SUBCOMMITTEE ON MINNESOTA WATER POLICY- STAKEHOLDER MEETING

Remote Information Meeting

JANUARY 13, 2022

9:30 AM

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

Jim Stark, Director
Subcommittee Support: Kathryn Ho

AGENDA

- Call to order/Approval of minutes from December 17
- Subcommittee legislative agenda--short presentations by invited stakeholders
- Discussion about next steps
- Testifiers
- Adjourn

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

SPEAKER INTRODUCTIONS

- **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)**
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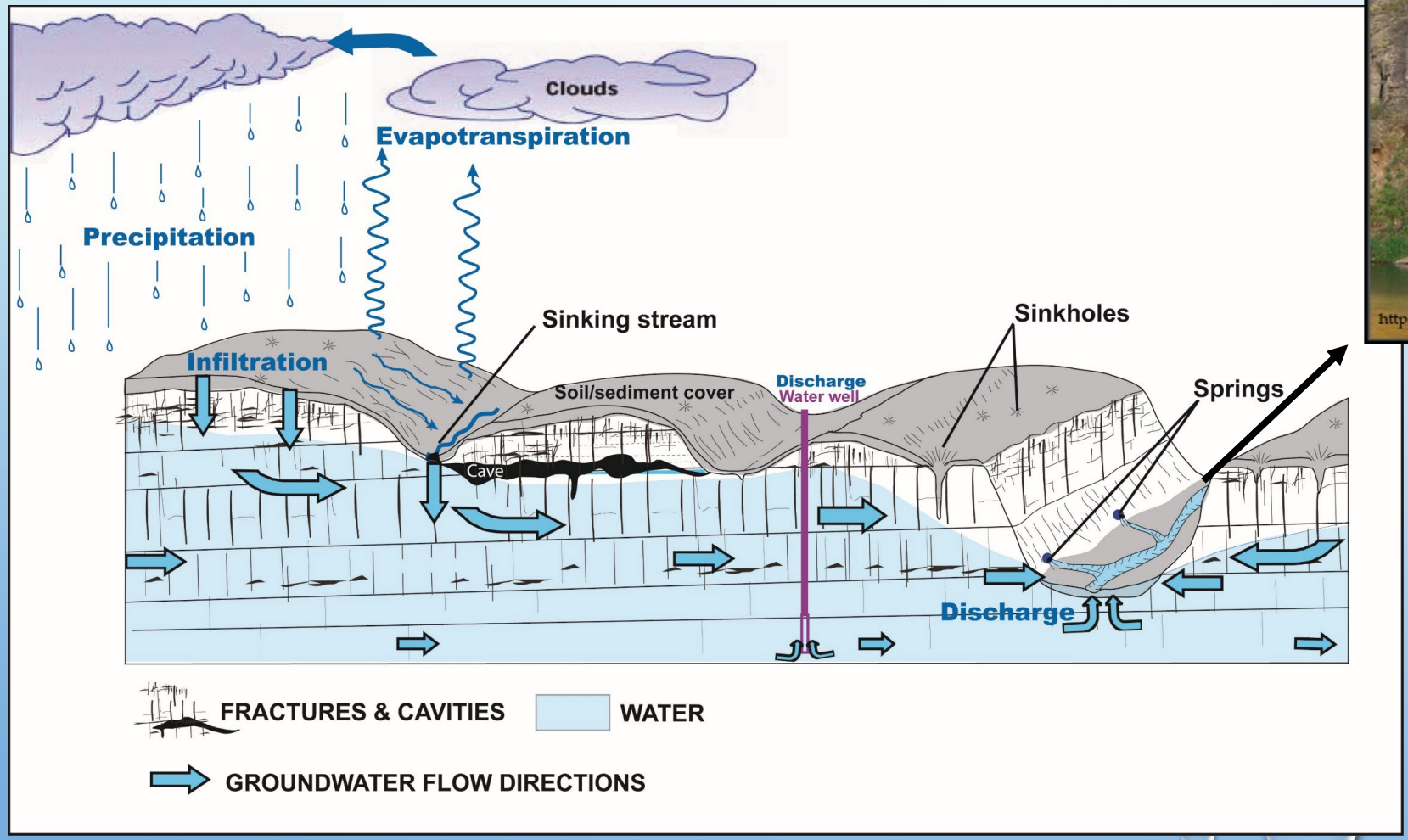
BILL DISCUSSION

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

Sustainable Drinking Water Pilot Program

The groundwater-surface water system

GROUNDWATER IS SURFACE WATER, SURFACE WATER IS GROUNDWATER

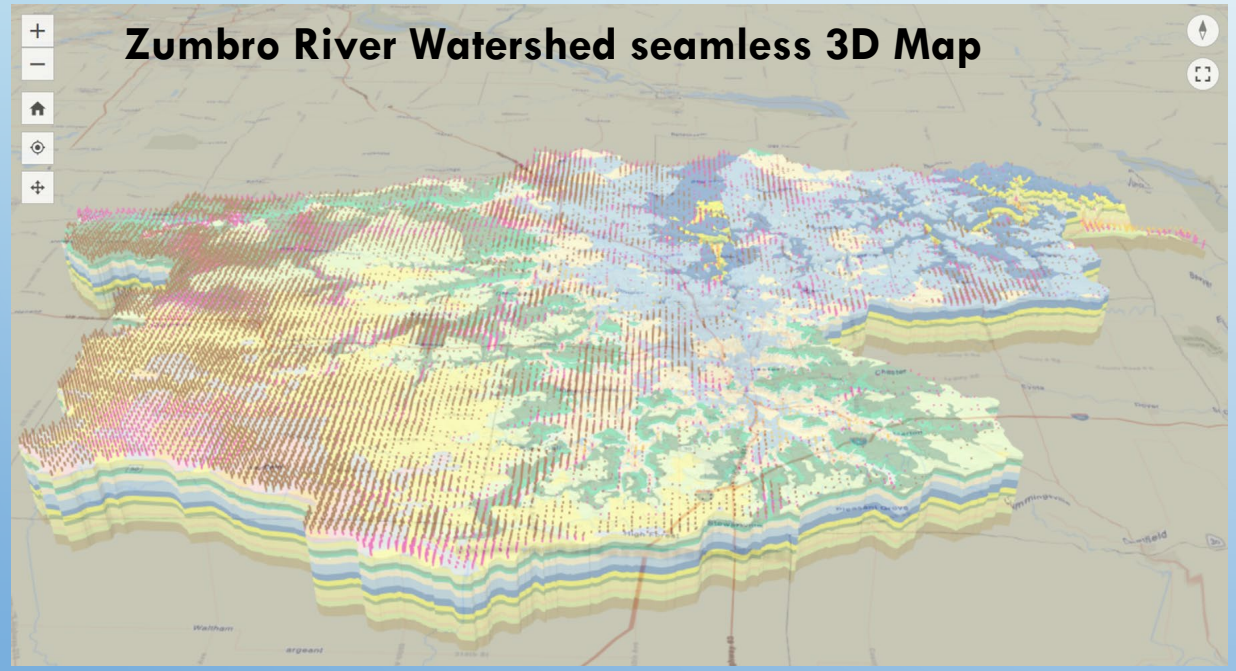


Stream baseflow
(groundwater component of streamflow)

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

With groundwater models across entire watersheds

Three requirements:
1) Seamless 3D map of aquifers across watershed
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

- **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 fun shall be used for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district.

BILL PRESENTATIONS

B3: Improving Water and Agriculture: Precision Agriculture

Dr. David Mulla

PRECISION AGRICULTURE

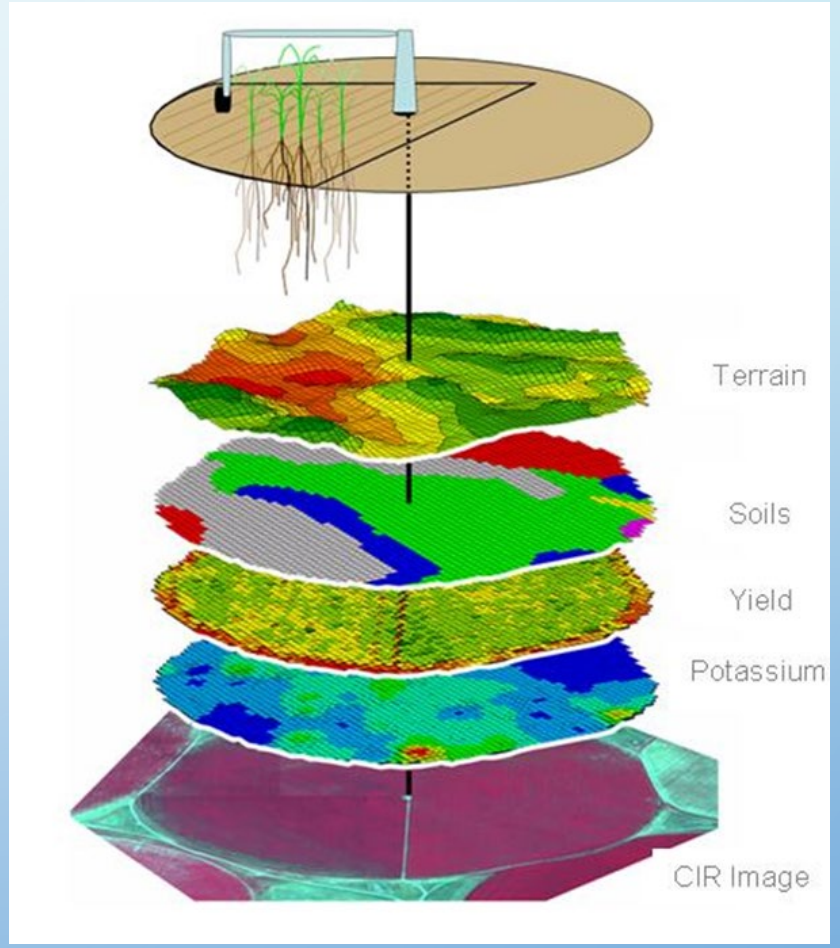
DAVID MULLA,

DIRECTOR PRECISION AG CENTER

UNIVERSITY OF MINNESOTA

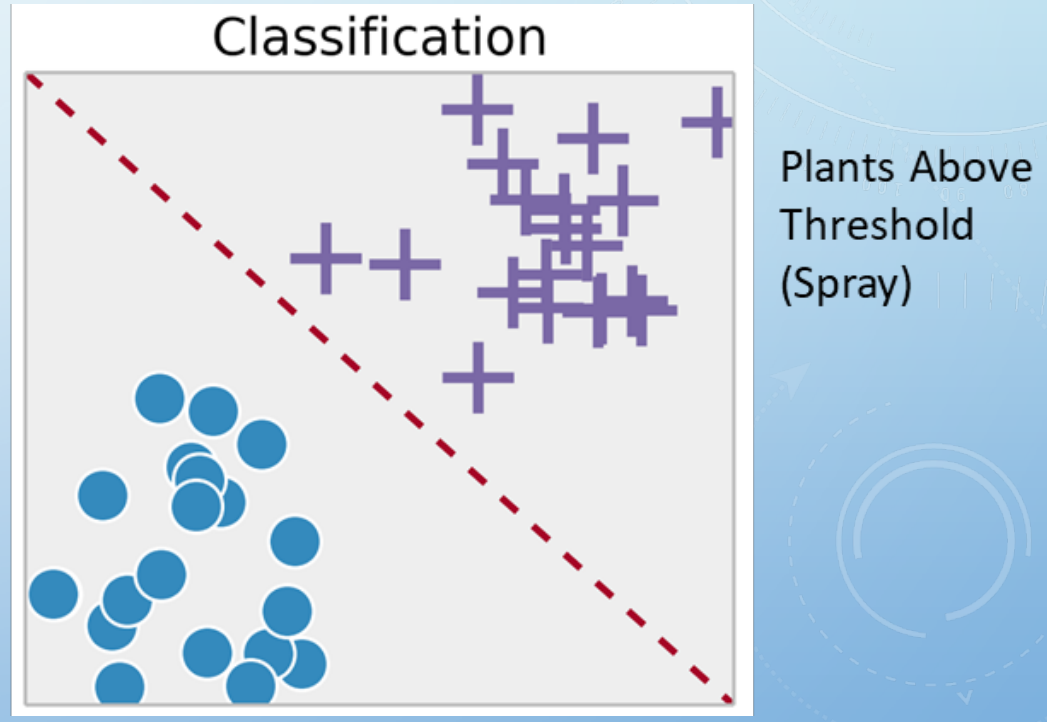
WHAT ARE PRECISION AGRICULTURE NEEDS?

- **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**



REMOTE SENSING COMBINED WITH MACHINE LEARNING IDENTIFIES SOYBEAN APHID INFESTATIONS

- DRONES CAN BE USED TO SCOUT ENTIRE FIELDS FOR SOYBEAN APHIDS
- FIELDS CAN BE SPRAYED BEFORE APHIDS CAUSE WIDESPREAD CROP DAMAGE



Benefits of Precision Agriculture

- Increased profitability and reduced crop loss for growers
- Increased efficiency of inputs (N fertilizer, pesticides, irrigation)
- Protection of surface and ground water quality
- Strong University – Industry and grower partnerships (Examples include SoilTeq, Farmer's Edge, Geosys, Sentera, Sentek, EarthScout, Aglytix, Land O'Lakes and CHS)
- Technology platforms to protect data privacy (GEMS)
- Job creation and workforce development

"Our relationship with Professors David Mulla, Carl Rosen, Fabian Fernandez, and Daniel Kaiser has and will continue to have a tangible impact both on technological development at Sentek as well as on end-user applications revolving around our products." Craig Poling, CTO Sentek

Funding for this initiative will lead to improved agronomic and environmental decision-making in precision agriculture

THANKS!

David Mulla
mulla003@umn.edu
(612) 625-6721

BILL PRESENTATIONS

Voluntary private well testing

Jeff Stoner. USGS Retired

Representing MNWOO

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)**

WELL-WATER TESTING TO MAKE DRINKING WATER SAFER FOR PRIVATE-WELL OWNERS

Educate private-well owners to become better stewards of their drinking water

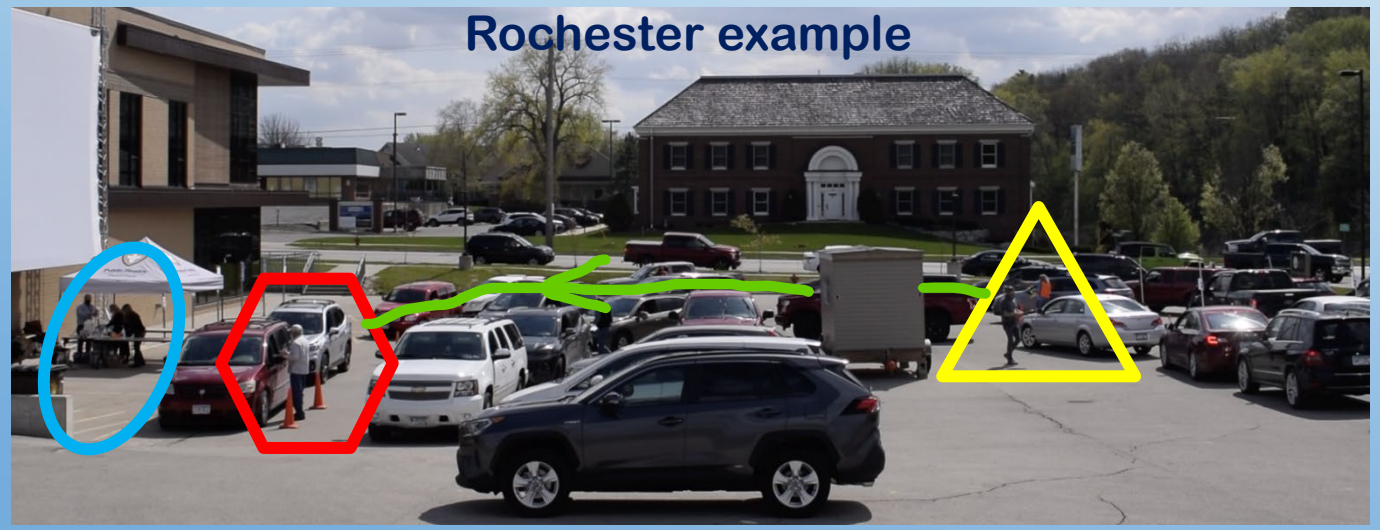
Expected Outcome: "Clean water at kitchen sink."

- **Integrate** social science, hydrogeology, and community engageme
- **Build collaborative partnerships,** UofMinn: (Extension, Health, Landscapes), MDH, MDNR, MPCA MDA, watershed districts, SWCD, Freshwater—master water stewards, Olmsted & Anoka county programs for GW awareness, and other community organizations
- **Develop flexible knowledge & solutions** for well owners

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



ASK: RESOURCES FOR 2-YEAR PILOT

(COORDINATOR + GRANTS TO NONPROFIT & WELL OWNERS)

- Pilot for ~24 testing clinics statewide covering:
  - Groundwater provinces
  - Geological and Human-caused contaminants
  - Variety of well owner socioeconomic conditions/knowledge
- Estimated cost $795,000

Groundwater Provinces

--SAFE DRINKING WATER AT THE KITCHEN SINK--

BILL PRESENTATION

B7: Water safety plans for cities– a pilot

Jeff Broberg

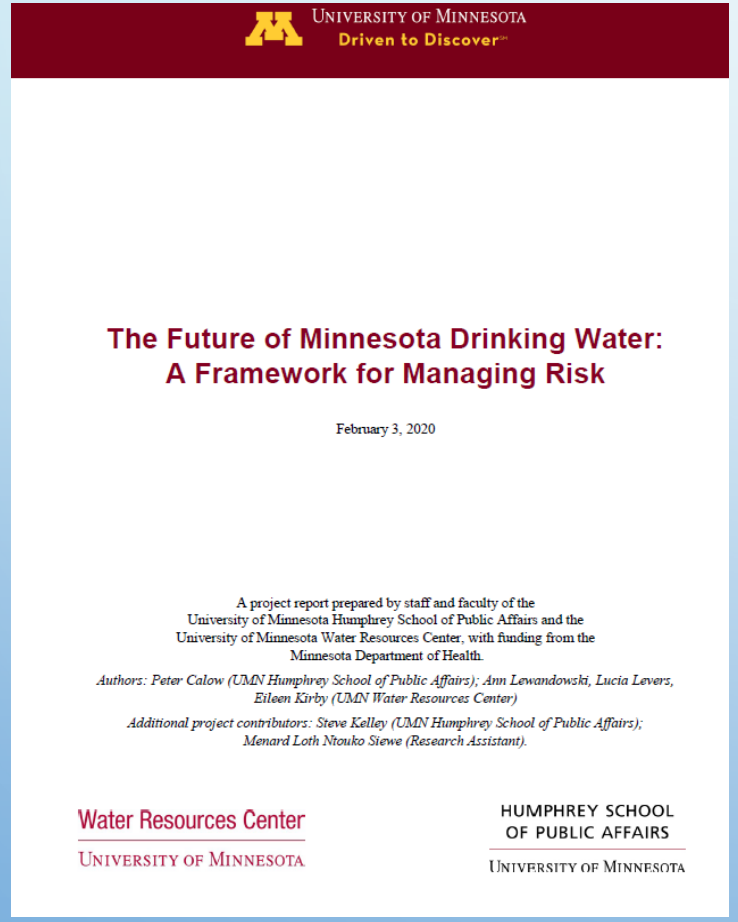
WE SUPPORT PILOT WATER SAFETY PLANS

JANUARY 12, 2021

JEFFREY S. BROBERG, LPG

minnesota
well owners organization

WATER SAFETY PLANS



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

MN DRINKING WATER MANAGEMENT

WHAT'S CRITICAL

Effective Public Engagement

Data

Water supply systems

Water Source

Pollution Sensitivity

- Probability
- Consequences

Effective risk assessment

Resources

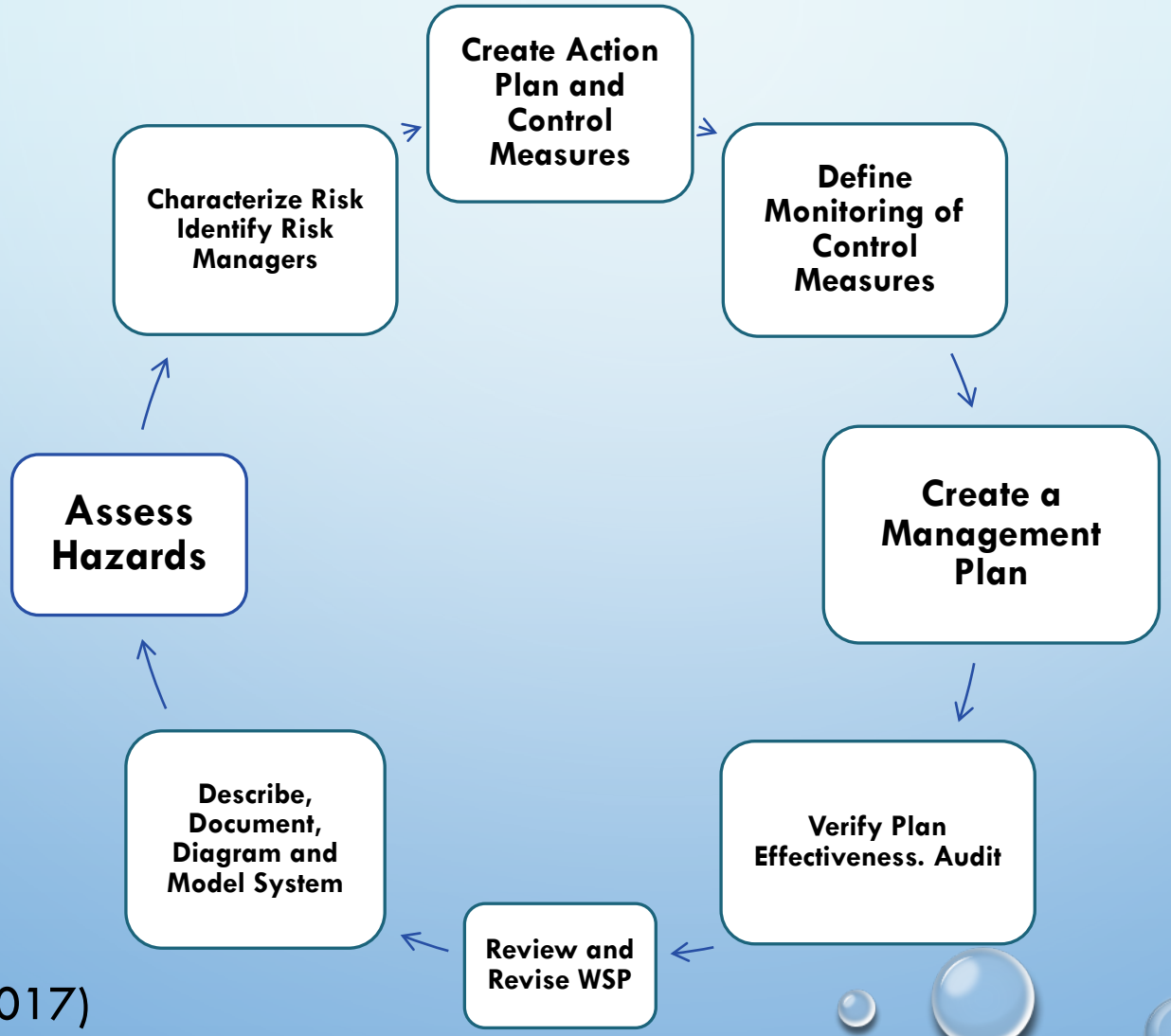
WHAT'S MISSING

- EFFECTIVE PUBLIC ENGAGEMENT
  - UNDERSTANDABLE DATA
  - PRACTICAL ADVICE
    - REALISTIC COSTS
    - HEALTH AND SAFETY BENEFITS
  - WORKABLE ACTION PLANS FOR PROTECTION, ENHANCEMENT AND RESTORATION OF DRINKING WATER RESOURCES
- RESOURCES

Public communication about water safety and risk management must be understandable

- If we pay attention first to the human dimensions of drinking water safety, we need to communicate in different ways that are understandable at a level people understand, and with instructions of practical measures that can make a difference.

Water Safety Plan (WSP) Development Process



Adopted from WHO (2017)

Groundwater risks scale matters

- Groundwater contamination occurs when contaminants and man-made products such as gasoline, oil, road salts, lead, fertilizers, pesticides and industrial chemicals get into the groundwater and cause it to become unsafe and unfit for human use.

- **Prevent, control, mitigate, and eliminate all the risk factors**

Safe water at its source does not guarantee safe water at the tap

- TAP AND HOUSEHOLD PLUMBING
- DISTRIBUTION
- TREATMENT
- WELLS
- STORAGE
- SOURCE
- SENSITIVE RECHARGE AREAS

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**
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- **B12: Encourage groundwater recharge where needed, with restrictions**
- **B 13: Keeping water on the land, water retention**

SOIL HEALTH ACTION PLAN

- Soil health is good for agriculture and water– a state-wide, soil-health plan is needed
- Bill provides an allocation for a pilot to develop an implementation plan
- Proposes a cooperative effort involving the UM, BWS, and the MDA
- Would include research, outreach and implementation to improve soil
- Focus would be on tillage, irrigation and fertilizer management
- UM Office of Soil Health would collaborate with agencies, businesses, and producers

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IDENTIFYING VULNERABLE AQUIFERS

- **Bill: A pilot effort to identify shallow aquifers that are most vulnerable to contamination**
- **Particularly important to protect private wells**
- **MGS: Coordinate state and local agencies in identifying priority aquifers as well as existing monitoring networks and needs to create a multi-agency well network**
- **In many areas these well networks exist-- coordination is needed**
- **In some areas, well network expansion may be needed**
- **Bill would produce a implementation plan**

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RE-ACTIVATION OF THE WATER SUPPLY AND WASTEWATER ADVISORY COUNCIL

- The Council was re-created in 1995 (no rule-making authority)
- Legislative evaluation in 2013 was positive with a recommendation for continuation
- However, the sunset was not removed in 2019
- Reestablishment would provide legislative input about water systems, waste-water treatment, and operator education and certification
- Supported by Small cities
- Council would be advisory to MDH and the MPCA

G3 RE-ACTIVATION OF THE LEGISLATIVE WATER COMMISSION

- Water issues are important, complex, and costly--water policy should be undertaken thoughtfully
- The 12 member, bi-cameral and bipartisan commission, was created by the 1989 Groundwater Protection Act. I brings value to the Legislature
- Provides a venue to discuss technical issues and creates a public forum-- Develops water expertise within the Legislature
- Sunset clause was not removed in 2019– replaced as the LCC Subcommittee on Water Policy. As best I can determine this was an oversight
- If the work of the Commission is important, it should exist for more than 2 years at a time
- This would allow for Legislator continuity and interest from qualified protentional staff
- The bill would re-establish the LWC for a five -year period

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PROTECTING LAKES AND STREAMS IN THE UPPER MISSISSIPPI

- Focus on protection, not restoration, of streams and lakes of the Upper Mississippi
- Protection for 75 percent of a watershed is sufficient– we are almost there.
- Bill would evaluate progress toward that goal and provide an example of the value of environmental programs
- Provide a poster child for the value of collective programs including a compilation of the land preserved lands in the watershed
- Increase funding for existing private working lands to reach the protection goal based on Nature Conservancy analysis

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ADDRESSING ENVIRONMENTAL JUSTICE AND WATER AND LEAD IN DRINKING WATER

- All Drinking water needs to be safe
- Water testing for lead is needed from sources that are not tested
- This would involve voluntary testing of private wells, day-care facilities and rental properties
- Notification of results

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B4: RIPARIAN TAX CREDIT FOR BUFFER LANDS

- Buffer law provided a major step in improving our waters
- Problem: lost revenue associated with land taken out of production--trade groups support a payment option for lost lands
- One option includes a tax credit or subsidy for the loss of tillable lands
- Involves a real-estate tax change

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POLICY FOR GW RECHARGE

- Enhanced recharge is needed where groundwater levels are in decline
- It is a common common practice in many states
- Legislative has funded a UM/Freshwater feasibility study
- Policy is needed to allow/encourage recharge where needed
- Provides funds for DNR aquifer-property database
- MDH funds to develop a decision-support system to evaluate aquifer storage and recovery
- MDH directed to seek EPA for primacy over Class V wells

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WATER RETENTION: KEEPING WATER ON THE LAND

- Bill provides funds to BWSR to increase water storage, in strategic locations, across the state through the development of an implementation plan
- Builds on legislation from las session
- Monies to existing and new projects that enhance flood control in a manner that comprehensively addresses the state's water storage needs and improves water quality
- Provides policy on priority areas

SUMMARY

- The subcommittee endorsed these bills by consensus in November
- The bills are prepared and have jackets
- You interest in authorship and suppor is needed– an email will ask your input. Several members have responded. Please do so if you have not
- Summary letter to leadership, summarizing your support for these bills, is ready for your comment. It will be sent you soon for your comments
- Thanks for your support!
- Motion to adjourn

THANKS

Adjourn