to all in MN			
Promote water reuse	Strategy 2.2: 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.	Implement the Department of Health's recommendations from its white paper.	No; the MDH didn't ask for additional funding	
	Goal 3: Surface waters are swimmable and fishable throughout the state			

List of Potential Policy Ideas for the Clean Water Council to Discuss in 2017-2018
REV 6/20/17

Topic	Strategic Plan Reference	Concept	Possible CWF Funding Recommendation Idea?	Keep?
Reduce manure runoff	Currently no strategy on manure	*Does the committee want a general policy strategy about manure?*		
		Option 1: Match supply with demand and apply with greater precision	Maybe	
		Option 2: Emphasize education on applying at right time, place, amount, etc.	Maybe	
		Option 3: Focus on regulation and enforcement for higher compliance	No	
		Option 4: Broaden what is in large feedlot general permit, or apply permit to smaller feedlots	No	
Reduce impacts of biofuels	Currently no strategy on biofuels	Request that the Legislature and MN Department of Agriculture consider the impacts to water quality from biofuel policy	No	
Reduce impacts of PFAS	Strategy 3.6: Support effective science-based responses to emerging threats or contaminants of emerging concern.	Support MPCA's PFAS Blueprint **[Adopted 2021]**	No	
Monitor for microplastics	Strategy 3.6: Support effective science-based responses to emerging threats or contaminants of emerging concern.	Support monitoring of microplastics using existing monitoring networks. **[Currently underway from FY20-21 CWF]**	Yes; Legislature initiated this support in FY20-21	
Reduce presence of microplastics	Strategy 3.6: Support effective science-based responses to emerging threats or contaminants of emerging concern.	Support phase out of or reduction in single use plastic bags.	No	
Require source reduction for pharmaceuticals and support more research	Strategy 3.6: Support effective science-based responses to emerging threats or contaminants of emerging concern.	Support extended producer responsibility (EPR) for pharmaceutical safe medication return program, plus: prevention through reformulation; fund research on the pathways into surface water and ground water (including biosolids), identify priority pharmaceuticals that pose the greatest risk to human health and aquatic life, identify and support practicable solutions to reduce their entry into Minnesota waters, and recoup reasonable costs through the industry-funded safe medication return program. **[Adopted EPR platform and no-flush requirement 2018]**	No	
Chronic Wasting Disease	Strategy 3.6: Support effective science-based responses to emerging threats or contaminants of emerging concern.	Support the U of M's continued research on CWD in Minnesota waters. **[Currently underway.]**	Yes; Legislature initiated this support in FY22-23	
Minimize new chloride impairments	Currently no strategy on chloride	Request that the Legislature give MPCA the authority to charge a fee for chloride training. **[Adopted FY22-23]**	No	
		Fully fund the Smart Salting applicator training and certification program, and MPCA chloride reduction program aimed at reducing salt use. **[Adopted FY22-23]**	Some	
		Provide liability protection for the Smart Salting program certificd private winter de-icing applicators to reduce salt use. **[Adopted FY22-23]**	No	

List of Potential Policy Ideas for the Clean Water Council to Discuss in 2017-2018
REV 6/20/17

Topic	Strategic Plan Reference	Concept	Possible CWF Funding Recommendation Idea?	Keep?
		Encourage and support the adoption of the MPCA's Chloride Reduction Model Ordinance language by local government entities. **[Adopted FY22-23]**	No	
		Have the MPCA convene and lead a stakeholder process to develop recommendations for new labelling requirements on bags of de-icing chemicals sold in Minnesota. **[Adopted FY22-23]**	No	
		By 2022, a total of 520 people a year attend Smart Salting Classes. **[From MPCA's Strategic Plan.]**	Some	
		Update the state plumbing code to effectively prohibit the installation of new water softeners in Minnesota that use timers rather than on-demand regeneration systems. **[Adopted FY22-23]**	No	
		Fund a program for activities, training, and grants that reduce chloride pollution. Grants should support upgrading, optimizing, or replacing water softener units. **[Adopted FY22-23]**	Yes	
	Strategy 3.7 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.	By 2022, 100% of all municipal WWTPs have been evaluated for reasonable potential for chloride and permit actions taken to reduce chloride. **[From MPCA's Strategic Plan.]** Provide financial support and technical assistance to municipalities to reduce chloride discharges and allow flexibility for how municipalities achieve these reductions. **[Adopted by CWC for FY22-23}**	Some	
		By 2022, 50% of the communities identified to need source reduction assistance receive it. **[From MPCA's Strategic Plan.]**	Some	
Promote water storage	Currently no strategy on water storage	Consider developing a set of recommendations/principles designed to integrate all of the pieces such as soil health, living cover, conservation cropping systems, pursuing multiple benefits (peak flow, habitat, water quality), fairness, inclusion in 1W1P, and water storage.	Maybe	
		Increase storage/retention by providing property tax relief for sustaining wetlands, flowage easements and flood retention structures that also reduce nutrients.	No	
Promote soil health	**Currently no strategy**	**[Focus of discussion on 11/19/2021]**	Yes	
Reduce nitrogen runoff	Strategy 3.11 Fund technical assistance and local demonstration sites to assure that application of crop fertilizer uses the best available science.	Recommend that the fees on nitrogen fertilizer be increased to support the state's Nitrogen Fertilizer Management Plan, and to help prepare for the expiration of the Legacy Amendment in 2034.	No	

List of Potential Policy Ideas for the Clean Water Council to Discuss in 2017-2018
REV 6/20/17

Topic	Strategic Plan Reference	Concept	Possible CWF Funding Recommendation Idea?	Keep?
Promote more credit trading for cost-effective nutrient reduction	Strategy 3.7: 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	Promote additional opportunities for point to non-point credit trading as outlined in the MPCA's new trading policy guidance document.	Maybe; CWF now provides some nominal support; MPCA published a trading manual in 2020-21	
Enhance shoreland protection	Strategy 3.12 Support in-lake treatment and restoration activities that only address water quality impairments and are supported by comprehensive plans, including 1W1P	Give local governments the backing and support to make variance decisions that protect lakes and rivers.	No	
		Provide funding to local governments to adopt effective shoreline development standards.	No	
		Provide a strong statement on the importance of vegetative riparian buffers in urban areas.	No	
		Recommend that the State act to strengthen how shoreland protections for public water resources are implemented at the local level.	No	
		Add a special set of criteria for variances in shoreland areas.	No	
Require stringent BMPs on priority acres subjected to certain land use conversion	Currently no strategy	Protect targeted lands from the worst impacts from land use conversion (e.g. require Best Management Practices if x number of acres is converted from forestland to potatoes).	Not sure	
Protect healthy waters	Strategy 3.3: 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.	Focus CWF to maintain 70% forest cover in the upper Mississippi drainage area.	Yes	
		Expand the Scientific and Natural Area program to include lakes and rivers of biological significance.	No	
	Goal 3 objective: Prevent and reduce impairments in surface waters	Support greater data sharing on underground utilities. **[Adopted 2021]**	No	

List of Potential Policy Ideas for the Clean Water Council to Discuss in 2017-2018
REV 6/20/17

Topic	Strategic Plan Reference	Concept	Possible CWF Funding Recommendation Idea?	Keep?
Address Aquatic Invasive Species	Currently no strategy on AIS.	View AIS as biological pollutants.	No	
		Provide CWF support for carp removal to improve water quality in lakes.	Yes	
Support improved rangeland/grazing management	Currently no strategy on rangeland	Promote greater support of rangeland management (such as animal containment and watering stations) to reduce erosion and bacteria.	Maybe; EPA 319 grant goes to MPCA for Missouri River Basin for this purpose; MAWQCP also gives credit for this	
Reduce erosion on Highly Erodable Lands	Currently no strategy on HEL	Require conservation plans for Highly Erodible Land (HEL) consistent with USDA Field Office Technical Guide.	No	
Reduce Runoff from Urban Stormwater	Currently no strategy	Require mitigation of soil compaction resulting from residential home construction.	No	
	Goal 4: All Minnesotans value water and take actions to sustain and protect it			

Approved by Policy Committee on 04/27/2018
Approved by Clean Water Council on 05/21/2018
DRAFT revision 01/28/2022

Clean Water Council

Pharmaceutical Policy

Policy Statement

The Clean Water Council recommends that the State establish the following to reduce the discharge of pharmaceuticals into the waters of Minnesota:

1. Fund research on the pathways of pharmaceuticals into surface water and ground water, identify priority pharmaceuticals that pose the greatest risk to human health and aquatic life, identify and support practicable solutions to reduce their entry into Minnesota waters, and recoup reasonable costs through an industry-funded safe medication return program.

2. Adopt a "Safe Medication Return Program."
   - This legislation should provide flexibility by:
     - Utilizing the current collection infrastructure;
     - Requiring manufacturers to support public education and outreach activities; and to cover all administrative and support costs including, but not limited to: collection, compensation to authorized collectors, transportation, secure receptacles, and environmentally sound disposal of covered pharmaceuticals;
     - Allowing residents to take unused medications to drop-off locations or use a mailing envelope, both for free
     - Providing drop-off locations that are "equitable and reasonably convenient"

3. Require the words or symbols for "do not flush" be printed on all prescription pharmaceutical labels, and remove any existing instructions to flush unused portions.

Problem

Pharmaceuticals are used to treat, cure, diagnose, and prevent disease and ailments in humans, agricultural animals, and companion animals. The use of pharmaceuticals is expected to increase in response to increasing demand. These chemicals are designed to be biologically active and potent at low doses. Pharmaceuticals enter the environment through many pathways including:

- Improper disposal of unused medications (both in home and at care facilities)
- Runoff from manure on agricultural fields or feedlots
- Effluent from health care facilities, medication manufacturing and other industrial sources
- Excretion from normal use in humans (e.g. not all of the drug is fully metabolized in the body)

Pharmaceuticals are commonly detected in Minnesota surface water, groundwater and sediment. The concentrations detected are low relative to other contaminants, but they can have negative impacts on the environment, especially aquatic species. It is extremely difficult and costly to remove these chemicals from

wastewater and drinking water. Preventing entry to the environment, such as through improving prescription practices and minimizing input from waste streams is the best way to avoid potential impacts of pharmaceuticals.

In addition to the environmental impact of waste pharmaceuticals being discharged into the waters of Minnesota, there is also a public safety benefit to environmentally sound disposal. Prescription drugs left unused by the intended recipient, which are not disposed of properly, can be misused by others and have serious or fatal consequences. Seven out of ten people who start abusing prescription drugs get them from the medicine cabinets of friends and family. Among children, the most common cause of accidental poisoning is from ingesting drugs. In addition, periodic cleaning of the medicine cabinet reduces the likelihood that adults, especially the elderly, will take the wrong medication, wrong dose or use expired medications.

Current Efforts by State Agencies with Clean Water Fund (CWF)

With funding from CWF, the Minnesota Department of Health (MDH) and the Minnesota Pollution Control Agency (MPCA) conduct research, public education, monitoring and collecting waste pharmaceuticals throughout the State, and environmental surveillance. Both agencies work closely with other State agencies, local entities such as local law enforcement, county & city public health departments, and local pharmacies to keep unwanted pharmaceuticals from reaching our waters.

Minnesota Department of Health:

Pharmaceutical Rapid Assessments: Using a novel method, MDH has established conservative screening values (above which the risk of negative human health affects increases) for 119 pharmaceuticals commonly prescribed in the U.S., and monitored for in the environment.

Outreach & education grants: Grants go to local governments, non-profits, watersheds districts, and academic institutions to raise awareness of pharmaceuticals and other contaminants of emerging concern (CEC), expand outreach on pharmaceutical take-back opportunities, and reduce the presence of CECs in the environment through behavior change.

Educational resources: The Department creates resources for local entities that facilitate outreach to communities and provide a consistent message throughout the State on the health and environmental risks of pharmaceuticals and other CECs.

One Health Antibiotic Collaborative: The MDH leads a team of experts from Minnesota Department of Agriculture, MPCA, Minnesota Department of Natural Resources, Board of Animal Health, Board of Veterinary Medicine, University of Minnesota, pharmacy and dentistry groups, physicians, agricultural representatives, and other experts to ensure that Minnesotans use antibiotics in a manner to reduce antibiotic resistance and protect the environment. http://www.health.state.mn.us/onehealthabx/

Minnesota Pollution Control Agency

Monitoring of pharmaceuticals and other contaminants of emerging concern (CECs) in surface and groundwater: The MPCA monitors pharmaceuticals and other CECs in surface water and groundwater to determine their presence and prevalence in the environment. Currently, the MPCA monitors about 140 chemicals comprised of pharmaceuticals, hormones, anti-corrosives, and other industrial or commercial chemicals in surface and groundwater. Among those, most frequently detected pharmaceuticals in surface water are: antidepressants (amitriptyline, fluoxetine, and sertraline), and iopamidol (an x-ray contrast agent). The January 2021 study, "Pharmaceuticals and Chemicals of Concern in Minnesota Lakes, shares the results of sampling in 50 randomly selected lakes. The study shows that contaminants of emerging concern are widespread in the state.

Investigation of sources of pharmaceuticals and other CECs to the environment and evaluate their potential effects on aquatic life: MPCA conducts focused investigations to determine sources of pharmaceuticals to the environment and understand potential actions to reduce them: pollution prevention, best management practices, rules. Often MPCA collaborates with university and federal researchers in these studies to use genomics and other new techniques to assess potential effects on fish and other aquatic life. MPCA has also developed a semi-automated approach for summarizing known information about the behavior and potential impacts of specific pharmaceuticals and CECs on aquatic life, resulting in an Aquatic Toxicity Profile (ATP). The ATPs provide a basis for comparing one chemical versus another.

Outreach & education materials: The agency provides support to local governments, pharmacies, law enforcement and other agencies to raise awareness on the impacts of pharmaceuticals in the home and in the environment, and to support proper disposal of unneeded pharmaceuticals.

Registration and tracking of waste pharmaceutical collection locations in the state: The MPCA works with local law enforcement, pharmacies, Native American Tribes and other state and federal agencies to encourage the installment of secure bins to dispose of unwanted pharmaceuticals. The MPCA oversees over 350 collection sites and collects data from them annually. Since 2010, these programs have voluntarily collected over 550,000 pounds of waste pharmaceuticals. The MPCA is working with the Department of Human Services on a federal grant to place approximately 25 collection boxes in underserved areas of the state in 2018.