

Weekly LWC Update 4-14-17

ERRORS? OMISSIONS? If found, please notify barb.huberty@lcc.leg.mn.

Interested reader: each week, I gather general information for Legislative Water Commission members to help keep them apprised about water issues in Minnesota. This update contains a roundup of easily attainable MN water news, as well as articles from beyond MN that may inform member thinking. It also includes summaries of meetings I have monitored and reports I have read, as well as information about upcoming events. During the Legislative Session, updates on water-related legislation and committee activities are added. Any errors or omissions are inadvertent.

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LEGISLATURE

To accommodate Passover and Easter, no official legislative business has been conducted since April 9th.

MN NEWS

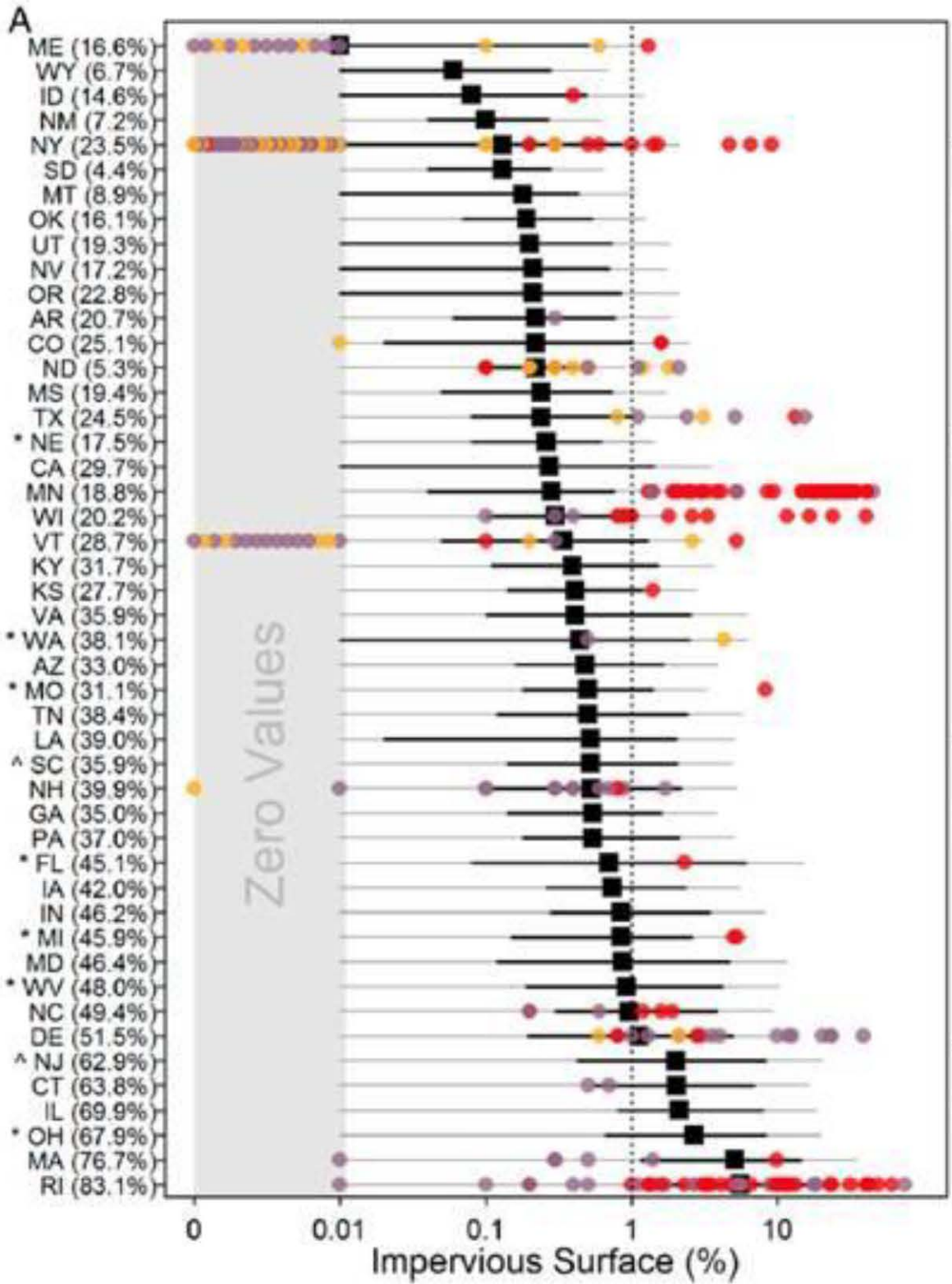
WATER ACTIONS

- Barn: [NACD Asks Congress to Reject Proposed Slashing of 319 Grants](#)
- St Peter Herald: [Make this your Year of Water Action — volunteer now](#); Worthington Daily Globe: [Volunteers needed for citizen water monitoring program](#)
- MEP: [Voices from across Minnesota call on Legislature to protect water, end attempts to roll back environment protection](#)
- Izaak Walton League of America: [Stream Selfie](#); snap a photo of a stream that's important to you, answer a few key questions, and share your picture
- MPCA: [Open for comment: water quality reports for the Pine River Watershed](#)
- Minnesota Stormwater Research Council: [Request for Research Proposals 2017](#)
- Pioneer Press: [Street sweeping begins Monday; adopt a drain](#)

SURFACE WATER/STORMWATER

- BWSR: [Local Road Wetland Replacement Program 2017 Request for Proposals For Purchase of Wetland Replacement Credits](#)
- Fox 21: [Mercury In Our Water](#)
- Strib: [White Bear Lake ruling could affect scores of lakes in Minnesota](#); White Bear Press: [It's a wrap; trial concludes for lake level lawsuit](#)
- MPR: [Moving water to White Bear Lake could cost as much as \\$48 million](#); Pioneer Press: [Refill White Bear Lake by pumping from Vadnais? Well, you could, but ...](#); WCCO: [Plan For Pipeline To Keep White Bear Lake Water Levels High](#); White Bear Press: [Pipeline: Vadnais Lake might share water with White Bear Lake](#)
- Strib: [Rising salt levels threaten Twin Cities lakes by 2050](#); MPR: [Study finds North American lakes at risk of rising salt levels](#); The Washington Post: [Salt from icy roads is contaminating North America's](#)

lakes; Pioneer Press: [A major new study has found that road salt is hurting our waters](#); Proceedings of the National Academy of Sciences: [Salting our freshwater lakes](#); see how MN compares:



GREAT LAKES

- Cooperative Institute for Limnology and Ecosystem Research: [Lake Superior-A Warming Ecosystem](#) [57 min]; Lake Superior is one of the fastest warming lakes on the planet (E is the eastern buoy and C is the central buoy in Lake Superior); the watershed is 95% forested; the warming can effect: lake level, length of stratification (which affects biomass production), ice duration, thermocline depth, transparency and light delivery, makeup of plant and animal communities, invasive species, wind, and storminess; according to Dr Bob Sterner, Director of the U's Large Lakes Observatory, "the gaps in knowledge are just mind boggling" so how the Lake Superior ecosystem is changing over time is unknown

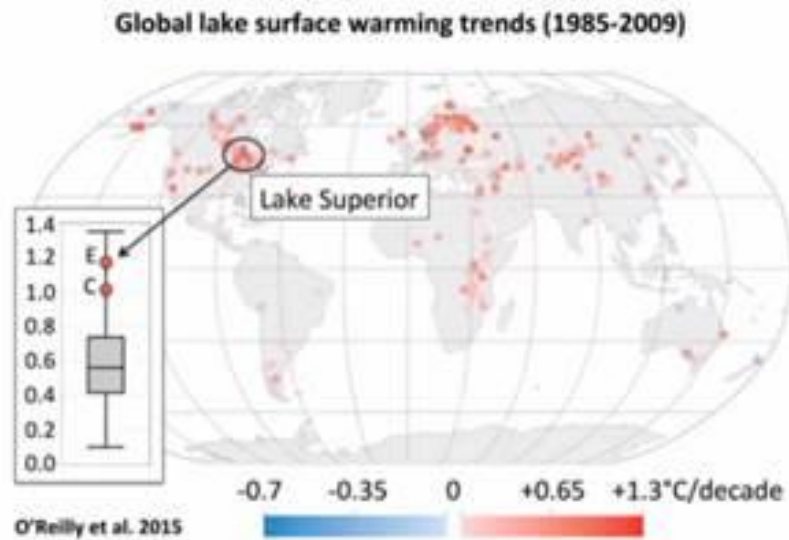


Figure courtesy of John Lenters

CILER is 1 of 16 NOAA Cooperative Institutes; it helps NOAA accomplish its goals in the Great Lakes by leading research, training scientists, and translating research into actionable science to meet societal needs

- Detroit Free Press: [Great Lakes water piped to Southwest 'our future,' says NASA scientist](#)
- InfoSuperior: [Scientists Puzzled by Rise in Mercury in Great Lakes Fish](#)
- Pioneer Press: [Great Lakes senators urge Trump to move ahead with Asian carp plan](#)

WATER SUPPLY

- Minnesota Spokesman Recorder: [Fix household water leaks and save an average of 10,000 gallons a year](#)
- Water Online: [Water Reuse Within Reach: Guidance For Potential Practitioners](#) [MN has 3 members on this blue ribbon panel: Anita Anderson (MDH), Brian Davis (Met Council), and John Eaton (City of Eagan)]
- DNR: [Groundwater sampling planned for Redwood County](#)
- Pioneer Press: [Meeting set to discuss Lakeland's rust-colored water](#)

WASTEWATER

- ABC5: [Religious Freedom Clashes With Environmental Law in Minnesota Court](#); Courthouse News: [Minnesota Amish Community Fights Wastewater Rules](#)

AG & WATER

- Northfield News: [Local farmers dealing with buffer law as pressure on small agriculture builds](#)
- Osakis Review: [Progress on buffer law](#)
- AgriNews: [Minnesota releases 6 alternatives for buffer law compliance](#)
- ENSIA: [How a new way of thinking about soil sparked a national movement in agriculture](#)
- KEYC 12: [Ketelsen Report - The Buffer Clarification Bill](#)

EXTRACTIVE INDUSTRIES

- MinnPost: [Three new cases expand the challenges to land exchange for PolyMet project](#)
- The Timberjay: [MPCA slams U.S. Steel over pattern of delay](#)
- DNR: [Quarterly PolyMet Permitting Update](#) and MPCA: [PolyMet's NorthMet mining project](#)

OPINIONS

- MinnPost: [Our mindset is the biggest obstacle to achieving success against aquatic invasive species](#)
- Austin Daily Herald: [Sparks: Senate tax bill helps Greater Minnesota](#)

BEYOND MINNESOTA

REGIONAL

- Modern Farmer: [Neonicotinoid Residue Found In Drinking Water For The First Time](#)
- The Cedar Rapids Gazette: [Iowa water sensors show 2016 uptick in nitrates](#)
- MPR: [Where the Water Goes](#) – Life and Death Along the Colorado River [book review]; *"Water is never only about water."*
- Chicago Tribune: [U.S. Steel chemical spill closes beaches, EPA measuring environmental damage](#); an failed expansion joint in a rinse water pipe caused the wastewater to be released to a different wastewater treatment plant and ultimately Burns Waterway through an outfall; it is unknown how long the discharge took place before it was discovered; the Indiana American Water Company closed its Ogden Dunes water treatment facility as a precautionary measure after the spill notification was received and switched to getting its water from the Borman Park water treatment facility in Gary
- News Deeply: [Drought Emergency Ends in California; Here's What's Next](#); state officials want CA to continue improving conservation and efficiency to prepare for future droughts

NATIONAL

- Water Online: [The Future Of Water Management](#) [a good primer on the benefits of IoT and smart water sensors]
- Bloomberg: [Thune Aims at Conservation Programs in Farm Bill Proposal](#) [click on the embedded summary hyperlink to see a 3 page summary of the proposed changes]
- E&E News: [Clean Water Rule-EPA to use 2 rulemakings to repeal and replace WOTUS](#)
- Science Daily: [US streams carry surprisingly extensive mixture of pollutants](#)
- The Conversation: [An electric fix for removing long-lasting chemicals in groundwater](#)
- Congress: 62 members sent a [letter](#) to leaders of the the House Subcommittee on Ag, Rural Development, Food and Drug Administration requesting that funding to USDA's Water and Sewer Loan and Grant Program be continued
- Circle of Blue: [Water Utility Cyberattack Rings Up Hefty Data Charges](#)

GLOBAL

- Manitoba Co-operator: [On-farm water collection key to drainage management](#)

MEETINGS

EMERGING CONTAMINANTS

Karla Peterson (Supervisor of the Community Water Supply Unit at MDH) recently attended the 2017 Science-Policy Confluence Conference on Securing Safe Drinking Water: Emerging Contaminants, hosted by the Environmental Law and Policy Center. At a recent brown bag seminar, she shared the national and local framework for addressing Contaminants of Emerging Concern (CECs).

At the federal level, EPA first determines how much of a contaminant may be present with no adverse health effects. This level is called the Maximum Contaminant Level Goal (MCLG), a non-enforceable public health goal. Next, EPA develops maximum contaminant levels (MCLs) as close as possible to the MCLG. These are enforceable standards applied to public water supply systems under the Safe Drinking Water Act (SDWA). It can take up to 20 years to develop and adopt a new MCL and, at this time, there are just over 100 MCLs, compared to about 80,000 human-made chemicals in use. To address this gap, EPA uses the Unregulated Contaminant Monitoring Rule to collect data about contaminants that are suspected to be present in drinking water and that do not have health-based standards set under the SDWA.

Oftentimes, there is only limited information available about CEC occurrences, their health effects, and the affected populations. But as data becomes available, MDH tries to help MN water suppliers with additional information, including:

- *screening profiles* that describe contaminants without assigning a threshold value,
- *risk assessment advice* that provides technical guidance concerning exposures and risks to human health,
- *health based values*, the concentration of a chemical (or a mixture of chemicals) that are likely to pose little or no risk to human health, and
- *health risk limits* are standards promulgated in rules that apply to chemicals in groundwater used as drinking water

In addition to providing health-related information about contaminants, MDH provides several other services to help protect drinking water:

- water monitoring (sampling and testing of 1,000 community systems and 6,000 non-community systems)
- sanitary surveys (from the more predictable source water through the more-difficult-to-manage distribution system)
- plan reviews (for new and modified systems)
- water operator certification (testing and continuing education)

As MDH staff develop guidance and standards, they must balance risks and benefits, considering the potential health impacts and the side effects of each treatment option, such as the release of other contaminants with their own health risks. For example, filtration can increase corrosivity, which can increase lead or copper levels that could potential affect development IQ in infants. Or, for reverse osmosis, added energy and water are needed to provide treatment. The cost of treatment options on a per capita basis is also a concern to the MDH, as it the lack of protections for nearly 400,000 private well users.

How do CEC's reach the environment? The #1 cause is excretion by humans (most drugs are not designed to be 100% metabolized). #2 is the inappropriate disposal of medications and personal care products and #3 is manufacturing sources.

Some pharmaceutical companies are beginning to advance green chemistry practices to minimize ingredients, waste, toxicity and energy and to evaluate the chemical effects on the consumer, as well as on the environment (including wastewater and drinking water effects). An ultimate objective would be to develop compounds that degrade into non-problematic byproducts. There is also a need for individuals to understand how their own actions can affect the environment and manage those risks.

WBL AUGMENTATION

In 2016, the Legislature directed the DNR to issue a request for proposals to obtain competitive costs for a White Bear Lake augmentation project, according to the criteria set forth in [2016 Mn Session Law Ch 172 Sec 12](#). A two-part RFP was issued in November 2016. Two teams submitted qualifications proposals in December 2016, but only one consulting-contractor team submitted a full response in March 2017; that team was led by S.E.H Design Build (SEHDB). The SEHDB team included SEH, Wenck (water quality impacts), Geislinger and Sons, Minger Construction (both contractors who have successfully completed major pipeline projects), and Magney Construction (experienced in the construction of water and wastewater treatment plants, lift stations and the Gilfillan Lake augmentation system). The lack of an authorized project and funding for it is the apparent reason for the sparse response.

This week, the DNR held a public meeting to describe, in detail, the findings of the SEHDB proposal response (the proposal will be posted on the DNR website at a future date). The design-build process closely evaluated the selected route (including the alignment, construction methods, tunnels, contaminated and structurally poor soils, and utility conflicts), the design of the filtration building, water quality impacts, and the cost. The proposed project would move up to 2 billion gallons per year (6,000 gallons per minute over 8 months of ice free conditions) through a 24" PVC pipeline. A 36" intake would be needed in East Vadnais Lake and a 24" outfall would extend 2,5000' into White Bear Lake. The pumping and treatment facility would be located on property owned by St Paul Regional Water Services. Four tunnels would be required along the route (under Co Rd E, 35E, Hwy 61 and White Bear Avenue) and numerous road segments would need reconstruction.

SEHDB staff felt their proposal, as submitted, could support the project goals, with one exception: there is not sufficient data to guarantee no loss of water quality in White Bear Lake. Unlike other Gilfillan and Snail Lakes, which are being augmented, White Bear Lake is an oligotrophic lake with exceptional water quality. The major concerns are the short and long term impacts of added phosphorous, which is estimated to be a 0.6 mg/L increase per foot of augmentation. Although phosphorous impacts can be mitigated via the design, the currently available data is insufficient and modeling is needed to make predictions. Investigation is also needed for: the impacts of hardness and sulfate; the possibility of thermal destabilization; along with a screening level analysis of metals, toxics, pesticides, and herbicides; and the effect on sediments in the chain of lakes from changes in water flow.

The cost estimates for operation and maintenance is \$413,000/yr and the design and construction estimates provided in the response are as follows:

Prelim and Final Design	\$2,063,000
Water Quality Analysis	\$415,000
Environmental Review	\$50,000 - \$2,000,000
Easements/Permits	\$350,000 - \$2,000,000
Owner Legal/Admin	\$1,000,000
Construction/Start Up	\$40,488,000
TOTAL	\$44,366,000 to \$47,966,000

A lower capacity alternative approach would save about \$4M and the railroad route would save about \$3M. The schedule assumes water quality analysis occurring from July 2018 to December 2020, followed by the environmental review and a two year construction period, with start up in May 2025.

An open question-answer period followed the proposal presentation. Topics included:

- the St Croix River could be a better water source; DNR said that evaluation was not in the legislative scope
- the cost of reverse osmosis if needed to control CECs: \$40M
- particulate filtration will reduce P, but not the dissolved fraction

- the Gilfillan and Snail augmentation systems were not tested to evaluate their treatment efficacy
- capital replacement costs were not included in the O&M budget
- full road reconstruction would be more desirable than the half-road reconstruction proposed
- 2 bgy could increase lake levels about 2'
- water would remain in the pipes during non-pumping months, but they are deep enough to prevent freezing
- the volumetric loss in WBL vs the surface area loss is what determines whether P is concentrated as lake levels decline
- treated drinking water from SPRWS could be used instead; not evaluated
- acceptable water quality targets for WBL have not been set; MPCA would view this as a nondegradation goal, while DNR would address volume and invasive species
- in a water purchase agreement with SPRWS, they would stipulate that drinking water always takes precedence and can require pumping to cease if they lack domestic water for their customers (e.g., in times of drought, pumping may not be increased to meet the protective elevation)
- the newly developed USGS model can be used to evaluate changing water levels and their effect on long term lake health (transient event analysis), but this has not been done; WBL levels need to fluctuate for ecosystem health (e.g., the return of aquatic vegetation in formerly dry areas provides habitat for aquatic life)
- WBL already has zebra mussels; in the initial stage of infestation, water clears because they are effective filter feeders. With time, the food web changes and their release of P-rich pseudo-feces will increase P levels that can lead to severe harmful algal blooms and deteriorated water quality.
- SPRWS is concerned about the effect of releasing 20,000 gpd of city water into Vadnais Lake as the filtration system is backwashed; an alternative disposal system should be evaluated
- Vadnais Heights is concerned about the effect of drawing more water through the chain of lakes
- the norther MN tribes have not been consulted regarding the potential release of additional water from Leech and Winnebegosh Lakes during drought periods to provide more Mississippi River water; DNR said there is a drought management plan in place to address this
- the pump building should be insulated to protect neighbors from engine noise

Having led the RFP process did not affect DNR's position of not supporting or advocating for augmentation. DNR is concerned about sustainable groundwater use that does not exceed safe aquifer yields and impacts on surface water features.

Next steps include sharing the report with Legislators, posting the information to the DNR web site, and beginning conversations with legislators about funding the water quality and environmental review steps if augmentation continues to be pursued.

REPORTS

STATE OF MN WATER

- DNR: [MN Stream Flow Report – 4/10/17](#)
- National Drought Mitigation Center: [4/11/17 MN Drought Monitor](#)

UPCOMING EVENTS

- Apr 18: DEED **MN Water Technology Export Roundtable: The Water Energy Nexus**, 10:00 a.m. to 1:00 p.m. @ Aeration Industries (4100 Peavey Road, Chaska) \$30 (includes lunch); register [here](#)

- Apr 19: **Water Action Day**; 8-4 pm meet with legislators, rotunda rally @ 1 pm; more info [here](#)
- Apr 24: **LWC Meeting**, 6-8 pm, State Office Building basement hearing room; details to come [here](#)
- Apr 25: Freshwater Society Moos Family Lecture: **The Death and Life of the Great Lakes** by Dan Eagan; St Paul Student Center; reception at 5:30 pm & lecture at 7:00 pm; free but registration is required [here](#)
- Apr 26: MGWA Spring Workshop: **Management, Analysis, and Optimization of Groundwater Data**; 8 am - 4:30 pm; U of MN Continuing Education and Conference Center (1890 Buford Ave, St Paul); \$145 member/\$195 nonmember; register [here](#)
- April 29: **Water for People Benefit Concert** featuring Big Bob & the High Rollers; Bogart's Event Center (14917 Garrett Ave, Apple Valley); \$10; opens at 7:30; organized by the MN American Water Works Association, the concert raises money to provide water infrastructure for 3rd world countries without clean drinking water
- May 4: **MN's Water Story – An Update for Policy Makers**; Minnehaha Creek Watershed District and Freshwater Society; stormwater BMP tour @ 5:30 pm, Steve Woods presentation and discussion 6:30 – 8:00 pm; St. Mary's Greek Orthodox Church (3450 Irving Ave S, Minneapolis); free to attend and light dinner provided, but RSVP by May 1st at tmamayek@minnehahacreek.org or 952-641-4508
- May 5: **N & E Metro Groundwater Management Area Project Advisory Team Meeting**; 8:30-11:30; DNR Central Office, 500 Lafayette Road, St. Paul,
- May 9: Minnesota Day at the **National Climate Adaptation Forum**; registration can be found [here](#)
- May 9: DEED **MN Water Technology Roundtable: Challenges & Solutions in Stormwater**; 9:30 am– 3 pm; \$30; more event info and registration link [here](#)
- May 18: **MN River Congress**; 4:30 pm networking fair and 7-9 pm program; Redwood Falls Community Center; Redwood Area Community Center (901 East Cook Street, Redwood Falls); \$30; register [here](#)
- May 22-25: **MN Public Drainage Manual Outreach Workshops**; 10:00-3:30; \$25 (includes lunch); 3 locations noted below; registration info to come
 - May 22, MN State Community and Technical College, Moorhead
 - May 23, Coyote Moon Event Center, St. Cloud
 - May 25, New Ulm Conference Center, New Ulm
- Aug 7-9: **WaterWorks! Drinking Water Institute for Educators**; Lakeville; details [here](#)
- Sept 19-20: **Great Lakes Commission Annual Meeting**; Duluth Entertainment Convention Center; more details to come