

Policy Committee Meeting Agenda

Clean Water Council

June 25, 2021

9:30 a.m. – 12:30 p.m.

WebEx Only

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

9:30 Regular Business

- Introductions
- Approve today's agenda
- Approve minutes of previous meeting
- Chair and staff update
 - Update on Minnesota Legislation

9:45 Chemicals of Emerging Concern in Waters, Sediments, and Subsistence Fish used by the Grand Portage Band of Chippewa - How to Implement Policy

- Seth Moore, Ph.D., Director of Biology and Environment, Grand Portage Band of Chippewa

10:30 BREAK

10:45 Underground Utilities Policy Statement

- Draft and discussion

12:00 Adjourn

Possible Future Meeting Topics:

- LiDAR: Summary of its uses to date; future needs (From recently passed Legacy Finance bill)
- Neonicotinoids: clothianidin, and imidaclopid (idea from Minnesota House of Representatives)
- Tire chemical and salmon/smelt in Lake Superior (idea from Minnesota House of Representatives)
- New U of M Study: Recommendations for Conserving State's Threatened Groundwater Supply

Policy Committee Meeting Summary
Clean Water Council (Council)
May 28, 2020, 9:30 a.m. to 12:30 p.m.

Committee Members present: John Barten (Chair), Warren Formo, Raj Rajan, and Victoria Reinhardt (Vice Chair).
Members absent: Kelly Gribauval-Hite and Phil Sterner.

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
 - John Barten: He will be unable to attend the June and July meetings, as he is on an extended bicycle trip. Victoria Reinhardt, the Vice Chair of the Policy Committee will be filling in.
- Unable to approve May 28 meeting agenda due to no quorum.
- Unable to approve April 23 meeting minutes due to no quorum.
- Chair and staff update:
 - The family of Pam Blixt has planned a memorial meeting. This will be in mid-June, and Paul Gardner will email out the details to members.
 - The Council has the draft Communications Audit Report from the communications contractor.
 - Update on Minnesota Legislation session ended on May 17. The House and Senate did not come to agreement on the budgets, but there may be a special session starting on June 14. All of the conference committees were dissolved on May 17 and working groups were set up. The Environment and Finance and Legacy Finance Committees have not met yet, but have been exchanging offers in writing to try to come to some agreement. However, Paul has been informed that the Soil and Water Conservation Districts (SWCDs) will likely get \$24 million. Legislative staff have reached out to Paul asking questions on particular programs as well. It is anticipated that the working groups will submit budget spreadsheets to leadership today.

Irrigation in Minnesota:

Please note, two of the industry speakers will not be here today due to a funeral.

Minnesota Department of Agriculture (MDA), by Margaret Wagner, Fertilizer Non-Point Section Manager and University of Minnesota Extension, Dr. Jeppe Kjaersgaard, Research Scientist (*WebEx 00:13:45*)

- Irrigation Management and Water Quality Protection: CWFs support Dr. Sharma, an Irrigation Specialist position at the University of Minnesota (UMN). The Rosholt Farm provides research and demonstrations. There are weather stations that provide data and tools for farmers. In addition, the MDA has secured a matching \$3.5 million Conservation Irrigation Grant from the NRCS-Regional Conservation Partnership Program (RCPP).
 - Dr. Sharma develops guidance and provide education on irrigation and nitrogen BMPs.
 - The Rosholt Farm supports irrigation research and demonstrations where there is the greatest risk of nitrate leaching losses. Pope Soil and Water Conservation District owns the farm. Active research and demonstration projects include: Nitrogen, Cover Crop, and Water Quality; Evaluation of Irrigation Scheduling Tools; Agronomics of Intermediate Wheatgrass (Kernza); and Variable Irrigation and Nitrogen Management. These inform reduced irrigation and nitrogen fertilizer rate recommendations.
 - Weather stations across central Minnesota provide real-time weather data (crop water use, and growing degree days). This area was selected because it has the highest amount of irrigation in the state. This is a tool for irrigators to make management decisions (NDAWN Crop Modeling and Tools, mapping applications, mobile applications).
 - Leveraging Clean Water Funds: The RCPP grant will accelerate conservation irrigation practices in 20 counties.

Dr. Vasudha Sharma, Assistant Extension Professor-Irrigation Specialist, Departments of Soil, Water, and Climate & Bioproducts and Biosystems Engineering, University of Minnesota (*WebEx 00:38:30*)

- 650,000 acres of state crops are irrigated, mostly in glacial outwash sands that dominate Central Minnesota where the water holding capacity is low. Groundwater accounts for 93 percent of irrigation water applied. The major crops that use irrigation include: corn (48%), soybean (20%), dry beans (7%), potato (6%), canning (4%) and others (15%).
- Irrigation is essential to grow these high water demanding crops. Crops are sensitive to a lack of moisture during short, dry periods in summer. Irrigation in sandy soil during dry times reduces the amount of stress on the crop. Irrigated crops are more profitable than non-irrigated crops in the Central Sands region of the state.
- For irrigated corn, the gross annual economic investment is \$171,000,000. Irrigated corn was 56% more profitable than non-irrigated corn. For irrigated soybean, the gross economic investment is \$34,380,000. Irrigated soybean was 75% more profitable than non-irrigated soybean. For other irrigated crops, the gross economic investment is \$122,000,000. Therefore, this impacts more than \$300 million investment, and improves profits by more than 50%.
- From 2002 to 2017, irrigated acres increased 34%. From 2000 to 2015, groundwater withdrawals increased by 27%. High consumption in this sandy soil region has threatened the availability of groundwater in some parts of the state.
- There are problems associated with improper irrigation. In these areas, the water can move through the soil quickly and carry particles with it. There are studies that reveal elevated nitrate concentrations in private drinking wells and several community wellhead protection areas. Groundwater and surface water are linked; high water withdrawals reduce the water levels in nearby lakes or streams, which impacts aquatic ecosystems.
 - Over irrigation causes nutrients to leach from the root zone, contaminate groundwater, waste water, and increase energy costs. This decreases the recharge to lakes and streams, which impacts aquatic ecosystems.
 - Under irrigation: This stresses the plant, reduces the crop yield, quality, biomass, and net return.
- Farmers know they have a responsibility to protect groundwater. The changes can carry risk so farmers are hesitant to change. Farmers also have a lack of technical expertise and actionable information.
 - Lack of applied irrigation research: Crop evapotranspiration (actual and potential) resources are very limited. Advanced technologies require technical assistance for greater adoption.
 - Lack of technical expertise and actionable information: Advanced irrigation scheduling services are available, but there is a lack of resources to use the technology to the full potential. Advanced soil moisture sensing technology is available, but limited information on which soil moisture sensor is best for a particular field and how the data can be used for scheduling. Also a lack of irrigation training staff (UMN and local SWCDs).
- Ongoing Project 1: Developing irrigation and nitrogen combination BMPs.
- Ongoing Project 2: Using drones to develop variable rate nitrogen and irrigation management strategies.
- Ongoing Project 3: Comparison of different irrigation scheduling methods.
- Ongoing Project 4: Development and expansion of online Irrigation Management Assistant Tool (IMA).
- Ongoing Project 5: Performance analysis of different soil moisture sensors.
- Ongoing Project 6: Understanding site specific variable rate irrigation (VRI).
- All projects have outreach with local partners, presentations (47), contacts (2300 from 2019-2021), and publishing.
- They have leveraged about \$1,000,000 in external funding through grant programs for the last two years.

Questions:

- John Barten: Will more sandy soil acres be irrigated? *Answer:* Acreage has increased by 34% in 2002-2018.
- John Barten: How many additional acres in Minnesota would benefit from irrigation? *Answer:* It depends on climate, and we are seeing different patterns.
- Paul Gardner: If irrigation becomes more efficient and cheaper, will more farmers seek to irrigate? *Answer:* It is possible. If they are irrigating properly, it won't impact it as much. It also depends on the type of soil.
- Glenn Skuta: Minnesota is looking at precipitation increasing over time. Is there some approach to decreasing irrigation if we see an increase in precipitation over time? *Answer:* The research does suggest we will receive more precipitation, but also drier months (like July and August) when water supply is critical. Timing is a big issue.

DNR: The Status and Management of [Groundwater Resources](#) Used for Irrigation, by Jason Moeckel, Inventory, Monitoring & Analysis Section Manager, Minnesota DNR (*WebEx 01:10:15*)

- The state policy is to develop and use water sustainably. The state has the authority to limit how much groundwater can be used through permits. Once that limit is reached, the DNR halt or reduce use. The DNR vigorously pursues

science (e.g. geology, water level data, ecology, etc.), while building relationships with stakeholders. If they are in regular conversation with stakeholders, they can better manage any conflicts.

- The Groundwater Management Strategies focus on seven core items. The CWFs helps with most of these items.
 - 1. Heighten the priority given to groundwater.
 - 2. Enhance the information available for decisions.
 - 3. Improve management of appropriation permits.
 - 4. Improve compliance with permits and regulations.
 - 5. Improve communication and education.
 - 6. Effectively address challenge in areas of high use.
 - 7. Promote water conservation and wise use practices.
- Groundwater is used with private wells, public water supplies, canning and other manufacturing processes, and agricultural irrigation. Natural resources like trout streams are completely dependent on groundwater; wetlands are connected to groundwater. We are better off than other states dealing with emergency groundwater issues.
- The last 20 years are wetter than the last 100 years. Most of the increase is coming in from large storm events. There are more 3-inch and 4-inch rain events. The higher amounts can result in more agricultural runoff or leaching. There are also some significant droughts.
- Groundwater use has been trending down over the last fifteen years or so. The water level trends reveal urgency rather than emergency. There are challenges to meet demands impacted by geography and geology. For the most part, the DNR has been able to authorize use. More data will help understand these trends and changes better.
 - Example: [Little Rock Creek](#). The number of permits and water use were increasing more rapidly than most of the state. The DNR had to limit the permits to evaluate the changes. They are now collecting data (well nests, flow data, etc.). The aquifer is supporting the water table, which supports stream flow. However, there are periods when the irrigation season starts and stops that draws the water levels down below the heads of the water table, which affects stream flow. Even with normal to above normal rainfall, groundwater pumping has had an effect on the low flows. Some habitats are negatively affected by streamflow depletion. Stream temperatures are clearly affected by the Sartell impoundment by about 2 degrees Celsius. They will present the data and findings to the area on June 17.
- Irrigation Water Conservation: The DNR Water Conservation Reporting system started in 2017. Irrigators first reported water efficiencies in 2020. There were 544 (about 13 percent) of irrigators who voluntarily reported their water conservation practices for 2020. Of those that reported, 46 percent grew corn, 38 percent grew soybeans, 13 percent grew potatoes, and 7 percent grew canning vegetables.
 - Equipment efficiency: About 47% report using center pivot systems and 41% use low pressure center pivots. About 47% can shut off water to unused areas, and 41% have end gun management. About 42% have new or better nozzles and 34% have low volume/pressure nozzles. About 26% are a variable rate distribution system.
 - The top factors that limit water conservation include sandy soils, vegetation, and old irrigation equipment.
- In the Legislature this year, there were proposed changes by the Minnesota Senate:
 - Transfer permits, but no new conditions or changes to the permits
 - Require economic analysis for any new restrictions
 - The DNR is required to limit public information only to factual responses to inquiries
 - Implement about 20 percent of median flow threshold statewide
- Proposed changes by the Minnesota House:
 - Require a public meeting for new permits of a certain size (about 75 to 100 per year)
 - Sustainability definition to include “replenish” standard
- The Governor proposed:
 - Expansion of Prohibition on Appropriating Water from Mt. Simon-Hinckley Aquifer
 - Prohibition on Bulk Transfer of water More Than 50 Miles

No questions.

Industry/Landowner Perspective, by Cindy Brown, [Chippewa Valley Bean](#) (WebEx 01:56:00)

- Both Jake Wildman, MAWQCP Certified farmer (Pope County), President of the [Irrigators Association of Minnesota](#) and Anna Bregier, [Prairie Farms](#) in Benton County, could not be here today because they are attending Jim Anderson (of Anderson Farms) funeral. He has been instrumental on irrigation in the Bonanza Valley, and has worked closely with the Irrigation Association of Minnesota. Brown is here because he would want her to talk about this topic.
- Brown is a kidney bean processor and irrigator at Chippewa Valley Bean. She grew up at a family farm, and learned the benefits of irrigation. They process and export kidney beans, and are probably one of the largest processors in the nation. They export 70% of the beans, with about 90% grown in Minnesota. Growers manage risk. Quality is extremely important. Irrigation evens out dry periods. The processors look at kidney beans on sandy soils because they can get on and off the land quick (especially at harvest time). The longer the beans are out on the field because the soil is too wet to harvest on, the more the bean deteriorates. If it loses its quality, it is not as acceptable in the canning process. Another aspect for a timely harvest is taking it at the right time to avoid cracks..
- Rotation of other specialty crops bring more value to the farmer. Farmers can plant a cover crop when the beans are harvested to avoid wind erosion and increase soil health.
- Farmers get a higher price for irrigated beans. Kidney beans produced with irrigation produce 22% more than those that don't. It equates to about \$40.4 billion dollars to Minnesota farmers.

Improving Residential [Irrigation Efficiency](#) in the Twin Cities, by Ali Elhassan, Manager-Water Supply Planning, Met Council Environmental Services, and Brian Davis, Sr. Engineer, Water Supply Planning, Met Council Environmental Services

- Turfgrass irrigation has increased in the metro area since the 1990s. It comprises 30 percent of residential water use, usually concentrated during the summer months. Suburban developments often include irrigation systems. Peer pressure to maintain a green lawn also contributes. Healthy turfgrass needs about an inch of water per week, but residents are applying more irrigation than one inch a week. Smart irrigation systems avoid waste.
- About 75% of Minnesota residents use groundwater as their main source of water. Increased lawn irrigation has long-term impacts on our aquifers and surface waters, especially during drought years. Population growth also adds to the challenge. Some wells are used just to handle seasonal increases in irrigation.
- In 2015, metro communities used the Master Water Supply Plan (MWSP) to promote water efficiency. The plan includes strategies to facilitate collaboration, support local planning and implementation, provide technical and financial support, conserve and reuse, as well as other investments. The desired outcomes included improved community and collaboration, improved planning and plan implementation, sustainable and cost-effective approaches, source waters protected, as well as water conservation.
- They have been working on a partnership with the University of Minnesota's Turfgrass Science Program, which determines which turfgrasses are best and how much water smart controllers can save, and provides education. The program simulates drought conditions, looks at mowing height, and experiments with smart controllers. They plan to exhibit at the Minnesota State Fair 2021, expand training at the Minnesota Arboretum, and work with the Carlson School of Business on a market plan. They have a mobile education trailer.
- The Water Efficiency Grant Program uses CWFs and is an EPA Water Sense Partner.
 - Grants to municipalities are around \$2,000 to \$50,000. The municipalities provide 25 percent of the total amount. Participating communities are municipal water suppliers in the seven-county metro area. Qualified activities for rebates include: irrigation controllers (smart controllers), irrigation spray sprinkler bodies, efficient toilets, irrigation system audits, as well as efficient clothes washers.
 - Freshwater is working with them and the Minnesota Water Steward program. They certify and support community leaders to prevent water pollution and educate community members to conserve and protect our waterways. There is coursework as well as a capstone project. They have been including water conservation information, which helps to place these plans into action. In 2020, there were eight new advisors were brought on board. This is another way to pass along this important water efficacy work.
 - Policy ideas can incorporate efficiency ideas in new developments, and provide incentives for irrigation and lawn care companies to adopt Minnesota suitable seed mixes, smart controllers, Water Sense labeled sprinkler heads.

Questions:

- Raj Rajan: What about rapid scale-up of entirely replacing turf grass with rain gardens and pollinator habitats? How effective has the Lawns to Legumes Program been in the metro area? What is the status of the Board of Water and Soil Resources (BWSR) funding of that program? *Answer:* I'm not familiar with the Lawns to Legumes program. *Response from Paul Gardner:* It is a very popular program, but the money to provide new funds are locked in the Environmental Finance bill at the moment.
- John Barten: Do municipalities encourage, discourage, or remain neutral on installing irrigation systems? Do they weigh in on that? *Answer:* In developing communities (i.e., Woodbury), it is the developer who is interested in installing irrigation systems. The City of Woodbury has established a new ordinance that requires developers that install irrigation system to install one that is an EPA Water Sense system.
 - *Comment from Raj Rajan:* The Policy Committee has talked about smart soft water systems, as opposed to generic timer-based ones. Perhaps we can promote smart irrigation controller options.

Adjournment (*WebEx 02:59:35*)

Policy Statement Draft

Minnesota Underground Utilities Mapping Project

June 2021

Policy Statement:

The Clean Water Council supports the efforts of the Minnesota Underground Utility Mapping Project Team (UUMPT) to reduce the risk to drinkable, fishable, and swimmable water,

The Council endorses efforts by the UUMPT to create an accurate understanding of Minnesota's underground utility infrastructure and encourages Minnesota's public and private sectors to support its mission through a timely release of necessary data.

Problem

Damage to Minnesota's underground utilities can disrupt critical water infrastructure (drinking water and wastewater) and contaminate groundwater and surface water.

Damage most often results from data that is incomplete, inaccurate, or only exists on paper. This limits the ability of public and private entities from sharing data, and ensuring its accuracy over time.

Examples of utilities that require accurate mapping include:

- drinking water supply pipes
- wastewater pipes
- stormwater pipes and stormwater storage
- petroleum pipelines
- hazardous materials pipelines, and
- abandoned infrastructure that could transport aquatic invasive species.

Much of this data is held by the private sector, and therefore is not in the public sector's possession.

Solution

Improving the accuracy of Minnesota's underground utility maps will reduce these risks. Gopher State One Call (GSOC) and the Minnesota Geospatial Advisory Council Emergency Preparedness Committee (EPC) have formed the UUMPT to address this issue.

The UUMPT works to improve locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross-community collaboration that develops best practices and promotes technology solutions.

The Council supports the efforts of the UUMPT to improve locate efficiencies and accuracy, reduce damage to the state's underground infrastructure, and improve operational and construction safety by leveraging current and emerging GIS technologies through cross community collaboration which develops best practices and promotes technology solutions.

The Council endorses efforts by the UUMPT to create an accurate understanding of Minnesota's underground utility infrastructure and encourages Minnesota's public and private sectors to support its mission through a timely release of necessary data.