



Legislative Water Commission

April 23, 2018

Co-chairs: Senator Wiger

Representative Torkelson

Jim Stark, Director

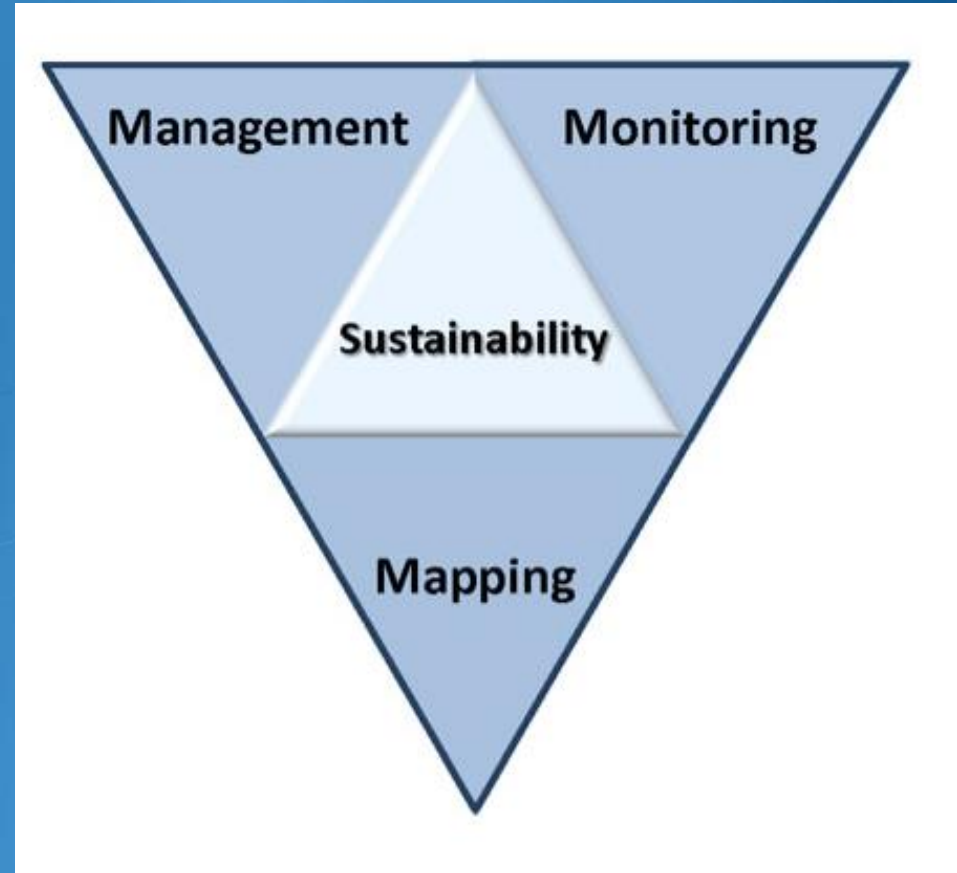
Straight River, Becker County

Agenda

- **Approve minutes -- March 26**
- **Geologic atlas program**
- **Clean Water Fund: performance report**
- **2018 LWC recommendations**
- **2019 LWC process**
- **Summer tour**
- **Updates on water legislation**
- **Next meetings: June 19**

Issue Presentation: Geologic Atlas Program

- Dale Setterholm—
Minnesota
Geological Survey
- Paul Putzier— DNR
- Ray Wuolo- Barr
Engineering



County Geologic Atlas Program

Dale Setterholm
Minnesota Geological Survey
University of Minnesota



Foundational information essential to water management:

Geology determines:

- Where can we obtain water? Aquifer depths and boundaries
- Connections from the land surface to aquifers (recharge)
- Connections from aquifers to the land surface (discharge) or surface water bodies
- Who shares an aquifer (database of wells)?
- Composition and age of ground water in aquifer systems



Information used in water management at all levels:

To support:

- water appropriation decisions (DNR)
- wellhead protection plans and well construction practices (MDH)
- meaningful monitoring (multiple parties)
- spill response and design of remediation (MPCA)
- groundwater models (Met Council, DNR, others)
- permit decisions (including local government)
- land use planning
- mineral resource management



Information used by cities, counties, businesses, and citizens

- What aquifers are available to me, how deep?
- Where is our water most vulnerable?
- **User's Guide to Geologic Atlases-** non-technical explanation especially helpful to decision-makers
- Maps and databases available in digital or paper formats
- Information that does not lose value over time
- A framework for more detailed investigations

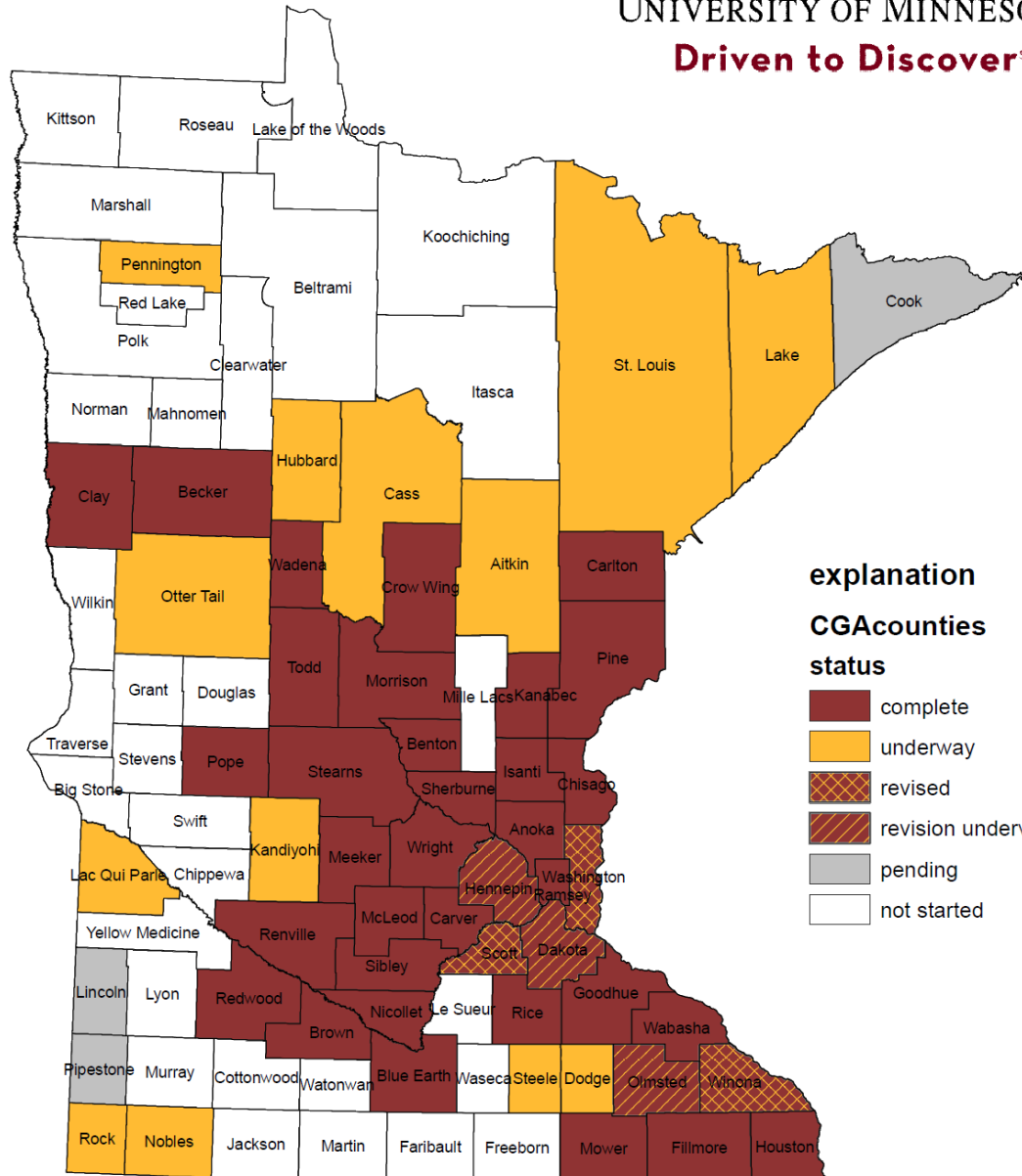


Status of County Geologic Atlas Part A February 2018



UNIVERSITY OF MINNESOTA

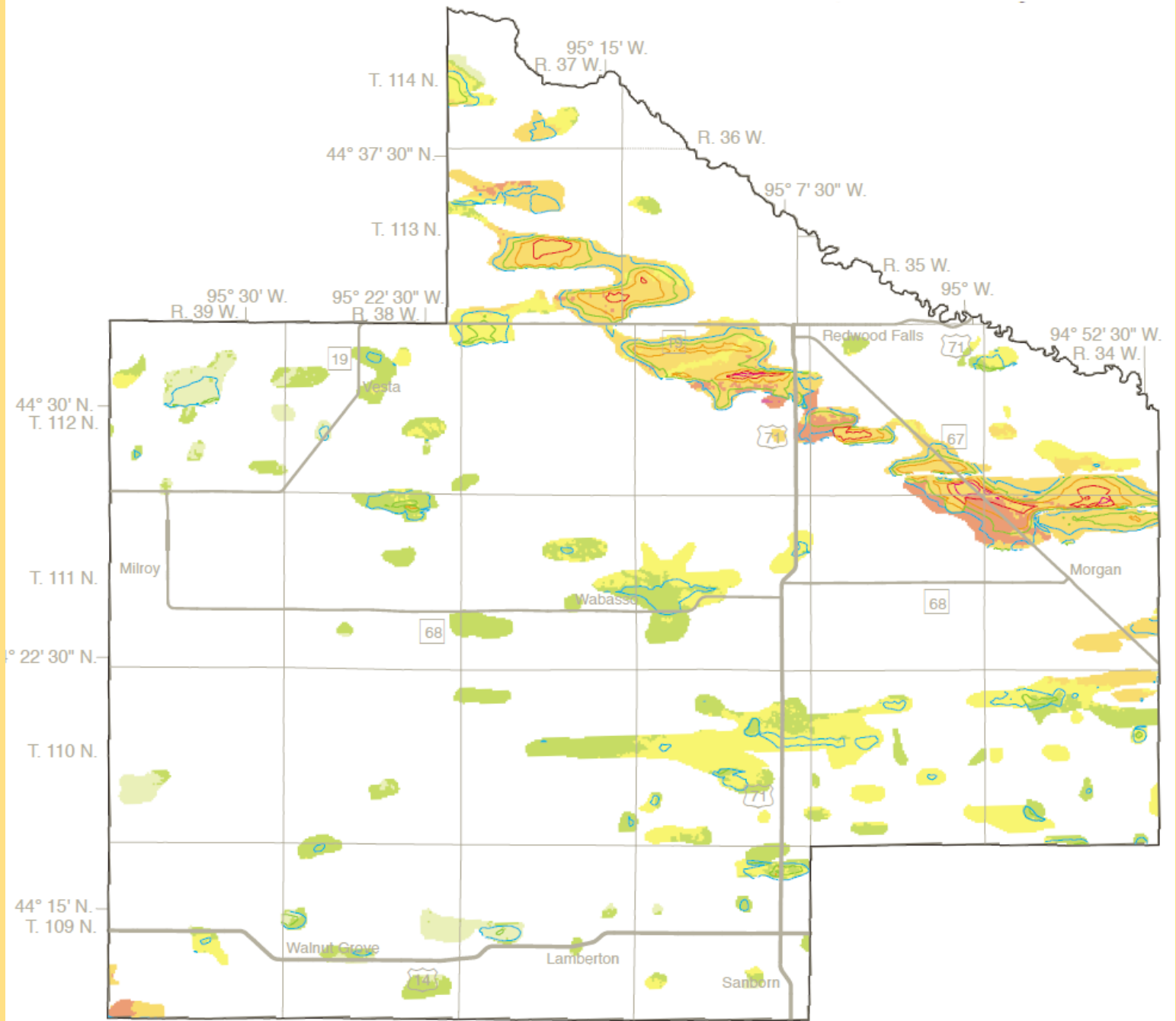
Driven to DiscoverSM

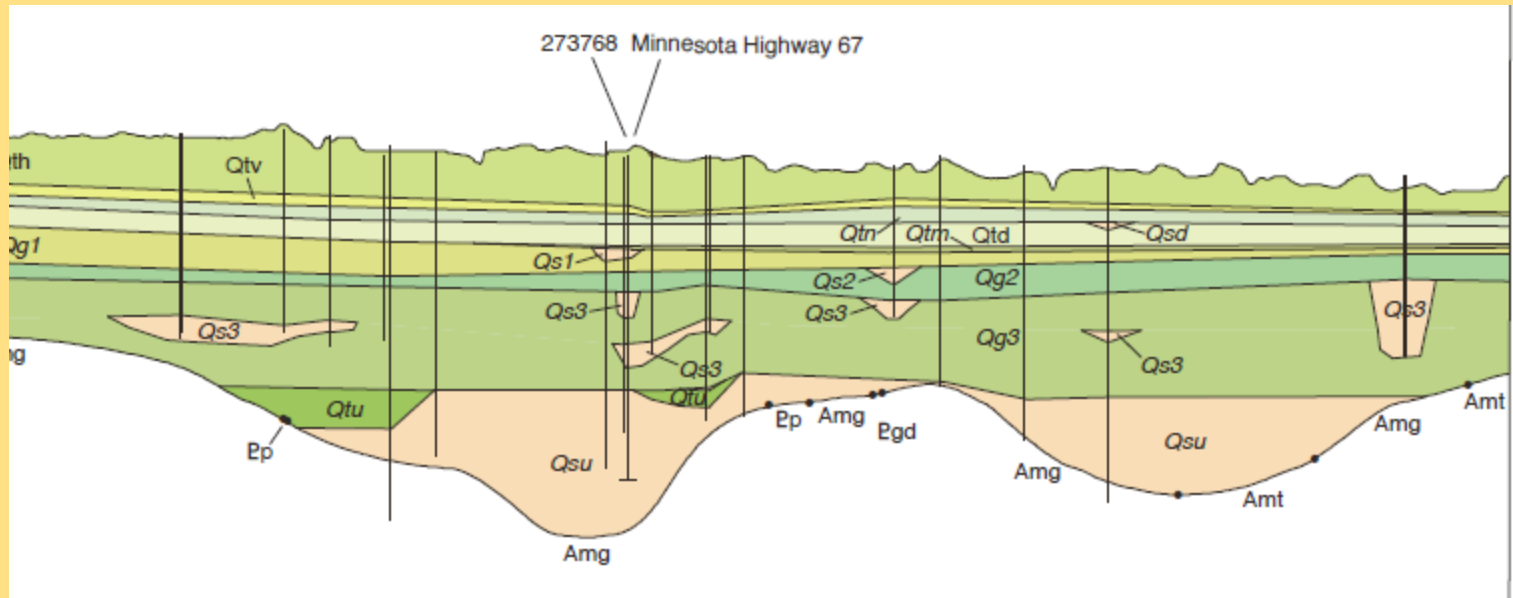


Program Status

- Striving for 4 or 5 completed counties per year (each project takes 3 to 4 years)
- Part A requires about \$2.1 million/year
- MGS relies on funding from LCCMR, CWF, DNR contract, federal cost-sharing, and in-kind service from counties.
- Projected to finish statewide coverage about 2026.









**DEPARTMENT OF
NATURAL RESOURCES**

April 2018

County Geologic Atlas Program



Who Uses the County Geologic Atlas?

- **Private Citizens**
- **Business & Industry**
- **Agriculture**
- **Environmental Consultants**
- **Counties**
 - County Planning Commission/Planning Staff, Water Plan Task Force, Environmental Services Department staff, Public Works, County Engineer
- **Soil Water Conservation District (SWCD) & County Conservation Districts (CD)**
 - SWCD Managers, Technical Service staff, Watershed Project Managers
- **Cities**
 - Planning Commission/Planning Staff, City Engineering Staff, Public Works Staff – Waterworks
- **Townships**
 - Township Board of Supervisors, Township Planning Commission
- **State & Federal Agencies**
 - MPCA, MNDOT, MDA, MDH, BWSR, USGS

How are the County Geologic Atlases Being Used?

County Projects



Jerry Spetzman, Administrator Chisago Lakes-Lake Improvement District, Chisago County

“Chisago County uses the County Atlas to help inform land use policy decisions. Specific examples include: the Pollution Sensitivity of Near-Surface Materials map was used to help determine the location of a natural burial cemetery; the Bedrock Geology map was used to determine if sufficient quantities of ground water was available to cool a natural gas power plant; the sand distribution model was used to inform frac sand mining policy. The maps (in the Atlas) provide an abundance of useful information. The map layers have been added to the Chisago County website as part of the interactive GIS map and are available for public use.”



Geothermal & Agricultural Projects

Rob Vix, Drilling Manager, Traut Companies, Inc.

“For agriculture projects the atlas helps when looking for potential high capacity wells or difficult sites by giving us some ideas of how much unconsolidated geology is available. I use digital copies of the county atlas on a regular basis. The county atlas maps provides some idea of how feasible a geothermal project is.

How are the County Geologic Atlases Being Used?

Consulting Hydrogeologist



Kristi Anderson, Hydrogeologist, Northwest AqwaTek Solutions

“The majority of what I do is working with the agricultural community on water appropriation permits for crop irrigation systems; which are critical to successful farming in Minnesota. I typically look to the County Geologic Atlas (CGA)....as the starting point in my work.”



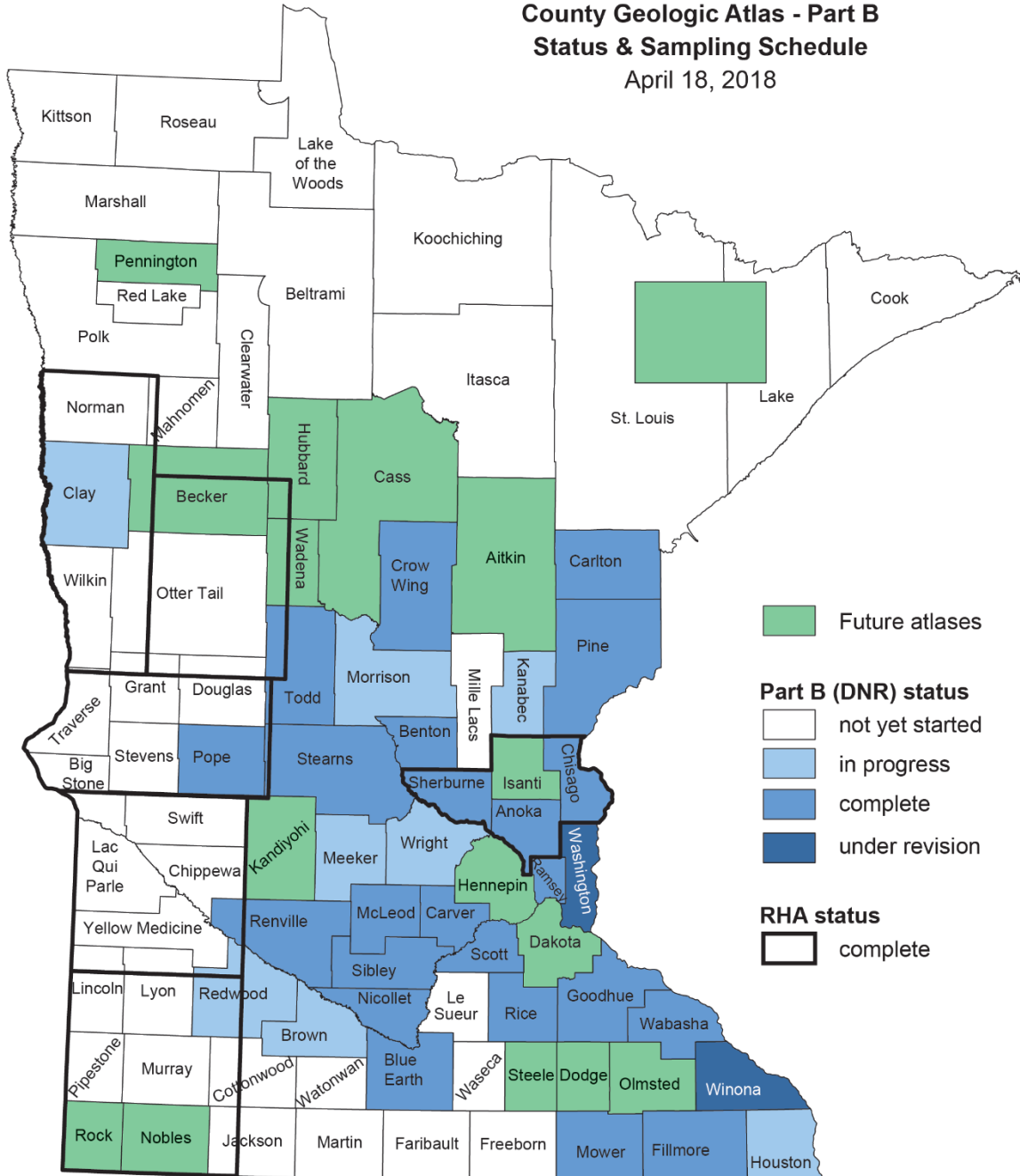
County Projects

Amanda Guertin, Benton SWCD Water Plan Technician, Benton County.

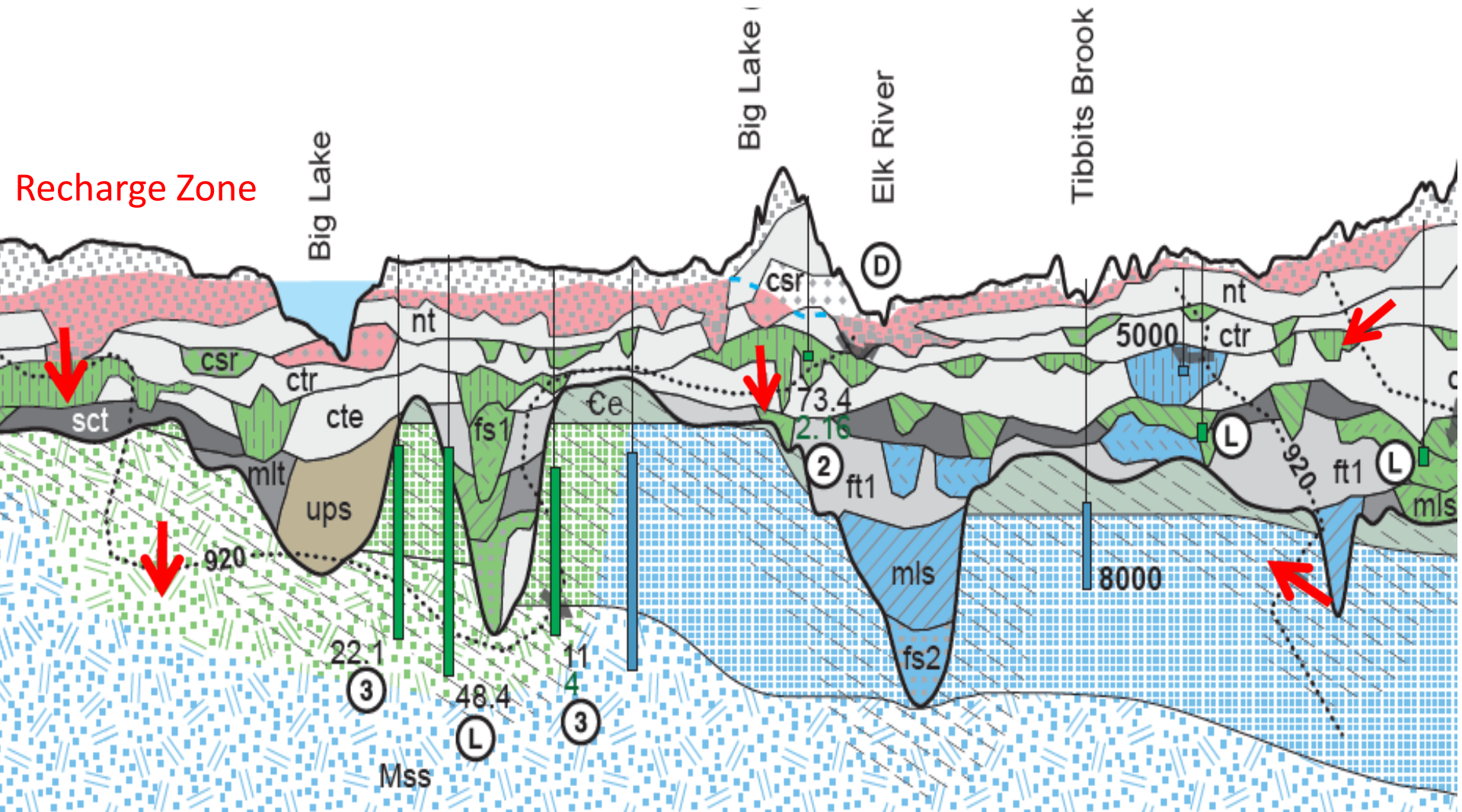
“I have been using the Atlas pretty frequently. After the Atlas was released we created a **Sensitive Areas Management Plan (SAMP)** to identify sensitive areas of the County that should be protected from development or disturbance due to critical, vulnerable, or rare water resources. The SAMP overlays the County Atlas data ... to create a map showing the degree of sensitivity throughout the County. Our office uses this plan, along with the Water Plan extensively to guide our focus for project implementation and the County Department of Development also uses the plans regularly.”

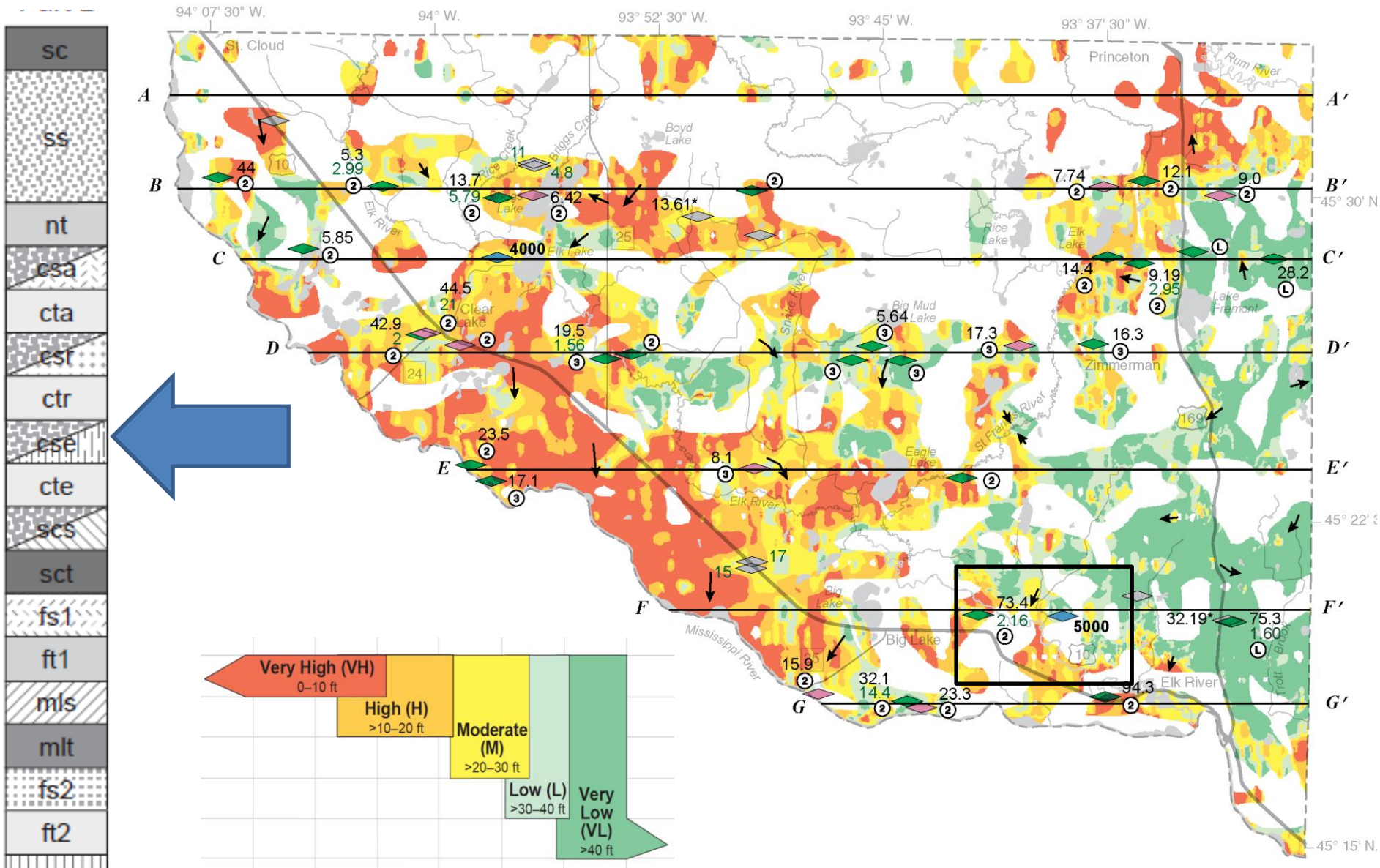
County Geologic Atlas - Part B Status & Sampling Schedule

April 18, 2018



Hydrogeologic Cross-Section

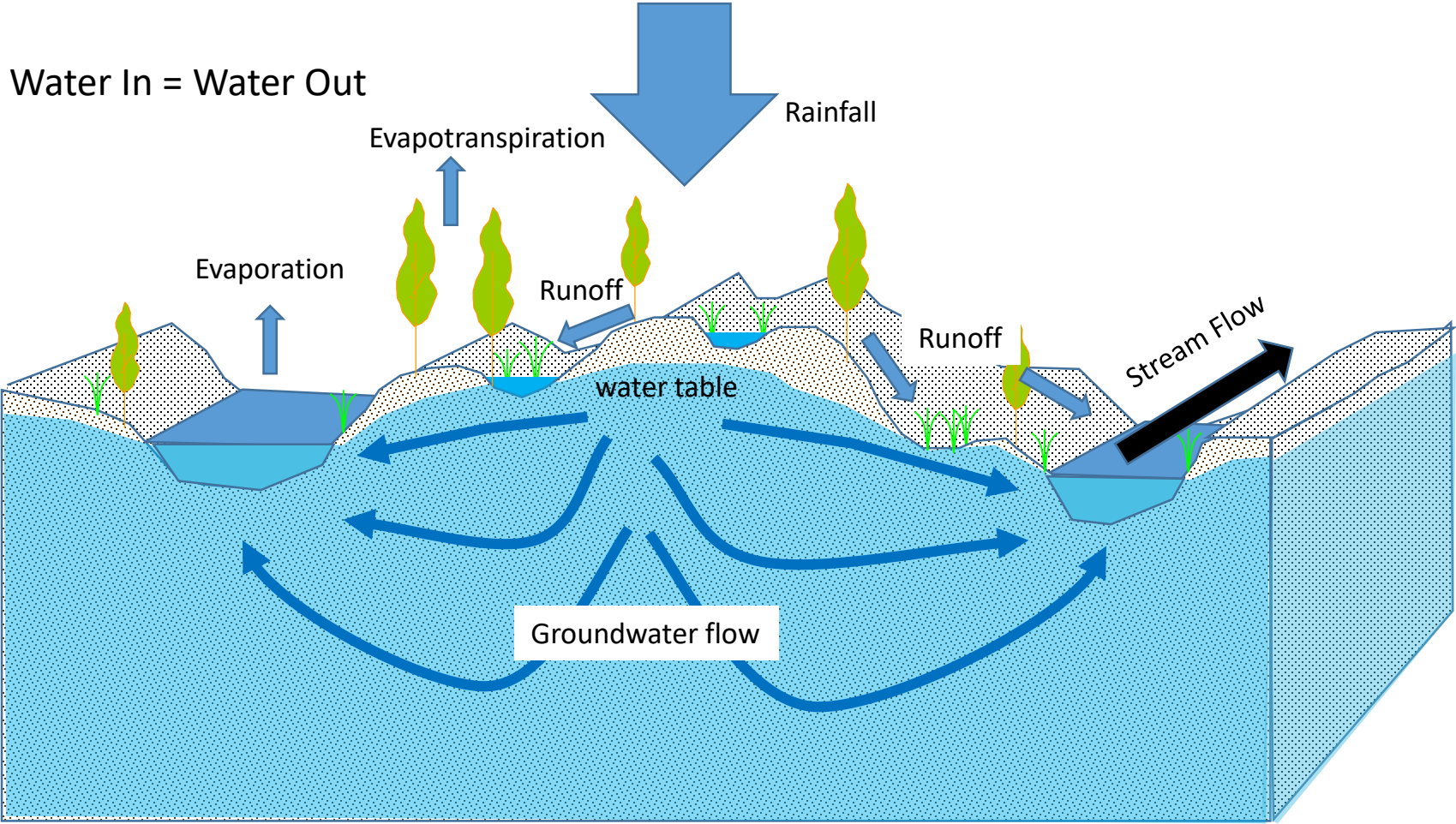




Pollution Sensitivity of the cse aquifer

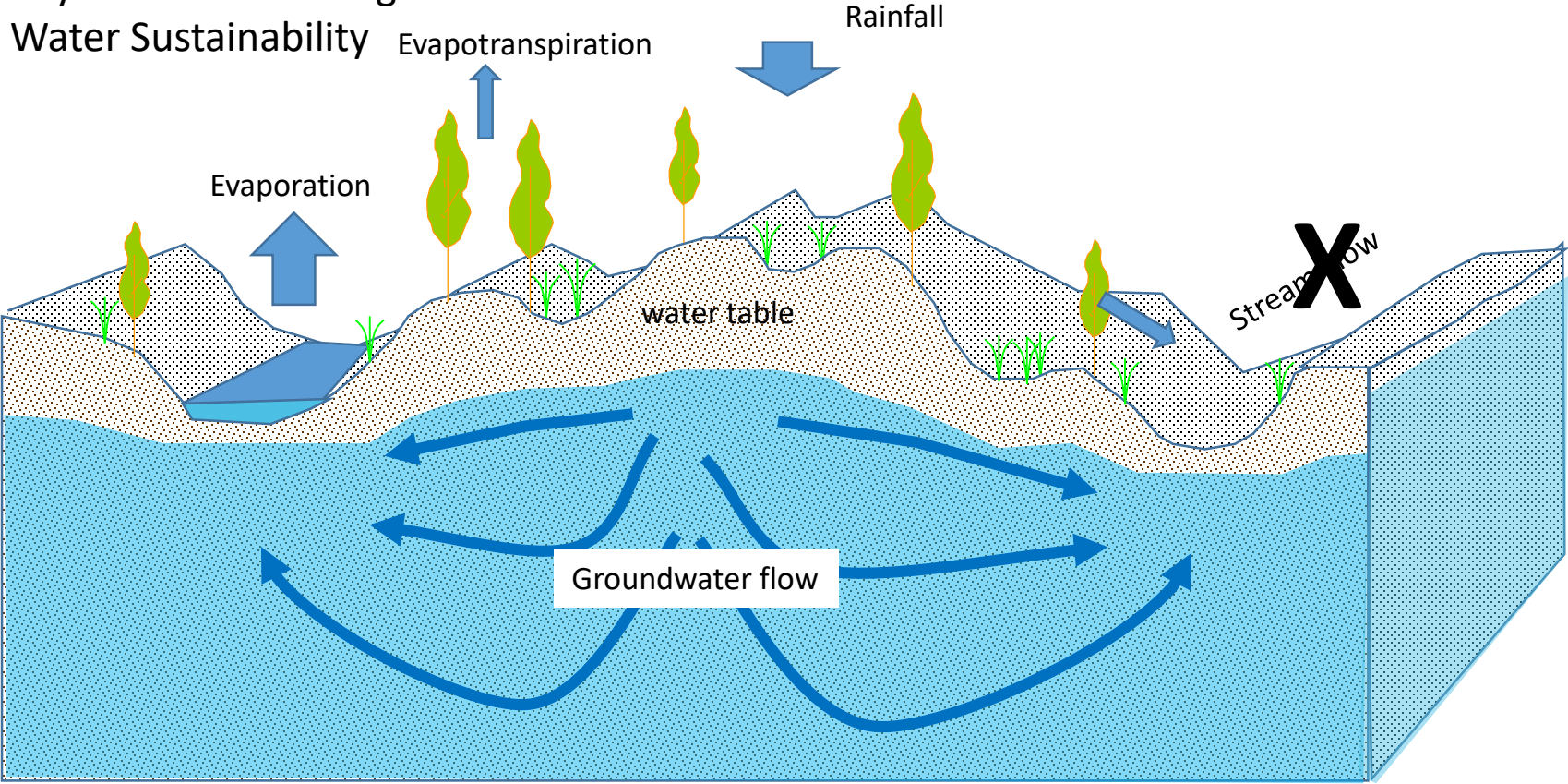
Water Balance

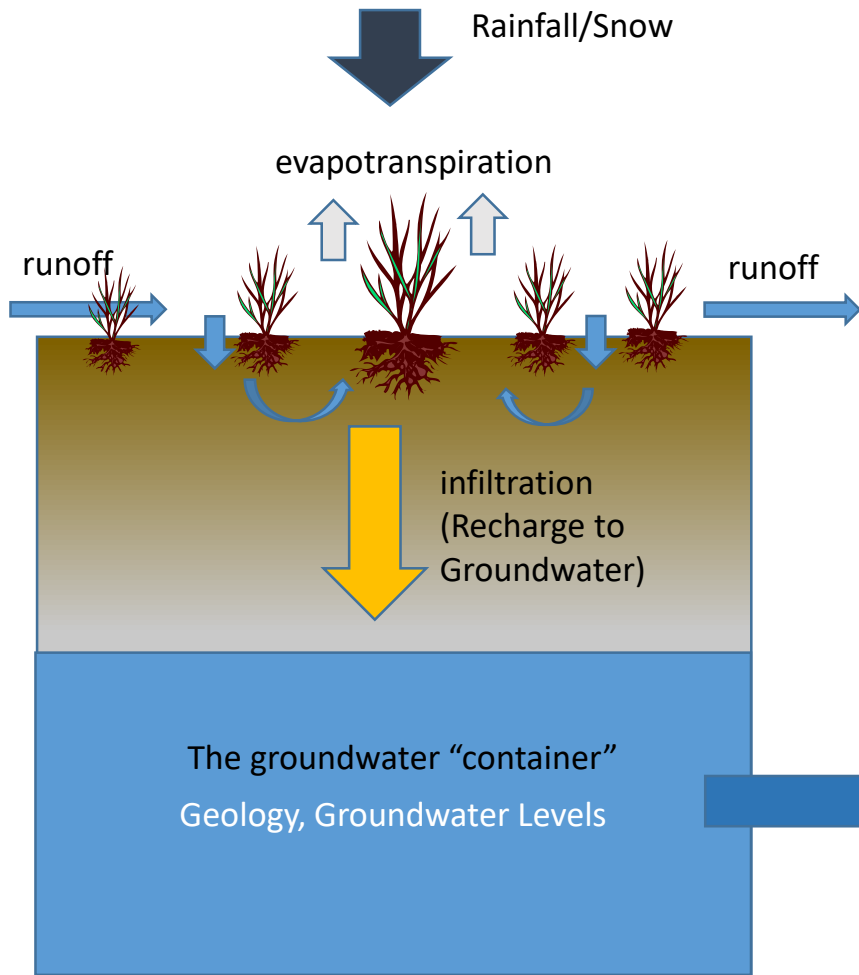
Water In = Water Out



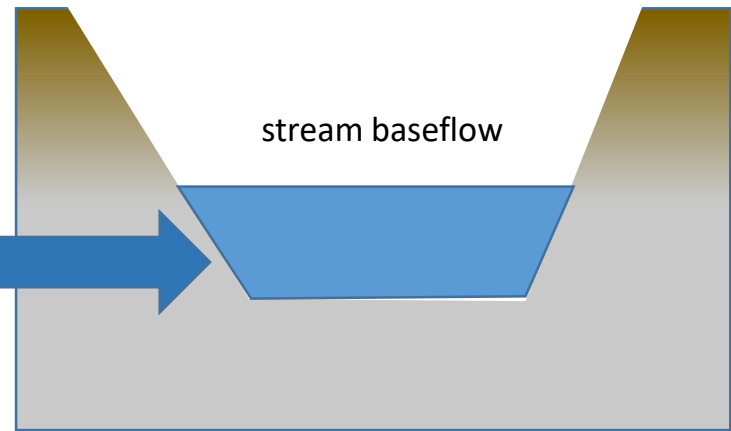
Water Balance

Key to Understanding Water Sustainability





Geology is important BUT it only one part of the puzzle



Clean Water Fund Performance



Mississippi River at Clearwater, MN (September 2012)

CWF FY18-19-- Funding

- **Implementation: \$105 M**
- **Planning/Tech Assist. \$67 M**
- **Monitoring/Mapping/Data: \$41 M**
- **Research/Evaluation \$8 M**
- **Total: \$221 M/biennium**
- **Emphasis on impaired water**
- **Entire state assessed**
- **Focus on local implementation**

CWF Goals and Expectations - 2034

- **Lake Quality: + 7-8%**
- **Acceptable Lake Tropic Status: from 62% to 70%**
- **Rivers: Fish IBI: from 60% to 67%**
- **Wells-arsenic standard: (reduce by 50%)**
- **Wells: nitrate standard (reduce by 20 %)**
- **GW declines (less than 10% declining)**

Progress and Citizen Expectations

- Improvements seem small ?
- Lag-time
- External drivers: (land use, climate, economy, trade, population)
- 2034 is coming/Citizen expectations
- Can outcomes be improved?
- Can LWC support additional change?



Minnesota's Water Quality Improvement Goal

#25by25MN

Katie Pratt
Director of Communications and Public Engagement
katie.pratt@state.mn.us

Citizens Said:

- + Education and engagement
- + Water retention
- + More GOV/public involvement
- + Local planning
- Focus on drinking water
- Reduce salt
- Inadequate septic systems
- Focus funding
- Focus on incentives

2019 Focus for the LWC Recommendations-2018



From a sustainability perspective, a key point is that decisions today may not be fully realized for many years

LWC Legislative Recommendations 2018

- Alternatives for WWTPs
- Peer review of waste-water standards
- Promote WWTP efficiency/alternatives
- PFA Bonding request \$167M

Agenda: Discussion--2019 LWC Process



2019 LWC Recommendation Discussion

- **Water trading- Storm water for wastewater**
- **Water for the future**
- **Water retention**
- **Private wells**
- **Public drinking water**
- **Evaluate past BMPs**
- **Evaluate water management**
- **Many more.....**



Schedule 2019?

- **Issues with narratives: April**
- **LWC Consensus--top 3: after session**
(short and long term issues)
- **Expert input: summer**
- **Recommendation by issue: Fall**
- **Recommendation consensus: Fall**
- **Document to support legislation:**
(December)

Discussion: LWC summer issue tour

- One day?
- Select an issue:
 - * Water retention/infiltration
 - * Lakes with problems
 - * Drinking water
 - * Groundwater/surface water
 - * Others?

Poll LAs for possible dates

Watch for email



**Updates on Water Legislation
Announcements:
Water Day at the Capitol**

Thanks

The well was dry beside the door,
And so we went with pail and can
Across the fields behind the house
To seek the brook if it still ran.

“Going for Water” -- Robert Frost

